1 BASICS OF PSYCHIATRY

Basics of psychiatry

The term psychiatry is derived from two Greek words "psyche" meaning mind and "iatry" meaning healing or cure. Psychiatry is a branch of medicine that deals with problems of the mind. The term psychiatry was coined by German physician Johann Christian Reil.

Psychiatry Deals With 00:01:35

Disturbance of Cognition (= Thought)

- All of the mental processes that are required to acquire information and are sometimes used interchangeably with thought.

Disturbance of Affect (= Feeling)

- Affect means feelings or emotions. There is a problem with feelings.

Disturbance of Conation (= Behaviour)

- Conation means behaviour or action. A lot of times psychiatric patients have a behavioural abnormality.

Approach to A Patient 00:02:30

1. History: A detailed history of the patient is taken from the patient as well as the informant. The informant gives detailed history sometimes when the patient is himself is denying any behaviour.
2. Examination: General physical examination and systemic examination is done along with mental status examination (MSE).
3. Investigation: They have a very limited role in psychiatry. Investigations at times used to rule out other abnormalities.
4. Diagnosis: Our aim is to reach the diagnosis of the patient so that we can treat/manage the patient.

Informant 00:05:05

History is also taken from the informant. The reliability of the informant is checked based on various parameters:

1. **Consistent**: Whether the information being given by the informant is same in each interview. If the informant gives different histories in various interviews, it means that he is inconsistent.
2. **Chronological**: Information given by the informant should be in chronological order. When a patient is showing symptoms for 6 months, the informant should be able to tell which symptoms started first and how the symptoms progressed.
3. **Coherent**: This means that all the pieces of information should be logically connected.
4. **Closeness with the patient**: This means the length of stay with the patient.
5. **Concern for the patient**: There should be a genuine concern for the patient especially for medico-legal cases, e.g., if a husband brings a wife and gives certain information but later it is known that a divorce case is going on, there may be some vested interest.
6. **Intellectual/Observational Ability**

History 00:07:55

1. Identification Data
2. Chief complaints
3. History of presenting illness
4. Past history
5. Family history
6. Personal History

Personal History

- Birth and early development
  - Prenatal exposure to infections like influenza may have a risk of developing schizophrenia in the future.
  - If there is a certain complication during delivery even that may lead to schizophrenia later on in life.
- Education
  - A detailed history of the education of the patient is taken to understand if the person was having problems in certain areas of learning. Suppose a person has difficulty in reading, the person may be suffering from a specific learning disability.
- Occupational history
  - This may include when the person started working, job changes, how well he is at the job, etc.
- Substance use
  - Use of a substance such as smoking, alcohol, etc.
- Marital and sexual history
  - This may include when the person got married, how the marital and sexual relationship is, menstrual history, etc.

Q. Which of the following is not included in personal history?

a. Early development history
b. Sexual history
c. Occupational history
d. Food preferences

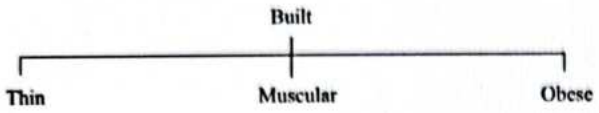
Mental Status Examination (MSE) 00:11:31

Examination of a psychiatric patient is done through mental status examination.

Aspects of MSE:

General Appearance and behaviour

- Built



  - E.g.,
    - → If there is a 16-year-old female who is appearing extremely thin. The build may serve certain clues that she may be suffering from anorexia nervosa.
    - → If a 19-year-old female comes who is very obese maybe suffering from bulimia nervosa.
    - → In the case of schizophrenia, which is a psychotic disorder, antipsychotic drugs are used to treat the condition which has an important side effect, weight gain.
- Dressing

  - Dressing is examined with respect to weather conditions.
  - E.g., If it is very hot outside and the person comes to the examination wearing layers of clothes and warm clothes, it is inappropriate dressing. This may suggest that the person is suffering from an illness such as schizophrenia.
- Grooming
  - The patient's self-care is grooming.
  - E.g., If the person comes with uncombed hair; foul-smelling, and dirt on the body, it suggests that the person has poor grooming. This was maybe suggestive of some serious illness like schizophrenia.
- Motor activity
  - Motor activity may be increased; the person may be continuously moving, as seen in certain disorders like Mania.
  - Energy also may be low in certain conditions; as is case of depression, motor activities are low.
- Attitude toward the examiner
  - In neurotic illnesses, patients are cooperative.
  - In Psychotic illnesses, patients display uncooperative behaviour.

Speech

- **Rate of speech**
  - This means the number of words a person speaks in a minute.
  - If the rate of speech in a person is very high and they are speaking fast, and it is difficult to understand what they are speaking. This may happen in certain disorders such as mania.
  - In certain disorders, the rate of speech may be very low, and the person will speak very slowly. This is common in the case of depression.
- **Volume**
  - Sometimes the volume of the patient is really loud even if somebody standing close. Volume may be high in certain disorders like Mania.
  - Volume may be very low, and the person may even whisper in certain disorders such as depression.
- **Coherence**
  - It is seen if the speech is understandable.
  - Incoherent speech is seen in certain illness such a schizophrenia.

Mood and Affect

00:22:12

- These terms are used to denote the feelings and emotions of the person. There are important differences between mood and affect.

Mood	Affect
The mood is a persistent and pervasive emotional state. Persistent means it is present most of the time. Pervasive means it is present in most places.	Affect is an expression of emotion that is observed by the therapist. Emotions are expressed on the face and through body language which can be observed.
The mood is something that the patient will tell.	The affect is something that is observed by the therapist.
Mood is an internal phenomenon.	Affect is something that will be observed by a doctor and is external.
The mood is long-term. It is an emotional state that is present for some time.	Affect is cross-sectional. It is observed at that very moment.

- **Case**
  - A 35-year-old female has been complaining of low mood, decreased interest, decreased energy, less sleep, and appetite for the past 2 months.
  - She is suffering from a mood disturbance which is depression. When asked about their mood she says that her mood is sad. The affect seems to be sad or depressed.
  - Treatment has started and she comes after 2 weeks: when asked how her mood was she replies that it is sad. When talking she comes across as more cheerful. The affect seems to be normal or euthymic.

- **Important aspects of mood and affect:**
  - **Quality:** It is the predominant emotional state. For example; sad, cheerful, euthymic, anxious, irritable, fearful, etc.
  - **Abnormality of quality:**
    - → **Elevation of mood:** Excessive happiness (if the person is happy without any reason). There are various degrees of this.
      - Euphoria: When the person is happy without any reason. It can be seen in Mania
      - Elation: Euphoria with increased psychomotor activity. It can be seen in Mania.
      - Exaltation: There is increased happiness with increased psychomotor activity and delusion of grandiosity (the person makes big and false claims).
      - Ecstasy: It is a state of bliss as if the person and God have become one.
    - → **Depressed mood:** Sad
      - If the person is sad, feeling low or crying. Mostly seen in conditions of depression.
    - → **Dysphoric mood:** Irritable mood
      - It is sometimes seen in Mania.
  - **Abnormalities of Affect**

    These are certain fluctuations of affect.
    - → **Flat affect (Blunt affect):** The emotion is not changing even with a stimuli. When the patient is talking about any sad event of his life (like death of a loved one), or something good (like a promotion; winning lottery), there is no change in his emotions, this is known as flat affect. This is found in conditions like schizophrenia.
    - → **Labile affect:** There is rapid and abrupt changes in emotion without any stimuli. If the patient starts laughing or starts crying without any reason, it is a labile affect. This is seen in cases of Mania and organic mental disorders.

- **Affect is also assessed in various other aspects:**

  - **Appropriateness of affect**
    - → This is measured with respect to the setting or the situation. For e.g., if a person starts laughing at a funeral, it is very inappropriate. This is seen in conditions like schizophrenia.
  - **Congruency of affect**
    - → It is measured with respect to the thoughts or feelings of the person. If the patient's affect is appearing happy, while his thoughts or feelings are opposite, this is known as incongruent affect. It can be seen in illnesses like schizophrenia.

Important Information

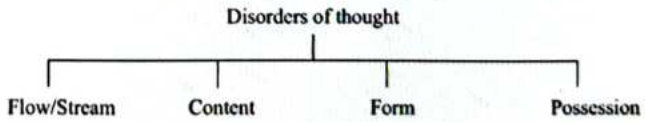
Anhedonia
- There is decreased interest in pleasurable activity.
- It can be seen in depression and in schizophrenia.
- This is one of the negative symptoms of schizophrenia.

Alexithymia
- There is inability to express or understand emotions.

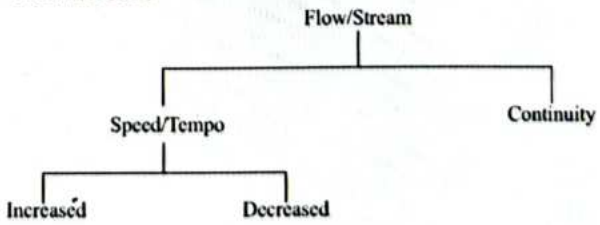
Structures related to emotions
Generation of emotions - Limbic system
Regulation of emotions - Frontal lobe

Thought

Disorders of thought are divided into four important domains.



a) Flow/stream



When the tempo of thought is increased:

- **Flight of ideas**
  - Thoughts follow each other rapidly.
  - The person will ultimately not be able to answer questions because his thoughts are flowing very quickly. In flight of ideas, the goal is not reached.
  - Some connections between the thoughts can be seen.
  - The connection can be by chance.
  - Some connections can also be seen in clang associations or rhyming words.
  - The patient may speak illogically but they are connected by rhymes.
  - This can be seen in Mania, schizophrenia, and organic mental disorders.
- **Prolixity**
  - The thoughts are moving fast but their speed is less than flight of ideas
  - Also known as ordered flight of ideas.
  - The patient speaks very fast but ultimately comes back to answer the question. The goal is reached.
  - It is seen in condition like hypomania.

When speed or tempo is decreased:

- **Retardation**
  - Decrease in the speed of thought.
  - This is seen in depression.
- **Circumstantiality**
  - Thinking proceeds slowly.
  - The person gives unnecessary and trivial details.
  - The goal is ultimately reached.

When continuity is compromised:

- **Perseveration**
  - The thought persists beyond the point of relevance.
  - This can be seen in the case of organic mental disorders and schizophrenia.
- **Thought block**
  - There is a sudden arrest of thought.
  - A blank is left and then suddenly the person begins with an entirely new thought.
  - It is seen in schizophrenia.

b) Content 00:57:00

- **Delusion**
  - A false, fixed, and unshakeable idea or belief that is held with extraordinary conviction. The person is fixed on the thought even if the evidence is given to prove him wrong.
  - For example, 20-year-old male claims that his neighbours want to kill him. After a lot of effort from the family as well as the neighbours, he cannot be convinced otherwise. This is a delusion.
  - It is unexplained by the cultural, social, and educational background of the person.
  - For example, if a certain culture refuses to cross the road after it was crossed by a black cat, it is not a delusion because it is a shared cultural belief/superstition.
  - **Types of Delusion:**
    - → Delusion of Persecution:
      - Most common delusion in psychiatric disorders.
      - Persecution means harm. Patient believes that someone is planning to harm him or kill him.
    - → Delusion of Reference:
      - The patient believes that someone is talking about him or spying on him.
    - → Delusion of Grandiosity:
      - The patient believes that he is God, that he has supernatural powers, knows famous people, has vast knowledge, or is very wealthy.
      - For example, if he claims that the Prime Minister or Chief Minister called him every day although they do not even know him, such false big claims are delusion of grandiosity.
      - This is observed in certain conditions like schizophrenia and Mania.
    - → Delusion of Nihilism (Delusion of Negation):
      - The patient denies the existence of his own body, loved ones, the world, and everything.
      - It is seen in psychotic disorders such as schizophrenia, and other disorders like depression.
      - **Cotard syndrome:** A patient with depression having delusion of nihilism.
    - → Delusion of Enormity:
      - The patient belief that he can produce a catastrophe by his actions.
      - For example, if a patient refuses to urinate because he believes that he will flood the world.
    - → Delusion of Guilt:
      - The patient believes that he is a sinner although not having committed any sin.
    - → Delusion of Poverty:
      - The patient is convinced that he is poor and in a state of destitution although it is not true.
    - → Delusion of ill Health/Hypochondrial Delusion/Somatic Delusion
      - Delusion of Infestation/Parasitosis/Ekbom's Syndrome: The patient reports that he believes insects are crawling under the skin.
      - Delusion of Dysmorphophobia: The person believes that he has misshapenness of body parts. For example, he thinks that his nose is large, his face is small, etc. In body dysmorphic disorder, this belief is not very strong and is more of a preoccupation that may not last long.
      - Delusion of foul body odour/Halitosis: The patient believes that bad body odour is coming from him although he is not able to smell it.

→ Declerambault's Syndrome/Erotomania/Delusion of Love:
  - The patient believes that someone (usually of a higher stature) is in love with the patient.

→ Othello's Syndrome/Delusion of infidelity/Morbid jealousy:
  - The patient believes that the partner or spouse is having an affair even though that is not true.
  - Prolonged alcohol use has been linked to this condition.

→ Delusional Misidentification Syndrome:
  - There is a problem in the Identification of other persons.
  - **Capgras Syndrome:** The person believes that someone who is closely related to him has been replaced by an exact double. The physical appearance of the people remains the same and there is acknowledgment of it. There is an argument with the close person. CAPGRAS: close person replaced by a stranger.
  - **Fregoli Syndrome:** The patient believes that a familiar person is posing as a stranger and can take multiple appearances. The physical appearances of the people change and there is acknowledgment of it. There is an argument with a stranger.
  - **Syndrome of intermetamorphosis:** The patient believes that others undergo changes in physical and psychological identities into entirely different people.
  - **Syndrome of subjective doubles:** It is the delusional belief of the existence of physical duplicates of self, living in different parts of the world.

Delusions can be divided into Bizzare Delusions and Non-Bizarre Delusions. 01:23:50

Bizzare Delusions:	Non-Bizarre Delusions
These are delusions that are scientifically impossible, or culturally implausible.	These are false delusions but are actually and scientifically possible.
For example, if a patient claims that aliens came and inserted a chip inside him and are now recording his movement.	For example, the delusion of infidelity.

In DSM IV, bizarre delusions were given importance. It was said if patients had a bizzare delusion; the patient have schizophrenia. Now, no such importance is given because of a lack of objectivity.

c) Form 01:27:15

Form means organisation. Abnormality of thought is known as formal thought disorder i.e. there is disorganization and abnormality of form. For example, in schizophrenia.

Normal thought examples:

In normal thoughts, everything is logically connected. For example, if one is planning to go on a date, he will think about booking a cab, reaching the cafe, ordering the coffee, drinking the coffee, paying for the drink, and coming back. This is a normal trail of thought (A→B→C→D→E).

Abnormal thought examples:

- **Loosening of association**
  - o There is breakdown in logical connection between the thoughts (the sentences do not make sense).
  - o For example, if the person things about ordering coffee, coming back home, reaching the cafe, black shirt, drink, booking a cab.
  - o It is seen in schizophrenia.
  - o C→A→E→B→D→E

- **Derailment/Knight's Move Thinking**

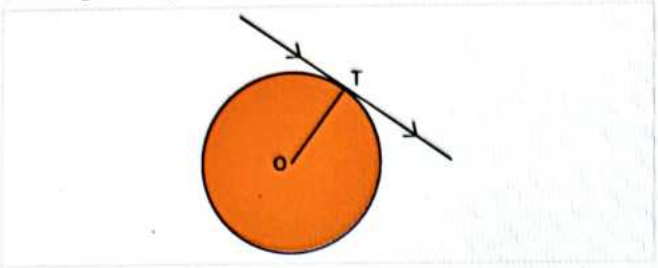
- **Jump off the track, to move to a different topic (no logical association)**

A ? B ----- C
 ↓
 - - → L → M → N

Wants to have coffee ----- Book a cab → Reach the cafe
 ↓
 - - - ► Weather is cold → I should buy a muffler

In thought block there is also this shift to a new topic. However, there was a problem of continuity and there was a pause. In the derailment there is no such pause; there is only shifting to a new topic.

- **Tangentiality**



  - Tangent is a line that touches a circle at one particular point and then moves straight forward and never touches the circle again.
  - In tangentiality, a reply to a question is oblique or tangential. The patient touches the topic and then moves away and the goal is not reached. The patient does not ever return to the topic of the question or answer it.
  - For example, if a person is asked who is his favourite actress and he answers that he like Indian movies, especially the songs/dances; he names his favourite actor and his most recent movie; he then says that he wants to become an orthopaedic surgeon.

- **Neologism**
  - Neo means new and logos means words. A completely new word or phrase is being used by the patient whose derivation cannot be understood.
  - For example, if one is talking to a patient who only knows the English language, and the patient says that he brought a new "pratnityat". He goes on to describe its colour and design and then points to his watch and says, "this is the new "pratnityat". It is not understood by anyone how he derived that word for the watch.
  - It can be seen in disorders like schizophrenia.

- **Incoherence/Word Salad**
  - The thoughts are incomprehensible and not making any sense.
  - For example, the patient says "I will go umbrella black fly water".
  - It can be seen in disorders like schizophrenia.

- **Talking past the point/Vorbeireden**
  - The reply of the patient shows that he understood the question (known from his answer) but is deliberately talking about the associated topic.
  - For example, the patient is asked what is the color of grass, and he replies that it is red; or if you ask what comes after sunday; he says that after tuesday comes sunday. This proves that he understood the question but chose to talk about an associated topic.
  - **Ganser Syndrome:** When talking past the point was seen in prisoners. It can be seen in other populations also.

- **Word approximations/Metonyms**
  - The person uses old words in new and unconventional ways but the meaning is evident.
  - For example, the patient calls 'gloves' hand shoes, or a 'watch' time vessel.
  - It is different from neologism because there it is difficult to understand how the word was derived.

d) Possession 01:41:26

Possession means loss of control or loss of sense of possession of thinking.

Two important abnormalities under this are:

- **Obsession**
  - This concept can be remembered with the mnemonic ROSI.

R - Recurrent thoughts/Images/Impulses
O - Own thoughts
S - Senseless
I - Irresistible

  - For example, the patient gets recurring thoughts that his hands are dirty; he acknowledges these thoughts as his own and knows that they do not make any sense. He is not able to stop these thoughts. This type of disorder is seen in obsessive-compulsive disorders.

- **Thought alienation/Passivity phenomenon**
  - The patient claims that thoughts are under outside influence.
  - **Thought Insertion:** The patient feels that outside thoughts are inserted in his mind.
  - **Thought Withdrawal:** The patient feels that someone is taking away the thoughts from his mind.
  - **Thought Broadcast :** The patient feels that the thoughts are leaving the patient and are being broadcasted to everyone and everyone is getting to know his thoughts.
  - This can be seen in disorders like schizophrenia.
  - These also come under SFRS (first-rank symptoms for schizophrenia).

Perception 01:47:47

Abnormalities of Perception

- **Illusion**
  - It is a false perception of a real object.
  - E.g.,

→ A person is sleeping at night, he wakes up and he said that he can see a snake under the bed. The person becomes frightened, shouts, and the family members come in and switch on the light. It is then seen that it was actually a rope. This snake was a false perception of the real object which was the rope.

→ If a person wakes up at night and says he sees a person standing behind the window; after switching on the light, it was actually the curtain

- **Hallucination**
  - It is a false perception without a real object.
  - It is a psychotic symptom.

Characteristics of Normal Perception/Object:	Characteristics of Hallucination
Normal perspective is clear. For example, one can see their mobile phone very clearly.	Very Clear (as vivid as real)
Normal perception of the real object occurs in outer objective space. It doesn't occur in one's mind.	Occurs in the Outer Objective Space
Normal perception of a real object is independent of one's will. One cannot wish and make an object disappear.	Independent of the Person's Will

  - The characteristics of Hallucination are similar to that of real objects. The patient will experience these characteristics as if they are real. But they are false.

- **Pseudo-hallucination**
  - Like hallucinations these are also clear and involuntary.
  - Hallucination occurs in the outer objective space. Pseudo hallucinations occur in the inner subject of space.
  - If a person says that he can see a person in his mind and that is out of his control, it is pseudo hallucination.

Types of Hallucination 01:58:02

Based on various senses hallucination can be divided into 5 types.

- **Auditory Hallucination**
  Most common type of Hallucination
  Patient is able to hear something.
  - **First person auditory hallucination/Thought echo**
    When a person can hear his own thoughts, and feels that his thoughts are echoing.
  - **Second person auditory hallucination**
    The patient is able to hear voices which is taking to the patient. Sometimes these voices may command him.
  - **Third person auditory hallucination**
    Patient is able to hear two or more voices that are talking to each other.
    There are two important types of third person auditory hallucinations:
    → Voices discussing about the patient
    → Running commentary on his actions.

- **Visual hallucination**
  - The patient is able to see things that seem real to him but not seen by others.
  - E.g., flashing of lights, an animal, a human face or an entire human.
  - The most common hallucinations in organic mental disorders are visual hallucinations.
  - It can also be seen in schizophrenia.

- **Olfactory hallucinations**
  - Olfaction means smell.
  - The patient can smell something bad. However, others are getting no such smell.

- **Gustatory hallucinations**
  - Gustation means taste.
  - The patient can taste something sweet, sour, or bitter.
  - These hallucinations can be seen in disorders like schizophrenia.
  - Olfactory and gustatory hallucinations can be seen in temporal lobe disorders like temporal lobe epilepsy and schizophrenia.

- **Tactile hallucinations**
  - This means a sense of touch.
  - These can be superficial or over the skin (Hot, cold, tingling, etc).
  - These can be kinaesthetic (sensation inside the muscles or joints).
  - Patient can also feel some sensations inside the internal organs (visceral).
  - Tactile hallucinations are also known as formication. Patient experience small insects crawling under the skin. These are also called cocaine bugs or magnum bugs. Cocaine users complain of the feeling of crawling bugs under their skin. Clinically scratch marks maybe seen in these patients.

Special Hallucinations 02:08:30

- **Functional hallucinations**
  - Real stimulus in one sensory modality producing hallucination in the same modality is called functional

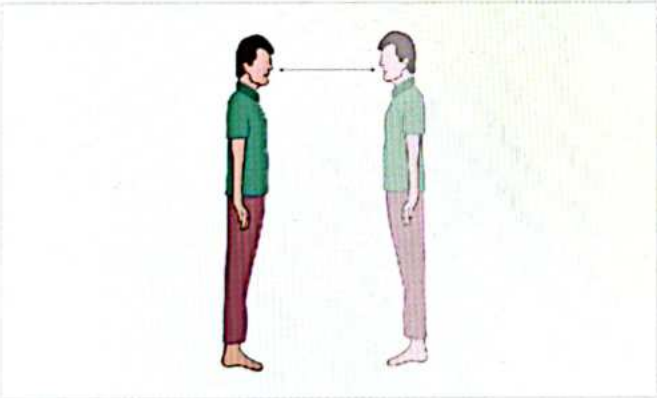
hallucination.

- A person says that when he hears the ringtone of the mobile phone, he hears the voice of a man from outside. A cell phone is a real object and a ringtone is an auditory stimulus. This is producing auditory hallucinations.

- **Reflex hallucinations (Morbid Synaesthesia)**
  - Real stimulus in one sensory modality and hallucination is produced in a different modality.
  - The person says that when he hears the ringtone (real perception), he sees a man walking in the room. Real perception is in the auditory modality, hallucination is produced in the visual modality.
  - When a person sees a red light, he hears a voice.
  - This can be seen in psychotic disorder.
  - This can also be seen in hallucinogens like LSD.

- **Extra campine hallucination**
  - Hallucination which is outside the limits of the sensory field.
  - For example, if a person says that he hears a voice that is coming from outside the room, it is within the sensory limits. But if a person living in Delhi claims that he can hear the voice of his friend who lives in the USA, or if the patient sees someone standing behind him when he is looking straight. These hallucinations are extra campine hallucinations.

- **Autoscopy or Phantom Mirror Image**



  - The patient experience seeing one self outside the body and knowing it is his own self.
  - **Negative autocopy:** When the patient looks in the mirror and sees no one.
  - **Internal autoscopy:** Patient can see his own internal organs.

- **Hypnagogic and Hypnopompic Hallucinations**
  - These hallucinations occur at a specific time.
  - Hypnagogic hallucination occurs when the person is going to sleep.
  - Hypnopompic hallucinations occur when the person is coming out of sleep.
  - It is one of the symptoms of the sleep disorder (Narcolepsy).

Delusion versus Hallucination 02:18:00

Delusion is a false belief (I know) and hallucination is a false perception (I see, hear, taste, etc.).

There is a delusion of infestation where the patient says that he knows there are insects under her skin. It is a belief; she is not experiencing them. But in case of tactile hallucination, she is experiencing them.

Higher Mental Functions 02:19:52

Cognitive functions are being assessed.

- **Orientation:** It is the awareness of self and surrounding with respect to time, place, and person.
  When a person is disoriented, first he will lose the sense of time, then the sense of place, and then the sense of person.
  This also comes back in reverse order.
  This is known as Ribot's Law.
  It is seen in cases of an organic mental disorder (delirium).

- **Attention:** The ability to attend to a specific stimulus without getting distracted is called attention. It is required to access other higher functions.
  Test to assess attention: Digit repetition/Digit span test
  The patient is asked to repeat certain digits after the doctor.
  - Digit forward test: Some digits are given to the patient and asked to repeat in a forward manner. If the person is given digits such as 2 and 7, he has to repeat 2 and 7, in that order. Normally a patient can repeat 5 to 7 digits to prove that their attention is intact.
  - Digit backward test: The patient is asked to repeat the digit in a backward direction. When he is given the digits 4 and 7, he has to repeat it as 7 and 4, in that order.
    Normally a patient can repeat 3 to 5 digits in the backward direction.
    The digit forward test is better out of the two, to check attention.

- **Concentration**
  Concentration is sustained attention i.e. attention for a longer time.
  Test for checking concentration: Serial 7s Subtraction Test/(100-7) test.
  The patient is asked to subtract 7 from 100, and to continue subtracting 7 from the answers.
  That way, he first gets 93, then he gets 86, then 79, and so on.
  If someone is able to do this correctly up to five times, their concentration is intact.
- **Memory**

Memory can be of three types based on the duration:

- **Immediate/short term/working memory**
  This is the memory of the past few seconds.
  Test: Tests of attention and concentration also check for immediate memory.
- **Recent memory**
  This is the memory of the past few minutes or hours or days.
  Test: The test conducted to check recent memory is 24 hour recall method.
  In this test the patient is asked to recall certain events that has happened in the past 24 hours; the information is then correlated with the family members, such as question asked is what the patient had for his last meal.
- **Remote memory**
  This is a memory that goes back months or years.
  It is tested by asking for personal information like the name of the school, wife, and children.
  Historic events can also be asked as a question, like the names of the past 2 or 3 Prime Ministers.

- **Intelligence**
  General information and calculation skills fall under this category.
  The patient can be asked to name five states of the country, 5 rivers, last 5 prime ministers. The calculation skills can be checked by giving some mathematical calculation.

- **Abstract thinking**
  Ability to understand hidden meanings and concepts are tested under this category.

  Test:
  - First Test is Proverb testing.
    Journey of a thousand miles begins with a simple step.
    The patient is asked to point out the meaning of this abstract sentence.
    Any big task with will start with smaller steps
    If the person is not being able to point out the meaning like that, he is not being able to understand the inner meaning, and there is a loss of abstract thinking.
    This is known as concrete thinking.
    It is seen in disorders like schizophrenia.
  - The second test is similarity testing.
    The similarity between the two objects is asked by the doctor to be pointed out the patient.
    The patient can be asked to point out the similarity between a car and an airplane.
    Similarity can be on 2 bases:
    → General classification/Functional similarity
    For example, the patient may say that both of these are modes of transport.
    → Specific similarity/Difference.
    For example, the patient may say that both of these run on fuel.
    The difference can be pointed out that one runs on the land and the other on the air.
    If specific answers are given, then, there is lost of abstract thinking.

If a patient is asked to point out the difference between an apple and an orange. When one has presence of abstract thinking he will say that both are fruits. One who has lost abstract thinking will point out things like both of them are round.

- **Judgment** 02:35:22
  Judgement is making the right decision after analysing the choices.
  When one wakes up in the morning he has so many options, he can watch something on the television, have coffee with his friends, or study. He chooses to study instead by carefully analysing his choices.

Types of Judgement:

- Test judgement
  A hypothetical situation is given to the patient and then he is asked what he will do.
  For example, a person is asked what he will do if the neighbour's house catches fire. Appropriate answers would be calling the fire brigade or calling for help. If the patient says that he will add more fuel to the fire, it means that he has impaired judgment.
  This is seen in psychotic disorders like schizophrenia.
  If a person is asked what he will do if a child is crying alone in front of his house; instead of saying that he will call the child helpline or for help, if such a person says that he will kidnap the child, that is impaired judgment.

- Social judgment
  This is the social behaviour of the patient in daily events. If the person is having harmful behaviour, like rash driving, fighting without a reason, or other unacceptable behaviour, this will say that there social judgment is impaired.

- Personal judgement
  This is how the person is able to take self care.
  When asked what the patient will do after getting discharged, if he says that he will start working again and continue with his normal life, his sense of personal judgement is intact. If he answers that after discharge he will buy a gun and start shooting people, it says that his personal judgement is impaired.

- **Insight** 02:40:07

Insight is the awareness of illness.

There are various grades of insight:

Grade 1: Complete denial of illness.

Grade 2: Slight awareness of being ill but denying it at the same time.

Grade 3: There is awareness of the illness, but the patient attributes it to external/physical/medical/unknown factors.

For example, when a person says that he knows he is mentally ill but it is because of the pressure that is coming from his work.

Grade 4: It is also known as intellectual insight. there is awareness of illness which is because of his own irrational feelings or emotions but the patient refuses to apply this knowledge to change his behaviour.

For example, when a person knows that he is suffering from depression but refuses to take the prescribed medication or therapy for it.

Grade 5: This is called true emotional insight. The person is aware of his illness which is because of his own irrational feelings or emotions. He agrees to apply such knowledge to change his behaviour.

When a patient takes his medicine properly, attends therapy sessions, and is taking steps to improve his life style. This is the highest level of insight.

Psychiatric illnesses are divided into neurosis and psychosis. In neurosis, insight is present. In psychosis, insight is absent.

Classifications in Psychiatry 02:44:15

ICD - 11

International Statistical Classification of Diseases, 11th revision by WHO.

This is for all disorders came in 2022.

DSM-5

Diagnosis and Statistical Manual of Mental disorders, 5th Edition, by American Psychiatric Association.

This is only meant for mental disorders.

This came in 2013

- **DSM IV TR** had a multi-axial system. It described various psychotic disorders into various axes.

There are five axes:

- Axis 1- Psychiatric disorders are put under this axis.
- Axis 2- Personality disorders and mental retardation.
- Axis 3- General medical conditions.
- Axis 4- Psychosocial or environment problems.
- Axis 5- Global assessment of functioning of the patient.

It is described from 0 to 100, where zero is the minimum functioning and 100 is the highest functioning.

For example, if someone has schizophrenia it is put under Axis 1.

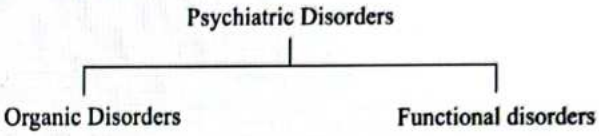
If the person has a personality disorder, it is put under Axis 2.

If the person has diabetes mellitus, then it is put under Axis 3.

If he is going through a divorce, then it comes under psychosocial problems, that is Axis 4.

The functioning of the person is around 40 which is included in Axis 5.

Previously psychiatric disorders were divided into



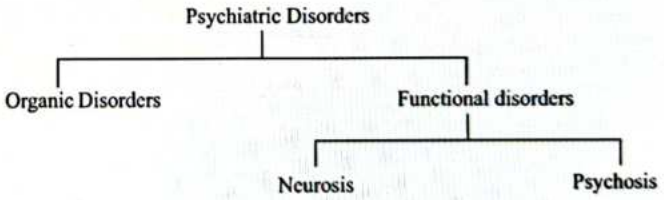
- **Organic disorders**: Disorders that have a demonstrable or apparent cause after which there have been some psychiatric symptoms.

For example, if a person has a head injury after which a CT scan is carried on; when someone has encephalitis, certain tests are carried out to see the extent of infection, these are all demonstrable causes, and are classified as organic disorders.

- **Functional disorders:** When there is no demonstratable or apparent cause.

Normally, when a brain scan of a patient suffering from depression is carried out, it shows everything is normal.

However, now, it is common knowledge that mental disorders also have effect on some parts of the brain.



Functional disorders are further classified into:

- Neurosis
- Psychosis

Difference between Neurosis and Psychosis

	Neurosis	Psychosis
Insight	Present	Absent
Personality	Preserved	Affected
Reality testing	Present	Absent
Judgement	Intact	Impaired
Delusion and Hallucination	Absent	Present

Examples	Anxiety Disorders	Schizophrenia Delusional
	OCD	disorders
	Sexual disorders	Mania
	Depression	Psychotic depression

Disorder

02:57:20

If someone does not do in well in an interview, and is sad for a few days but then starts behaving normally. How to say if it was depression or normal mood fluctuations?

1. **Fulfilment of symptom criteria:** There are certain criteria that are to be fulfilled for it to become a disorder.
2. **Fulfilment of duration of criteria:** For example, in depression the symptom should be present for at least 2 weeks.
3. **Impairment of functioning:** The patient's occupational, social, and personal activities are affected. In the case of severe disorders, it is even more disrupted. Disruption may be high for certain disorders and low for others. For example in schizophrenia, which is a psychotic disorder, there is very evidence of impairment of functioning. But in delusional disorder, there is very limited impairment.

Q. A patient says "home is sweet, sweet in diabetes, diabetes urine has sweet, sweet is hell" what is the symptom?
A. Derailment
B. Flight of ideas
C. Neologism
D. Loosening of association

Q. Which of the following differentiated pseudo hallucination from hallucinations?
A. As vivid as real
B. Sensory organs are not involved
C. Involuntary
D. Occurs in inner subjective space

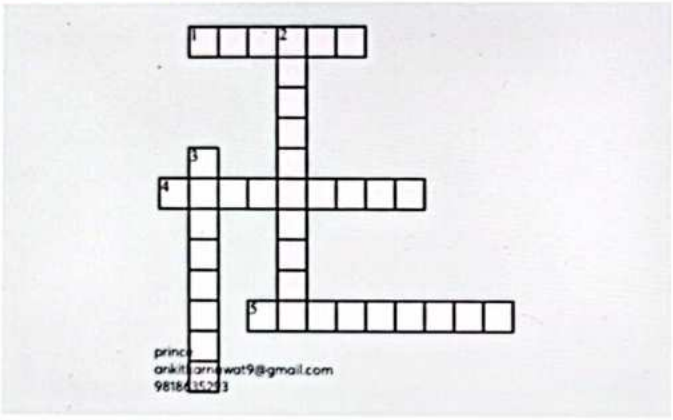
Q. Which of the following is a formal thought disorder?
A. Though insertion
B. Delusion
C. Derailment
D. Flight of ideas

Q. A 40-year-old male patient is suspicious that people are talking about him and spying on him, despite being tried to be convinced by the family members that no such thing is happening. Which of the following statement is true?
A. Delusion of persecution
B. Disorder of Thought
C. Hallucination
D. Seen in anxiety disorder

Q. A 20-year-old male presents with laughing one minute and crying the next without any clear stimulus. Which of the following best describes the symptom?
A. Incongruent affect
B. Elation
C. Labile affect
D. Flat affect

CROSS WORD PUZZLES

Crosswords Puzzle1



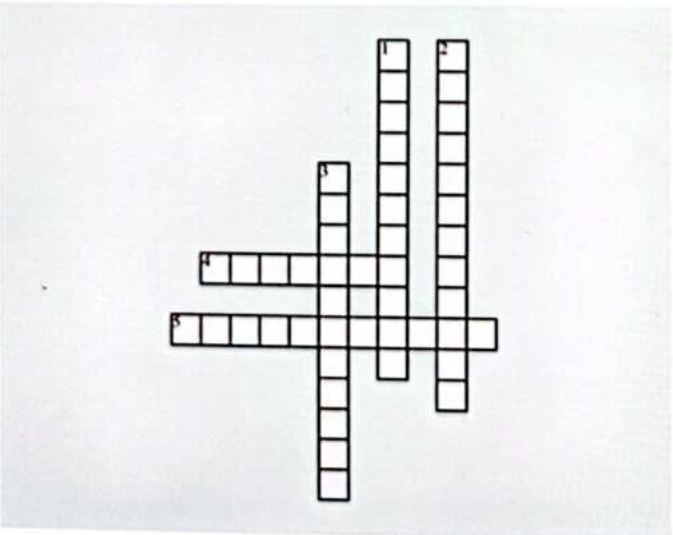
Across

1. If there is problem with feelings, sometimes the person is feeling very sad, sometimes they are feeling excessively sad or angry, it is disturbance of -----.
4. Disturbance of all of the mental processes that are required together information and is sometimes used interchangeably with thought is called disturbance of ------.
5. DSM IV TR has a multi-axial system. It described various ---- disorders into five axes.

Down

2. Affect means feelings or -----.
3. Disturbance of ------ means disturbance in behaviour or action.

Crosswords Puzzle2



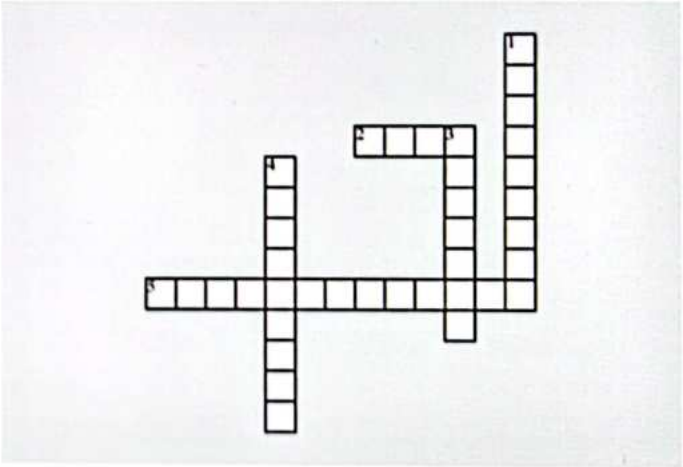
Across

4. General ----- conditions fall under axis 3 of the DSM IV TR.
5. ----- disorders are put under axis 1 of the DSM IV TR.

Down

1. ------ disorders and mental retardation fall under axis 2 of the DSM IV TR.
2. ----- or environmental problems fall under axis 4 of the DSM IV TR.
3. Global assessment of ----- of the patient falls under axis 5 of the DSM IV TR.

Crosswords Puzzle3



Across

2. ----- memory is a memory that goes back months or years. It is tested by asking personal information like name of school, wife, children.
5. ------ is sustained attention.

Down

1. A psychiatrist is asking the patient to repeat digits after him in a forward or backward direction. The patient is being checked for -----.
3. ----- disorders are disorders that have a demonstrable or an apparent cause after which there have been some psychiatric symptoms.
4. A person with neurosis has a ------ personality; it is not affected and remains the same.

2 SCHIZOPHRENIA AND OTHER PSYCHOTIC DISORDERS

Disorders to be discussed

- Schizophrenia
- Acute psychosis
- Delusional disorders
- Schizoaffective disorders
- Treatment and psychopharmacology

Schizophrenia 00:00:35

- One of the common severe mental illnesses.
- Prototype of psychotic disorders.

A. History of Schizophrenia

- **Benedict Morel** - coined the term Demence precoce.
  - Coined the term by identifying the symptoms of Schizophrenia.
- **Emil kraeplin** - coined the term Dementia praecox.
  - Classified psychiatric disorders into 2 types.
    - → Dementia praecox
    - → Manic depressive illness.

Dementia Praecox	Manic depressive illness
• Early onset. • Long term deteriorating course. • Cognitive decline is seen.	• Episodic (Period of normal functioning in between) • No cognitive symptoms.

- **Eugene Bleuler** - coined the term Schizophrenia. 00:03:00
  - Schizo = split, phrenia = mind.
  - Split between the thoughts and feelings.
  - Also gave some symptoms - Bleuler's 4As:
    - → **Association disturbances** - losing the association, formal thought disorder.
    - → **Affect disturbances** - flat affect.
    - → **Autism** - fantasy thinking
    - → **Ambivalence** - inability to make decisions.
- **Kurt Schneider's** - Schneider's first rank symptoms (SFRs) 00:04:41
  - **Auditory hallucinations**
    - → Audible thoughts or thoughts echo
    - → Voices discussing about him
    - → Voices commenting on one's action or giving a running commentary.
  - **Thought alienation phenomenon**
    - → Thought insertion - patient says someone is inserting the thoughts in his mind.
    - → Thought withdrawal.
    - → Thought broadcast.
  - **Made phenomenon**
    - → Made impulses
    - → Made feelings
    - → Made acts
      - – Patient experiences his feelings or impulses or acts influenced by others.
  - **Somatic passivity**
    - → Patient is a passive recipient of some bodily sensation.
    - → Imposed by an external agency.
    - → Ex: Mr. Bholu is a patient. Complaints about abdominal pain due to the radio waves sent by the aliens from other planets.
  - **Delusional perception:**
    - → Patient experiences normal perception.
    - → Gives it a Delusional perception.
    - → Ex: A patient visiting a party sees a spoon with a crown. Starts assuming that he is the king of the world. This is Delusion of grandiosity.
    - → Occurs simultaneously.
    - → **Ex:** Mr. Golu sees his wife in a red saree. Assumes that she wants to kill him. This is the delusion of persecution.

Primary Delusion 00:14:45

- Direct result of underlying disorder.
- Not from any other morbid phenomenon.
- **Ex:** Delusion perception

Secondary Delusion

- Derived from other morbid psychological phenomena.
- **Ex:** Mania which is a Delusion of grandiosity.

B. Epidemiology of Schizophrenia 00:16:22

- **Lifetime prevalence** - 0.7% (according to recent updates).
  - Earlier 1%.
- **Point prevalence** - 0.5 to 1%.
- **Incidence rate** - 0.15 to 0.25/1000.
- It is highly hereditary.
- Prevalence is more in relatives.

Prevalence of schizophrenia	%
Non twin sibling	8
Child with 1 parent with schizophrenia	12
Child with both parents with schizophrenia	40
Dizygotic twin	12
Monozygotic twin	47

- **Gender** - prevalence is nearly same in both males and females.

	Males	Females
Peak age of onset	10 to 25 years	• **25 to 35 years** • **Has bimodal distribution.** • **One peak occursaround 25 to 35 years and the other around 40 years.**
Prognosis	Poor - because occurring at an early age.	Better

- **Late onset of Schizophrenia** - onset occurs after 45 years of age.
  - Have a good prognosis.
- **Body type**
  - Asthenic (thin) and athletic (thick) - more prone to develop Schizophrenia.
  - Pyknic (short, fat) - more prone to develop Bipolar disorder.

C. Etiology of Schizophrenia 00:22:15

- **Genetic factors**
  - Monozygotic concordance rate is higher than the dizygotic concordance rate.
  - High risk in family members with Schizophrenia and Bipolar disorders.
  - Linking sites: 1q,5q ; 6p,6q ; 8p,10p ; 13q,15q and 22q.
  - 30% of patients with 21q 11.2 deletion syndrome or DiGeorge velocardiofacial syndrome develop schizophrenia.
  - **Candidate genes** 00:24:10
    - → DTNBP1/ dystrobrevin binding protein1/ dysbindin.
    - → NRG1/ Neuregulin1
    - → DISC1/ disrupted in schizophrenia
    - → COMT/ Catecholamines -o- methyltransferase.
    - → GRM3/ glutamate receptor metabotropic
    - → RGS4/ regulator of G protein signaling.
    - → DAOA (G72)/ D amino acid oxidase activator.
- **Neurotransmitters** 00:24:49
  - **Dopamine hypothesis**
    - → Earlier hypothesis.
    - → ↑dopamine levels in schizophrenic patients.

Dopamine Pathways

1. Mesolimbic pathway

- Starts from the ventral tegmental area (VTA) of mid brain to the nucleus accumbens of the limbic system.
- Increase in dopamine levels.
- Leads to positive symptoms.
  - Delusions
  - Hallucinations

2. Mesocortical pathway

- Starts from the VTA of the midbrain to the prefrontal cortex.
- Decrease in dopamine levels.
- Leads to negative symptoms.
  - **Serotonin (5HT)**
    - → Increased in schizophrenic patients.
  - **Other neurotransmitters**
    - → GABA
    - → Glutamate
    - → Norepinephrine
    - → Acetylcholine
    - → These are decreased in patients with schizophrenia.
- **Neuropathological factors**
  - **Cerebral ventricles**
    - → Reduction in cortical volume (greymatter).
    - → Enlargement of lateral and 3rd ventricles.
  - **Limbic system:** Structural abnormalities
    - → Decrease in size of Hippocampus, Amygdala, parahippocampal gyrus.
    - → Functional abnormality is also seen in Hippocampus.
  - **Prefrontal cortex:** Structural and functional abnormalities.
  - **Thalamus**
    - → Neuronal loss in medial Dorsal nucleus of Thalamus.
  - **Basal ganglia and cerebellum**
    - → Abnormalities reported but findings are inconsistent.
- **Other factors**
  - Early developmental factors
  - Childhood or adolescence factors.

Early Developmental Factors	Childhood Developmental Factors

• Paternal age > 60 years.
• Seasonality of birth - winter or early spring.
 	
Maternal factors
• Complications: Preeclampsia, bleeding, premature birth, low birth weight of child, asphyxia, c-section etc.
• Infections during pregnancy - influenza.
• Malnutrition
	• Childhood trauma
	• Social isolation
	• Upbringing in urban areas
	• Use of cannabis
	  ○ Exposure of homozygous COMT valine allele people to cannabis.
	  ○ Also with methionine allele.
	• Migration
	  ○ More risk to the 2nd generation.

D. Symptoms of Schizophrenia 00:33:33

i. Positive Symptoms (psychotic symptoms) 00:33:49

- **Delusions:** Most common is Delusion of persecution.
- **Hallucinations:** False perceptions without any real object.
  - Most common - auditory hallucinations.
- Patients respond well to medications.
- Have a good prognosis.

ii. Negative Symptoms 00:35:45

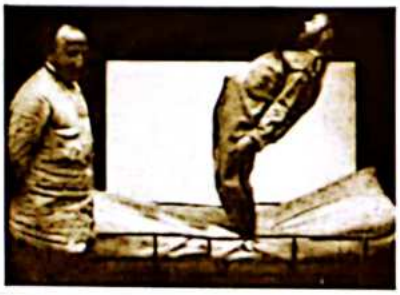
- **Anhedonia** - loss of interest
- **Avolition** - loss of will / drive (loss of motivation).
- **Affective blunting** - inability to express emotions.
- **Asociality** - decrease in drive to socialize.
- **Alogia** - decrease in verbal communication.
- **Attention deficits** - not able to pay any attention.
- **Apathy** - lack of concern.
- Called negative symptoms because everything is getting reduced.
- Don't respond well to medications.
- Have a bad prognosis.

iii. Disorganized Symptoms 00:39:50

- **Disorganized speech and or thoughts.**
  - Formal thought disorders.
- **Disorganized behavior** - inappropriate behavior.
- **Inappropriate affect** - with respect to setting or social behavior.

iv. Catatonic Symptoms 00:41:20

- Basically these are motor symptoms.
- Karl Kahlbaum - coined the term catatonia.
- **Symptoms**
  - **Stupor:** Extreme hypoactivity or immobility.
  - **Excitement:** Extreme hyperactivity.
    → Non goal directed activities.
  - **Mutism** - no or little verbal communication.
  - **Catalepsy:** Maintaining odd posture for a longer time.
    → Passive phenomena.
    → **Ex:** Examiner asked the patient to be in a particular position and the patient maintains it for a longer time.
  - **Posturing:** Same as catalepsy.
    → Active phenomena.
    → Patient himself gets into the posture and maintains it for a longer time.



  - **Waxy flexibility**
    → Feeling of resistance while making passive movement on the patient.
    → Like bending a wax candle.
  - **Negativism:** Patient opposes or gives no response to instructions.
  - **Automatic obedience:** Patient becomes excessively cooperative.
  - **Mannerism:** Repetitive odd movements.
    → Purposeful movements.
  - **Stereotypy:** Repetitive odd movements.
    → Non purposeful movements.
  - **Echolalia:** Mimicking examiner's speech.
  - **Echopraxia:** Mimicking examiner's actions.
    → Praxia = movement.
  - **Grimacing:** Maintenance of odd facial expressions.
  - **Ambitendency:** Inability to decide motor movements.
- If a patient has 3 or more symptoms among these they are called catatonic symptoms.

v. Symptoms related to suicide, violence and homicide 00:51:45

Suicide

- Most common cause of premature death in patients with schizophrenia.
- **Rate of suicide** - 5 to 6% (earlier studies - 10%, 20% attempts suicide).
- **Risk factors**
  - Presence of major depressive disorder.
  - Patients with best prognosis - having few negative symptoms and less affect disturbances.
    → Paradoxically high risk.
  - **Young male**
    → Decline in higher level of functioning.
    → Hopeless of the future.
  - **Increased symptoms**
    → Delusion of persecution
    → Command hallucinations
  - Comorbid substance use.
- Clozapine - decreases suicidal ideation.
- Antidepressants can be administered for comorbid depression.

Violence

- May be seen with untreated patients.
- More commonly victims than being perpetrators (committing violence on other people).

Homicide

- Rate of homicide is similar to the general population.

E. Diagnosis of Schizophrenia 00:54:35

Based in the following symptoms

- Delusions
- Hallucinations
- Disorganized speech
- Grossly disorganized or catatonic behavior.
- Negative symptoms.
- According to DSM-5 the patient should have 2 or more symptoms.
  - At least 1 symptom should be from the 1st 3 (Delusions, Hallucinations, Disorganized speech).
  - Should be present for 1 month.
  - Total duration of disturbances should be around 6 months.
- **Ex:** Patient having Delusions, hallucinations and disorganized speech for 8 months.
  - Patient is having schizophrenia.
- According to ICD 11 the duration should be 1 month.
- DSM 4: Gives special significance to:
  - Bizarre Delusions
  - SFRS hallucinations
  - No other symptoms are required to diagnose the patient with schizophrenia.

F. Classification of Schizophrenia 00:58:25

i. According to ICD 11 and DSM 5

- Classified schizophrenia based on the course of illness.
- **Schizophrenia with the first episode**
  - Currently symptomatic
  - Partial remission
- **Schizophrenia with multiple episodes**
  - Patient previously had 1 episode.
  - Develops another episode again.
  - Remission is present between the 2 episodes.
- **Schizophrenia with continuous course**
  - Symptoms are continuously present.
  - To diagnose this type the symptoms should be present up to 1 year.
  - Unspecified type.

ii. Subtypes of Schizophrenia 00:59:00

- Earlier ICD 10 and DSM 4 classified schizophrenia based on the symptoms.
- These subtypes are now removed from the newer classification.
- The subtypes are:
  - **Paranoid schizophrenia**
    - → Most common
    - → Have Delusions and hallucinations.
    - → Late onset
    - → Good prognosis
    - → Personality is preserved.
  - **Hebephrenic or disorganized**
    - → Have disorganized symptoms like giggling, mirror gazing etc.
    - → Early onset
    - → Poor diagnosis
    - → Severe personality deterioration.
  - **Catatonic schizophrenia**
    - → Mostly catatonic symptoms are present along with other symptoms.
    - → **Treatment:** Lorazepam (IV) and Electro Convulsive Therapy.
    - → Best prognosis
  - **Residual schizophrenia**
    - → At an early stage the patient has delusions and hallucinations.
    - → Later it becomes minimal and mostly shows negative symptoms.
  - **Undifferentiated schizophrenia**
    - → There are features of > 1 subtype.
    - → Difficult to differentiate or put into one subtype.
    - → Patient has a mixture of symptoms.
  - **Simple schizophrenia**
    - → Patient has predominantly negative symptoms.
    - → Worst prognosis
    - → According to ICD10 if these negative symptoms are present more than 1 year then can be called simple schizophrenia.
  - **Post schizophrenic depression**
    - → Schizophrenic symptoms in the past 1 year.
    - → Now it has improved.
    - → Later develops depressive symptoms.
    - → High risk of suicide.
- Mnemonic: PHC R USP

Important Information

- Best prognosis - Catatonic schizophrenia
- Worst prognosis - Simple schizophrenia.

iii. Other Classifications 01:07:50

- TJ Crow classified schizophrenia into 2 syndromes:
  - Type 1
  - Type 2

Feature	Type 1	Type 2
Symptoms	Positive symptoms	Negative symptoms
Response to treatment	Good	Poor
Ventricles	Normal	Dilated
Prognosis	Good	Poor

- **Van Gogh Syndrome:** Dramatic self mutilation in schizophrenic patients.
- **PfRopf Schizophrenia:** Schizophrenia occurring in patients with mental retardation.
- Substances causing schizophrenia like symptoms:
  - **Hallucinogens** - Phencyclidine, amphetamine, cocaine, cannabis.

iv. ICD 11 01:09:57

- Separated catatonia into a separate diagnostic category.
- **Includes**
  - **Catatonia associated with another mental disorder**
    → Mood disorders
    → Schizophrenia
    → Autism spectrum disorder
  - **Catatonia induced by psychoactive substances**
    → Also includes medications.
  - **Catatonia unspecified**

G. Prognostic Factors of Schizophrenia 01:11:00

- Two
  - **Good** - Good prognosis
  - **Bad** - Bad prognosis

Factor	Good	Bad
Onset	Acute (within 2 weeks)/ abrupt (within 2 days)	Insidious (symptoms started gradually/ slow)
Age	Late	Early
Subtypes	Catatonic/ Paranoid	Simple (Worst) / Hebephrenic
Gender	Female	Male
Prominent Symptoms	+ve	-ve
Mood symptoms	Present	Absent
Family history	Mood disorder (like bipolar, mood disorders)	Schizophrenia
Marital status	Married	Unmarried/ divorced
Social Support	Good (has good support from family)	Poor (lacks support from family)
Premorbid functioning	Good	Poor
Employment	Employed	Unemployed
Precipitating factors	Present	Absent

H. Treatment of Schizophrenia 01:18:09

i. First Line Drugs (antipsychotics/ neuroleptic)

- **Types:** Two main categories,
  - 1st generation/ typical antipsychotics
  - 2nd generation/ atypical antipsychotics

Characteristics	1st generation/ typical antipsychotics	2nd generation/ atypical antipsychotics
MOA	D_2 receptor antagonist	D_2 and $5HT_{2A}$ receptor antagonists Mnemonic: 2A - A for atypical.
Extrapyramidal symptoms	More	Less
Metabolic side effects • Weight gain • HTN • Diabetes • Hyperlipidemia	Less	More
Action	Acts on +ve symptoms	Acts on both +ve and -ve symptoms

- **Side effects of antipsychotics - Movement disorders/ Extra pyramidal symptoms (EPS)**
  - **Cause:** Blockage of D_2 receptors in the Nigrostriatal pathway
  - **Intensity:** Typical antipsychotics > Atypical antipsychotics (as typical antipsychotics blocks the D_2 receptors only).
  - **Potency:** Highly potent D_2 antagonists show more symptoms.
  - **Route of administration:** Parenteral (IV/ IM) > Oral

Important Information

- **Nigrostriatal pathway** 01:21:50
- Nigro - Substantia nigra
- **Path:** Substantia nigra → Basal ganglia (striatum)

D_2 receptors are blocked
↓
↓ in Dopamine
↓
↑ Motor symptoms (Extra pyramidal symptoms)

- Can be correlated to parkinson's where ↓ in Dopamine can lead to tremors, rigidity, and other movement disorder symptoms.

- **Types of EPS** (Mnemonic: Dance Party AT Night) 01:23:55
  - → Dance - Acute Dystonia
  - → Party - Drug induced Parkinsonism/ Pseudo parkinsonism
  - → A - Akathisia
  - → T - Tardive dyskinesia
  - → Night - Neuroleptic malignant syndrome (NMS)

Types of EPS	Description with Symptoms
Acute Dystonia	• **Onset:** Earliest, can occur within a few mins of IV/IM. • Sudden muscle contraction • **Eyes:** Oculogyric crisis (rolling upwards) • **Neck:** Torticollis (neck muscles will be twisted to one side) • **Jaw muscles:** Trismus (contracted) • **Larynx:** Laryngospasm. • **Glossopharyngeal:** Dysarthria, Dysphasia, Dystonia. • **Rx** o Parenteral (IV/ IM) anticholinergic - Benztropine, diphenhydramine, promethazine o Oral Anticholinergics - For prophylaxis
Drug induced Parkinsonism/ Pseudo parkinsonism	• **Onset:** Days-weeks. • **Parkinson's symptoms** o Tremors (coarse) o Rigidity o Bradykinesia o Rabbit syndrome (peri oral tremors, usually at a later stage). • **Rx** o Anticholinergic drugs - Benztropine, diphenhydramine, trihexyphenidyl o Other → Reducing antipsychotic drugs → Changing drug to Atypical/ low potency typical antipsychotics
Akathisia	• **Most common** • Restlessness o **Subjective signs** (patient may tell that he has restlessness) o **Objective signs** (others will notice) → Rocking motion → Placing around → Rapid alteration of sitting and standing • **Rx** o Beta blockers - Propranolol (DOC) o Anticholinergics o Benzodiazepines o Other → Reducing antipsychotic drugs → Changing drug to Atypical/ low potency typical antipsychotics
Tardive dyskinesia	• **Onset:** Late • Dyskinesia - Abnormal movement • Cause: Super sensitization of D_2 receptors. • **Symptoms** (involuntary moments) o Lip smacking/ chewing o Tongue protrusion (fly catching) o Choreiform hand movements (piano playing) o Pelvic thrusting • **Rx** o Reducing antipsychotic drugs/ stop (if possible) o Changing drug to Clozapine (least EPS causing)/ Atypical antipsychotics o **Drugs like** → Valbenazine (DOC) - $VMAT_2$ (vesicular monoamine transporter type 2) receptor inhibitor → Tetrabenazine
Neuroleptic malignant syndrome (NMS)	• Life threatening complication • **Symptoms** o **Common** → Fever → Rigidity → ↑ Creatinine phosphokinase (CPK) o **Other** → Tachycardia

→ Sweating
→ Leukocytosis
→ Altered consciousness
→ ↑ levels of liver enzymes

Mechanism of NMS

→ D_2 receptors are blocked in striatum
↓
↑ Muscle contraction and rigidity

→ D_2 receptors are blocked in hypothalamus
↓
Temperature dysregulation
↓
Fever

→ D_2 receptors are blocked in spinal nerves
↓
Autonomic disturbances
↓
Tachycardia

→ ↑ Muscle contraction and rigidity
↓
Muscle injury
↓
CPK
↓
↑ Myoglobinuria
↓
Renal failure

- **Rx**
  - Stop the drug which is causing NMS
  - Supportive care (hydration, vitals)
  - **Drugs like**
    - → Skeletal muscle relaxants - Dantrolene (DOC)
    - → Dopamine agonists - Bromocriptine, amantadine
  - To Remember: 2nd generation antipsychotics to be used while restarting the treatment for Schizophrenia.

- **Side effects of antipsychotics - Endocrinal side effects**
  - **Cause:** Blockage of D_2 receptors in the Tuberoinfundibular pathway

Important Information

- **Tuberoinfundibular pathway** 01:34:00
- **Path:** Hypothalamus → Anterior pituitary gland.
- $Dopamine \propto \frac{1}{Prolactine}$

Antipsychotics
↓
D_2 receptors are blocked
↓
↓ in Dopamine
↓
↑ Prolactine (Hyperprolactenemia)
↓
Male and female: ↓ Libido (sex drive) and sexual dysfunction
Females: Galactorrhea (milky discharge) and Amenorrhea

  - **Intensity:** Typical antipsychotics > Atypical antipsychotics 01:35:30

Typical/ 1st Generation Antipsychotics	
Phenothiazines (Azine at the end)	• **Low potency** o Chlorpromazine o Triflupromazine o Thioridazine o Mesoridazine • **High potency** o Fluphenazine o Trifluoperazine o Prochlorperazine
Thioxanthenes (Thix is present)	• Thiothixene • Flupenthixol • Zuclopenthixol
Butyrophenones (Peridol at the end) **High potency**	• Haloperidol • Droperidol • Benperidol
Miscellaneous	• Pimozide • Loxapine • Penfluridol • Molindone

- **High potency**
  - Blocks D_2 receptors
  - **Side effects:** EPS, Endocrinal side effects.
  - **Ex:** Haloperidol
- **Low potency**
  - Blocks other receptors
  - M_1 blockage - Anticholinergic side effects (dry mouth, urinary retention, constipation, blurring of vision)
  - α_1 blockage - Orthostatic hypotension
  - H_1 blockage - Sedation
  - **Ex:** Chlorpromazine and Thioridazine

Important Points about Individual Drugs

- **Chlorpromazine**
  - Anticholinergic side effects
  - Corneal and lenticular deposits, Photosensitivity
  - Cholestatic jaundice
  - Has maximum sedation.
- **Thioridazine**
  - Retinal pigmentation (irreversible)
  - ↑ QT_c interval → Cardiac arrhythmias
  - Least EPS
- **Penfluridol** - Longest acting antipsychotics
- **Loxapine** - Can be given in intranasal route also 01:40:48

Atypical/ 2nd Generation Antipsychotics

MOA	D_2 and $5HT_{2A}$ receptor antagonists
Side effects	• Less o EPS o Hyperprolactinemia • More (Metabolic side effects) o Weight gain o Diabetes o Hyperlipidemia o HTN o Cardiovascular diseases.
Drugs	• Olanzapine - Weight gain • Clozapine - ↓↓ EPS • Quetiapine • Zotepine • Asenapine - Can be given in intranasal route also • Amisulpride - Hyperprolactinemia • Sertindole • Lumateperone - Antagonist at $5HT_{2A}$, D_1, D_2, D_4 • Lurasidone • Risperidone - More EPS and Hyperprolactinemia • Paliperidone • Iloperidone • Ziprasidone - ↑ QT_c interval • Aripiprazole - Partial agonist at D_2 • Brexpiprazole - Partial agonist at D_2 and $5HT_{1A}$ • Cariprazine - Partial agonist at D_2, D_3 and $5HT_{1A}$ ($D_3 > D_2$) • Pimavanserin o $5HT_{2A}$ inverse agonist o Mnemonic: Pimavan ser in → Has ser and in - Serotonin inverse → Has a and a - 2A receptor o FDA approved drug for treatment of delusions and hallucinations associated with Parkinson's associated with psychosis. o ↓↓ EPS o ↑ QT_c interval

Important Points about Clozapine 01:45:45

- 1st atypical antipsychotic discovered.
- **Antagonism**
  - $D_4 > D_2$ (Least EPS)
  - $5HT_{2A}$, D_1, α
- Only antipsychotic with anti suicidal property (shown ↓ suicidal ideas in Shizophrenia patients)
- Used for treatment resistant Schizophrenia
  - Clozapine is not the 1st drug to be used in a Schizophrenia patient.
  - Used only when a patient doesn't respond to at least 2 antipsychotics.
- **Side effects**
  - Sedation (most common)
  - Weight gain (maximum weight gain of all antipsychotics)
  - Hypotension
  - Tachycardia
  - Sialorrhea - Hypersalivation
  - Nause
  - Vomiting
  - Constipation
- **To Remember**
  - Withdrawn from the market due to Side effects and also caused deaths in many.
  - Again reintroduced after John Kane et al. study - Showed that Clozapine can be used for treatment resistant Schizophrenia.
- **Serious side effects**
  - Mnemonic: SAM

- S - Seizures
  - → Dose dependant
  - → > 600 mg has more seizures
- A - Agranulocytosis
  - → Idiosyncratic
  - → ↓ WBC (Neutrophils)
  - → Main reason for deaths and withdrawn from the market
  - → Weekly monitoring of WBC and Neutrophil count for 1st 6 months is important
  - → Treatment to be stopped if,
    - WBC count - < 3000/mm^3
    - Absolute Neutrophil Count (ANC) - < 1500/mm^3
- M - Myocarditis
  - → Idiosyncratic
  - → Chest pain
  - → Dyspnea
  - → Abnormal ECG

- **Contraindications** - Clozapine not given
  - WBC count - < 3500/mm^3
  - Previous bone marrow disorder
  - H/o of Agranulocytosis during Clozapine treatment
  - Use of another bone marrow suppressant (carbamazepine)
- **Clinical scenario**
  - When a patient has Seizures, antiepileptic drugs like sodium valproate to be used.
  - Carbamazepine is to be avoided in this case, as it is a bone marrow suppressant, and can exaggerate Agranulocytosis.

ii. Long Acting Injectable (LAI) Antipsychotics 01:52:30

- **Other name:** DEPOT antipsychotics
- IM injection - Usually given once a month/ 2 weeks/ even longer.
- Can be used for patients who have poor compliance to medication (who isn't taking medication properly).
- **Two types**
  - 1st generation LAI antipsychotics
  - 2nd generation LAI antipsychotics

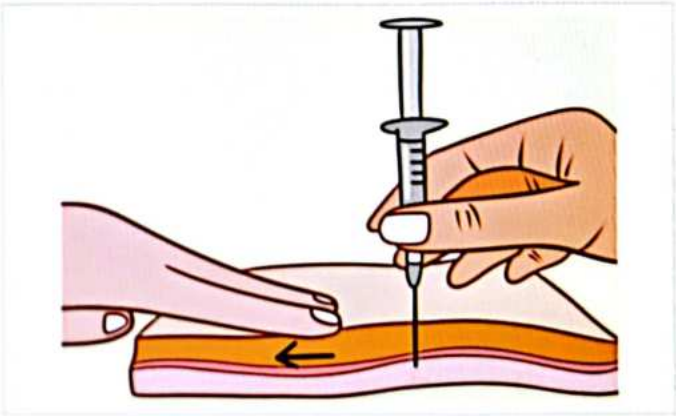
1st generation LAI antipsychotics	• **Oil base** - a test dose is given • **Drugs** o Mnemonic: Fi Zy P H o Flupenthixol o FLuphenazine o Zuclopenthixol o Pipotiazine o Haloperidol
2nd generation LAI antipsychotics	• **Aqueous base** - no test dose required • **Drugs** o Mnemonic: P A R O o Paliperidone o Aripiprazole o Risperidone o Olanzapine

Important Information

- All the drugs are esterified forms of parent drug, except Risperidone.
- Risperidone is coated in polymer, to produce microspheres.

How LAI Antipsychotics/ DEPOT Antipsychotics are Given? 01:55:00

Z Track Technique



- When DEPOT is given and pulled out, it forms a track.
- Track may lead to oozing of drugs to other tissues.
- So to prevent this we use Z Track Technique.
- Skin is pulled sidewards slightly and DEPOT is given.
- When pulled out, this will form a Z track, which prevents leakage.

ii. Psychological Therapy 01:56:11

- Psychological and social interventions which help in recovery.
- Mnemonic: FAST CaSH.
  - F - Family interventions
  - A - Assertive community treatment
  - S - Supported employment
  - T - Token economy
  - C - Cognitive behavioral therapy (CBT)
  - C - Cognitive remediation
  - S - Skills training
  - H - Housing first

Psychological Therapy	Points to Remember
Family interventions	• Reduce the negative expressed emotions like, o Criticism o Hostility o Over involvement • This has shown more relapses. • Family members are taught o Illness education o Coping skills o Emotional support
Assertive community treatment	Reaching patients within the community to deliver care.
Supported employment	Providing employment is beneficial.
Token economy	• For in patient facilities • Given for desired behaviors • Can redeem the token for material items/ privileges
Cognitive behavioral therapy (CBT)	• Also used in depression • Many cognitive and behavioral techniques are used to cope up with residual symptoms.
Cognitive remediation	• To improve cognitive functions like, o Attention o Memory o Executive functions
Skills training	• Social skill training is given • Improves social functioning
Housing first	Proving permanent housing while giving ongoing support.

Other Psychotic Disorders

1. Acute Psychotic Disorders 02:00:45

- Symptoms are similar to schizophrenia.
  - Delusions
  - Hallucinations
  - Disorganized symptoms
- Patient doesn't meet the duration criteria (as discussed earlier according to ICD 11 and DSM-5).
- Abrupt Onset of symptoms.
- Often resolved completely.
- May be preceded by stressors
  - Stressful life event
  - Fever

Differential Diagnosis

- The symptoms of fever, sudden Onset, delusions and hallucinations and Abnormal behavior - 2 diagnosis.
  - Acute psychosis
  - Delirium
- Both can be differentiated as:
  - Acute psychosis - no impairment of consciousness
  - Delirium - impairment of consciousness present.
- **According to ICD11**
  - Symptoms < 1 month, it is acute transient Psychotic disorder.
- **According to DSM-5**
  - **< 1 month** - brief psychotic disorder
  - **> 1 month, < 6 months** - schizophreniform disorder.
- **Treatment**
  - Antipsychotics
  - **Short term** - Benzodiazepines.

2. Schizoaffective Disorder 02:04:40

- Presence of symptoms of Schizophrenia and affective (mood) disorders.
- Both are present for the majority of time during the illness.

Differentiating Schizophrenia from Schizoaffective Disorders

- If a patient has Schizophrenia symptoms for 8 months and mood symptoms for 2 weeks - Schizophrenia.
- If a patient has schizophrenia symptoms for 8 months and most of the time also has mood symptoms - Schizoaffective disorder.
- To differentiate mood disorder with Psychotic symptoms:
  - At least a 2 week period of delusions or hallucinations should be there without mood symptoms.
- **2 subtypes**
  - **Bipolar type:** Manic symptoms
  - **Depressive type:** Depressive symptoms.
- **Treatment**
  - **Bipolar type:** Mood stabilizer + Antipsychotic.
  - **Depressive type:** Antidepressant + Antipsychotic.

3. Delusional Disorder 02:08:16

- 1 or more delusions are present which are persistence - usually related.
- Hallucinations are usually absent.
  - If present they are not prominent and are of short duration.
- Functioning is not markedly impaired.
- Function is normal in areas unaffected by delusions.

Differentiating from Schizophrenia and Delusional Disorder

- Functioning of all areas of life is affected - Schizophrenia.
- Functioning of only a particular area of life is affected - Delusional disorder.
- **Duration of symptoms**
  - **>1 month** - DSM-5.
  - **>3 months** - ICD 11.
- **Types:**
  - **Persecutory type** - Delusion of persecution.
  - **Erotomania type** - Delusion of love.
  - **Jealous type** - Delusion of infidelity.
  - **Grandiose type** - Delusion of grandiosity.
  - **Somatic type** - Somatic delusions.
    - → Delusion of parasitosis
    - → Delusion of dysmorphophobia
    - → Delusion of halitosis.
  - **Unspecified type** - Delusions of misidentification.
    - → Capgras syndrome
    - → Fregoli syndrome
    - → Syndrome of metamorphosis
    - → Syndrome of Subjective doubles.
- **Risk factors**
  - Advanced age
  - Sensory impairment or isolation
  - Family history
  - Social isolation
  - Personality features like unusual interpersonal sensitivity.
- **Treatment**
  - May be resistant to treatment.
  - Antipsychotics is the drug of choice.

4. Shared Psychotic Disorder/ Induced Delusional Disorder

02:14:29

- Transfer of delusion from one person (primary case) to another (secondary case).
- **Primary case**
  - Has delusion
  - Often chronically ill
  - Influential member of close relation relationship with the secondary case.
- **Secondary case** - Who develops the similar delusions.
- **Ex:** Secondary case's sister (Primary case) has a delusion of persecution, secondary case will also develop the same.
- If more than one person is involved,
  - 2 people involved - folie à deux
  - 3 people involved - folie à trois
  - 4 people involved - folie à quatre
  - And so on....
- **Treatment**
  - Antipsychotics are used.
  - Primary and secondary cases are to be separated.

5. Attenuated Psychosis Syndrome

02:16:10

- Included in DSM-5 under the conditions required further study.
- **Proposed criteria**
  - At least 1 of the 3 symptoms (delusions, hallucinations, disorganized speech) is present in attenuated form (mild).
  - Patients should be intact with the reality testing.
  - **Duration:** At least once/week for the past month.
  - Begun or worsened in the past year.
  - Should be causing sufficient distressing and disability.

MCQs

02:18:00

Q. All of the following are good prognostic factor in schizophrenia except

A. Presence of mood symptoms
B. Prominent positive symptoms
C. Insidious onset
D. Married

Answer: Insidious onset, as this is a poor prognostic factor.

Q. A 15 year old girl failed in her exams. For three days she is complaining that teachers are abusing her and she complains of hearing voices when no one is around. She says that the teachers have conspired against her and want to expel her from school. Which is the most likely diagnosis?

A. Delirium
B. Acute psychosis
C. Mania
D. Delusional disorder

Explanation

- Teachers have conspired against her - Delusion of persecution
- Hearing voices when no one is around - Auditory hallucination
- 3 days - Duration
- Failed in her exams - Stressor
- All are satisfying Schizophrenia, but duration is not filled.
- Delirium - There is impairment of consciousness
- Mania - No symptoms are in the question
- Delusional disorder - Only Delusions to be present
- So, it is Acute psychosis.

Q. A 35 year old female is brought to the emergency. She is suffering from schizophrenia and is on haloperidol. She presents with symptoms of fever, sweating, disorientation, and rigidity for one day. Her Blood pressure is increased and on investigation CPK levels are increased and there is leukocytosis .Witch of the following is the likely condition?

A. Acute dystonia
B. Neuroleptic malignant syndrome
C. Viral encephalitis
D. Tardive dyskinesia

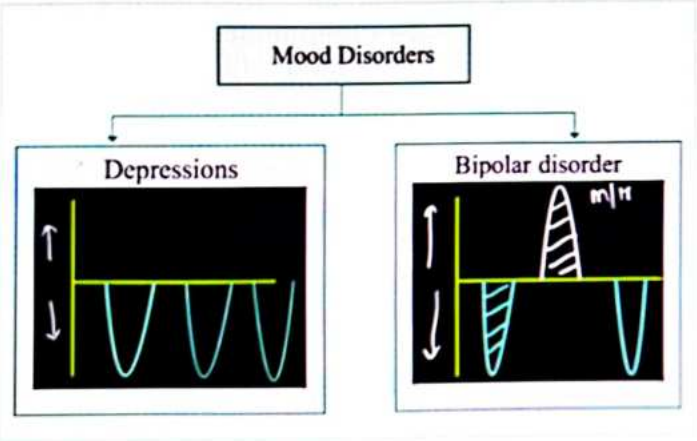
Q. A 34 year old male patient reports having a tickling sensation in his chest, which he says is caused by chemicals sprayed by his office colleagues on him. Which of the following symptoms is described here?
A. Automatic obedience
B. Visual hallucination
C. Delusion of persecution
D. Somatic passivity

Explanation
- Patient has some bodily symptoms because of some external agencies.
- In Automatic obedience patients are cooperative.
- Patient not only have delusion, but also somatic symptoms, thus it is not Delusion of persecution
- So the answer is somatic passivity.

3 MOOD DISORDERS

Mood disorders

- Mood disorders are also called affective disorders, both mood and affect are related to feelings and emotions that's why the terms are sometimes interchangeable.
- In mood disorders, there is predominantly abnormality of the mood.



- **Depression:** In depression, the mood is sad
  - This is an episodic illness.
  - In untreated depression, ultimately the person after some time will become normal but an episode could last up to 6–13 months. Treatments reduce the duration of the episodes.

- **Bipolar disorder:** In bipolar disorder, the person may be in a low mood but sometimes the mood is also happy.
  - Show the patient can have manic or hypomanic symptoms. The mood is generally elated and sometimes it can be irritable.
  - Untreated manic episode can last up to 3 months.
- In between each of these normal states, there is a gap when the person is in a normal mood. Episodic illnesses which mean they occur in episodes for a while and then the episode subsides.

Depression 00:04:12

- Depression is also known as Major depressive disorder (DSM 5).
- Sometimes it is also called a Depressive disorder.
- In depression there is only depressive episodes, no manic or hypomanic or mixed episode occurs.

Epidemiology

Lifetime prevalence - 10.8% (Earlier studies 12%)

- Depression is the most common mental disorder in India as per the National mental health study 2015-16 (Excluding tobacco disorder).
- The most common mental disorder in the world is an anxiety disorder (specifically phobia) and the second most common is depression.
- Depression is more common in females as compared to males the ratio is 2:1.
- The mean age of depression is 40 years.
- In children, male prevalence is equal to that of females.
- Depression is more common in people who are divorced or separated.
- Maximum DALY (disability-adjusted life years) is associated with depression.
- There is no proven correlation between depression with socioeconomic status. Although many studies show that it is more common in rural areas than urban areas.

Etiology

Biological Factors

- **Neurotransmitter:** Monoamine hypothesis states that serotonin, Norepinephrine, and dopamine are implicated in development of depression, and their levels reduce in patients with depression.
  - Other neurotransmitters such as acetylcholine, and cholinergic agonist can exacerbate the symptoms in depression.
  - GABA: Decreased levels in plasma, CSF, and brain in depression.

- **Endocrinal disturbances**
  - Elevated HPA (Hypothalamic–pituitary–adrenal) axis activity which is seen because there is hypercortisolemia. An elevated axis can be demonstrated by the dexamethasone separation test. Dexamethasone is a potent glucocorticoid and in the next morning the blood sample is collected. Normally, CRH, ACTH and corticoid surge are decreased. But in depression, the corticoid surge does not get suppressed, this is because of an increase in the HPA axis.

  - Hypothyroidism: It is associated with depression. At times thyroid hormone is used in the treatment of depression as well as an augmenting agent.

- Brain-derived neurotrophic factor (BDNF): It is used in the maintenance of neurons. It is also implicated reduced in depression. When the patients are given antidepressants such as Selective serotonin reuptake inhibitors (SSRIs), BNDF level rises.

- **Neuroanatomical Factors:** There are certain neuro-anatomical areas that are implicated to be affected in depression. Key areas are the amygdala, hippocampus, prefrontal cortex and anterior cingulate cortex.
  - Structural abnormality: Hyperintensities in the subcortical region which means there is certain degeneration such as in the hippocampus, amygdala and periventricular region.
  - Functional abnormalities: In the prefrontal cortex there is a decrease in brain metabolism. And in certain limbic regions, there is an increase in metabolism.

Genetic Factors

- CAMP response element binding protein (CREBI) which is on chromosome 2 is shown to be strongly associated with depression.
- Serotonin transporter gene (SLC6A4) This gene, in the promoter region has two alleles:
  - Short form: A person with this gene will have an increased risk of depression in case of a negative life event.
  - Long-form: A person with a long-form gene shows lesser symptoms of depression and responds better to SSRI antidepressants.
  - Genetics explain around 75% of etiology of Bipolar disorder and 37% of etiology of Depression.
  - If one parent has mood disorder, the child has a risk of 10-25% chances of developing it.
  - If both parents have mood disorders, there is a 50% chance. The risk number increases proportionally to the number of family members having mood disorder. In case of bipolar disorders, the risk becomes higher.

Psychological theories

- Cognitive theory: Cognitive means thinking. It was given by Aaron beck. Patients who have depression develop certain cognitive distortions which are basically negative patterns or inaccurate ways of thinking. They have automatic negative thoughts.
  - Arbitrary Inferences: Drawing certain conclusions without adequate evidence.
  - Specific Abstraction: Focus on a single detail, ignoring other, more important aspects of an experience.
  - Overgeneralization: Forming a conclusion on basis of a single event. For example, the student does badly on one grand test, so he will start thinking "I am going to fail in all exams".
  - Magnification and Minimization: Error in the evaluation of an event. In the case of magnification, the person focuses on the worst possible outcome, for example, the person got 2 marks less in viva, so the person starts thinking "this is my worst result ever". In case of minimization, undervalue or minimise the importance of the event. For example, after being told to study otherwise you may fail final exams, the person thinks "I don't know why they all are worried, it's just an exam".
  - Personalization: Self-reference external events, no basis of such connection.
  - Absolutist or dichotomous thinking: All or nothing thinking seeing things as Black or White. For example you don't pick up my phone so you are worse than an enemy, you helped me in my notes so you are an angel.
  - The cognitive triad of depression:
    - → Negative views about self: Worthlessness
    - → Negative views about the environment: Helplessness
    - → Negative views about the future: Hopelessness
- Learned helplessness theory: This theory connects depression to the experience of uncontrollable adverse events. People with depression start to believe they have no sense of control and lose the motivation to act.

Environmental Factors

Life event

- Most often associated with the development of depression is losing a parent before age of 11 years.
- Most often associated with the onset of a depression episode is loss of spouse.
- Unemployment.

Symptoms of Depression (SIGE CAPS)

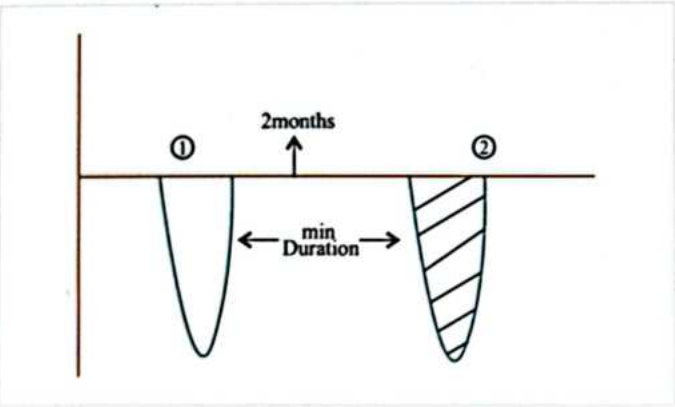
- Sad/Depressed mood.
- Decreased interest/Anhedonia.
- Feeling of guilt/worthlessness.
- Decrease in energy/easy fatigability.
- Decrease in concentration (is also known as pseudodementia as the patient will experience forgetfulness).
- Appetite: Some people with depression experience both appetite and weight loss. Whereas some people experience an increase in appetite and weight gain. The significant weight change is more than 5% in a month.
- Psychomotor retardation/agitation.
- Suicidal thoughts or acts.
- Sleeping disturbances
  - A person with depression may experience insomnia specifically early morning insomnia which means waking at least 2 hours before the usual time.
  - Reduced REM latency.
  - Hypersomnia.

Diagnosis

- According to DSM 5, 5 or more symptoms (atleast 1 symptom from first two i.e. either sad or anhedonia must be there) for a duration of 2 weeks.

Recurrent Depressive Disorder

- When there are 2 or more episodes of depression. The minimum duration of normal period between 2 episodes is 2 months.



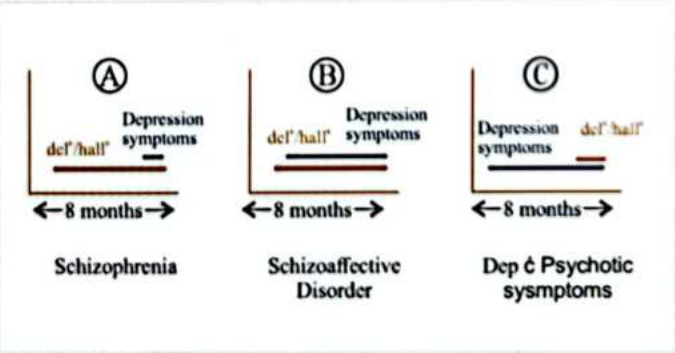
Specifiers

Depression along with

1. Psychotic features

The patient will have some psychotic symptoms along with depression.

- Mood congruent: The content of delusion or hallucination is consistent with the theme of depression.
- Mood incongruent: The content of delusion or hallucination is inconsistent with the theme of depression.



- Treatment: Anti-depressant with antipsychotics.

ICD 10: Specifier can be used only with severe depression.

ICD 11: Specifier can be used with moderate and severe depression.

2. Melancholic features

Depression with melancholic features is a very severe kind of depression. In the patient following features are witnessed

- Loss of pleasure to all activities/lack of reactivity to all the pleasurable stimuli.
- A distinct quality of depressed mood - profound despondency/despair/empty mode.
- Early morning awakening.
- Anorexia/weight loss.
- Mood is worse in the morning.
- Excessive guilt.
- Psychomotor disturbance.
- Higher risk of suicide.

3. Atypical Features

Depression with atypical features that are uncommon features in depression.

- Mood reactivity: Mood brightens in response to a positive event.
- Weight gain/increase in appetite.
- Interpersonal rejection sensitivity: The patient is sensitive to events and feels hurt/rejected by others.
- Leaden paralysis where the limbs feel heavy.
- Hypersomnia (increase in sleep).

Treatment: they respond better to SSRIs, MAOI, and bupropion. They do not respond well to TCAs.

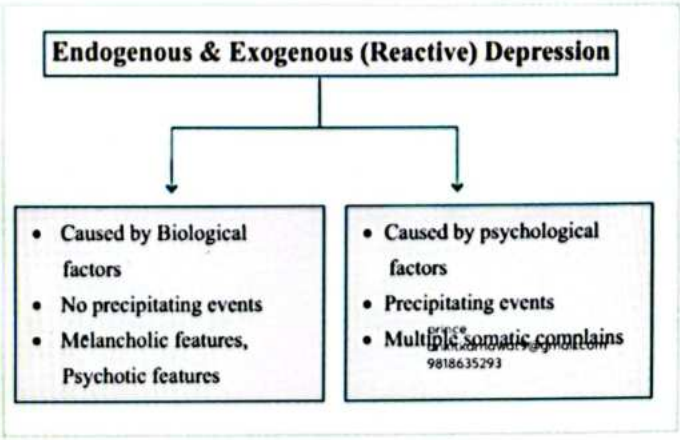
4. Catatonia

- Depression with catatonic symptoms. These symptoms are more common in mood disorders than in schizophrenia.
- Treatment
  - Lorazepam with antidepressant
  - Sometimes ECT is also given.

5. Postpartum Onset

- Also known as Postpartum depression. A female having depressive symptoms during pregnancy or within 4 weeks of delivery is called postpartum depression.
- DSM-5: During pregnancy or after delivery. Also called peripartum onset.

Classification



Suicide

- In depression, about 10 to 15% of people commit suicide. The most common psychiatric disorder associated with suicide is depression.

The Physical signs of Depression

- Veraguth's fold: It is a triangular fold in the nasal corner of the upper eyelid.
- Changes in the tone of the corrugator and zygomatic facial muscles.

- Omega sign: Omega-shaped fold on the forehead above the roof of the nose. it occurs due to the excessive use of corrugator muscle.

Poor Prognostic Factors of Depression

- Comorbid dysthymic disorder with major depressive disorder. Dysthymia is a milder form of depression symptom which occurs continuously for 2 years.
- Substance use disorder as a sign of poor prognostic.
- Anxiety symptoms.
- If there are recurring episodes of depression.
- Very common in males.

Treatment of Depression

There are two types of depression treatments

- Pharmacotherapy
- Psychotherapy

Pharmacotherapy

- Features
  - In pharmacotherapy the main treatment is anti-depressants.
  - It takes 3-4 Weeks for showing action.
  - Chosen according to the side effect profile.
- Duration
  - Maintain treatment for at least 6 months or the length of the previous episode whichever is greater.
  - Maintenance or prophylaxis: It is given in the case where the person has three or more episodes of depression or a patient with chronic depression. It is chronic depression if it lasts for more than 2 years.
  - Drugs of Choice: Selective serotonin reuptake inhibitor (SSRI)
- Selective serotonin reuptake inhibitor (SSRI)
  - Sertraline
  - Fluoxetine
  - Paroxetine
  - Citalopram
  - Escitalopram
  - Vilazodone
  - Fluvoxamine
  - Escitalopram: Most serotonin selective drug.
  - Vilazodone: SPARI: serotonin partial agonist & reuptake inhibitor. It is a SSRI but also 5HT1A partial agonist.
  - Fluvoxamine: used for OCD.
- Side Effects of SSRIs
  - GI: Nausea is the most common side effect, diarrhoea, anorexia, dry mouth, weight gain, and constipation especially with paroxetine as it has anticholinergic side effects.
  - CNS: Anxiety, insomnia, sedition, vivid dreams, sweating, emotional blunting, seizures, and EPS.
  - Sexual dysfunction: It is the most common side effect with long-term treatment. A decrease in libido, delayed ejaculation, and inhibited orgasm.
  - Haematological: Functional impairment of platelet aggregation (higher risk of GT bleeding with NSAIDs).
  - Miscellaneous: Hyponatremia, allergic rashes, and hyperprolactinemia.
- Serotonin Syndrome
  - Concurrent use of SSRI with MAOI inhibitors there is an increasing surge of serotonin. L-Tryptophan increased the synthesis of serotonin. Lithium has some serotonin agonist activity as well. Concurrent use of these drugs can increase the serotonin concentration to a toxic level.

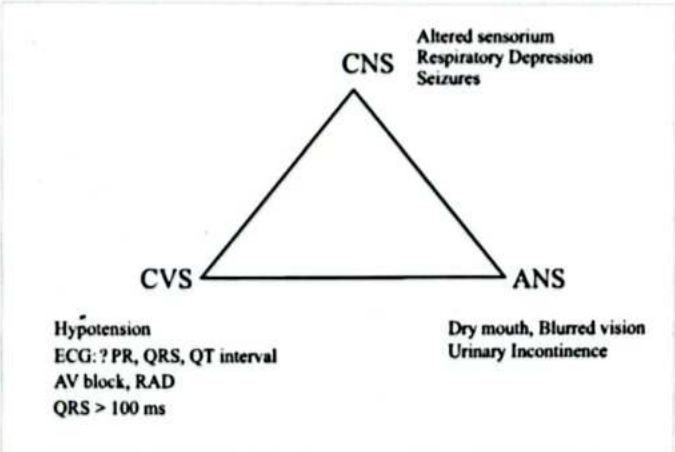
- Side effects of serotonin syndrome are
  - → Diarrhoea, and restlessness.
  - → Extreme agitation, hyperreflexia, autonomic instability full
  - → Myoclonus, seizures, hyperthermia and rigidity.
  - → Delirium, coma, CV collapse and death.
- Treatment: Supportive care, cooling, cyproheptadine ($5HT_2$ antagonist).

- Discontinuation Syndrome
  - Discontinuation syndrome occurs due to abrupt discontinuation of the drug due to withdrawal symptoms. It is seen with short-acting drugs like venlafaxine, fluvoxamine, and paroxetine.
  - Not seen with long-acting drugs such as fluoxetine.
  - Symptoms
    - → Flu-like symptoms (lethargy, weakness, and headache).
    - → Insomnia
    - → Nausea
    - → Imbalance such as dizziness.
    - → Sensory disturbance paraesthesia.
    - → Hyperarousal (rebound anxiety, irritability).
  - **Vortioxetine**
    - → **5 HT reuptake Inhibitor**
    - → Agonist — $5HT_{1A}$
    - → Partial Agonist — $5HT_{1B}$
    - → Antagonist — $5HT_{1D}$, $5HT_3$, $5HT_7$

- **SSRI and Pregnancy**
  - Not major teratogen. Paroxetine should be avoided in pregnancy as it can result in cardiovascular defects.
  - SSRIs and SNRIs are given especially late in the pregnancy and are known to cause persistent pulmonary hypertension in the newborn.
  - Neurodevelopmental/Motor Disorders
  - ADHD, Autism SD
  - Low APGAR score
  - ↓ Gestational Age/↓ Birth weight, GDM, Pre-eclampsia
- **Serotonin Norepinephrine Reputake Inhibitors (SNRI)**
  - These are also known as dual reuptake inhibitors. They may have better efficiency in melancholic depression.
  - Some of the known drugs are:
    - → Venlafaxine
    - → Desvenlafaxine
    - → Levomilnacipran
    - → Duloxentine
    - → Milnacipran
  - The side effects of SNRIs are similar to SSRIs.
- **TCAs: Tricyclic and Tetracyclic Antidepressants.**
  - TCA blocks the transporters of serotonin and norepinephrine.
  - Due to the blockage, they have certain side effects as well such as antagonism at muscarinic.

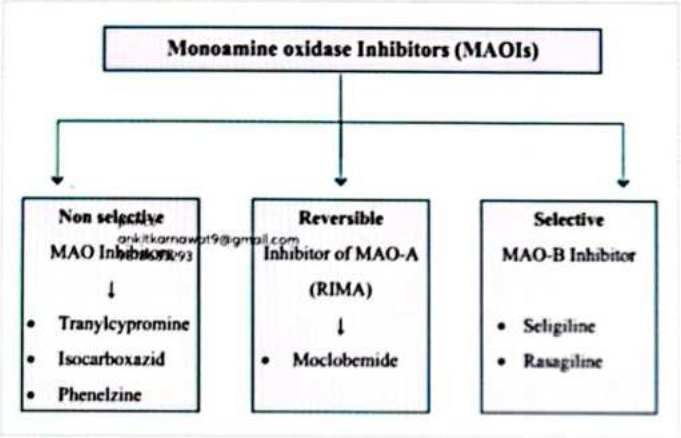
Tricyclic	Tetracyclic
• Clomipramine • Amitriptyline • Trimipramine	• Maprotiline • Amoxapine • Mianserin
• Doxepin • Imipramine • Dotheipin	
• Desipramine • Nortriptyline • Protriptyline	

  - Clomipramine is the most serotonin-selective drug. It is used in the treatment of OCD.
  - Imipramine can be used for nocturnal enuresis. The drug of choice for nocturnal enuresis is desmopressin. The treatment of choice in nocturnal enuresis is the behavioural technique of bell and pad alarm.
  - Desipramine is the most norepinephrine selective.
  - Bicycling antidepressant is viloxazine.
  - Tetracyclic antidepressant, amoxapine, which also blocks D_2 receptors.
  - Side effects of TCAs
    - → Anticholinergic side effects: Dry mouth, delirium, constipation, blurred vision and urinary retention.
    - → Should be avoided in narrow-angle glaucoma and prostate hypertrophy.
    - → Cardiac side effects: Tachycardia, flattened T waves, prolonged QT intervals, ST segment depression and arrhythmias.
    - → Autonomic side effects: Postural hypertension caused due to Alpha1 blockage.
    - → Neurological Side effects: Tremors, Seizures. In amoxapine: EPS, Galactorrhoea and gynecomastia.
    - → Others: Sedation, weight gain.
  - TCA (Toxicity)

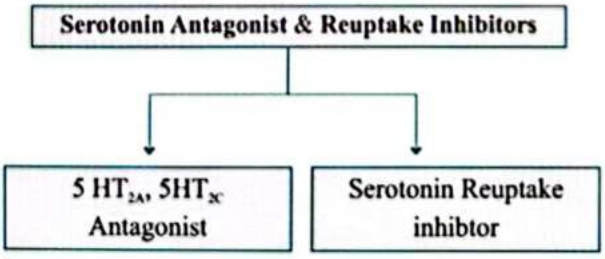


→ Metabolic Acidosis (due to tissue Hypoxia, CV Ab(n), seizure)
→ **Treatment:** I.V. sodium bicarbonate (Serum alkalization)

- **Monoamine Oxidase Inhibitors (MAOIs)**
  - 1st class of approved antidepressants.
  - Inhibits metabolism of monoamines (5HT, NE, DA).
  - MAO Enzymes:
    → MAO-A metabolism 5HT, NE, DA.
    → MAO-B metabolism of DA.



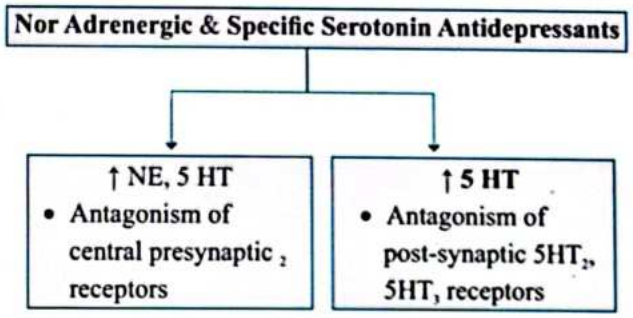
  - Cheese reaction/tyramine induces hypertensive crisis:
    → Cheese, bear, fish, and red wine- contains tyramine. Tyramine is sympathomimetic so it is metabolised in GI traits.
    → MAOIs inhibit the tyramine metabolism which enters the circulation and causes a hypertensive crisis.
    → Treatment of choice is phentolamine an alpha antagonist.
- **Atypical Antidepressants**
  - **SARI (Serotonin antagonist & reuptake inhibitors)**



→ **Trazodone**
- Sedation (Used in Rx of Insomnia)
- Priapism

→ **Nefazodone**
- Not used (Hepatotoxic)

  - **NaSSA (Nor adrenergic & specific serotonin antidepressants)**



→ **Mirtazapine**
→ **Side effect**
- Sedation (mc)
- Weight Gain
- Sexual S/E (low risk)

  - **NRDI (Norepinephrine dopamine reuptake inhibitors)**
    Bupropion has a low risk of sexual dysfunction, sedation, weight gain (do not act on 5HT).
    Side effects: Insomnia, tremor, nausea and dry mouth also seizure (especially at higher dosage).
    It is also used for smoking cessation.
  - **NSRE (Norepinephrine serotonin reuptake enhancer)** such as Tianeptine.
  - **Amineptine**
    DA reuptake inhibitor and enhancer. And also, a norepinephrine reuptake inhibitor.
- **Novel agents**
  - Esketamine: (S-Enantiomer of Ketamine)
  - MoA: N-methyl-D-Aspartate (NMDA) Antagonist (Glutamate Receptor)
  - Route: Nasal Spray
  - Approved (FDA in 2019): Treatment resistant Depression (Lack of response to 2 different antidepressant)
  - In conjunction with oral Antidepressant
  - Because of risk of Abuse, Self-administered under supervision of Doctor
  - Observe patient for atleast 2 hours (Sedation, Dissociation)
- **Augmenting Agents**
  These drugs in themselves don't have an anti-depressant effect but they augment the effect.
  - Lithium
  - Atypical antipsychotics: Quetiapine, aripiprazole, olanzapine, and risperidone.
  - Thyroid hormone.

Psychotherapy
Treatment using psychological behaviour methods.
- Cognitive behaviour therapy (CBT): It has the best evidence.
  - Correcting cognitive distortions.
  - Maladaptive behaviour.

- Interpersonal therapy: It focuses on the patient's current interpersonal problems such as relationship issues family issues etc.
- Other therapy: Such as family therapy, psychoanalytically oriented therapy, and behaviour therapy.

Treatment of Choice

- Combination of pharmacotherapy + psychotherapy has a higher response.
- Single therapy alone is sufficient for most of the part.
- In mild cases CBT is given whereas in moderate or severe cases drugs plus CBT is given.

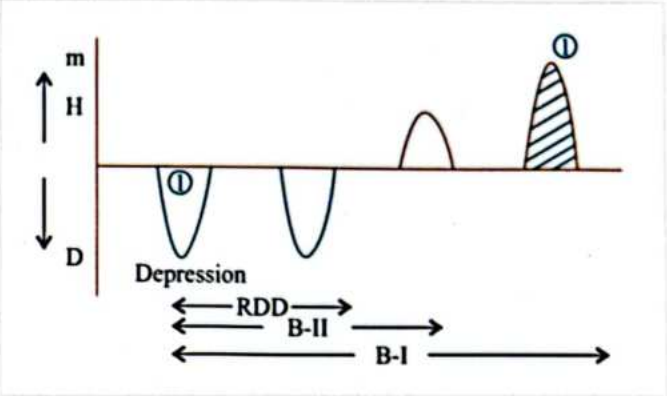
Other Somatic Modalities

- Electroconvulsive therapy: Indications for electroconvulsive therapy in depression are:
  - Depression + suicidal risk. If the patient is pregnant and has depression with suicidal thoughts, then the treatment of choice would be still electroconvulsive therapy.
  - Psychotic depression.
  - Severe depression with stupor.
  - Depression refractory to other modalities.
- Transcranial magnetic stimulation (TMS): Uses short pulses of magnetic energy to stimulate the nerve cells.
  - Repetitive transcranial magnetic stimulation produces focal 2-degree electrical stimulation of the cortical regions.
  - Advantages of TMS over ECT are non-convulsive, no anaesthesia required, safe side effects profile and no cognitive side effects.
  - FDA has approved this treatment in a patient who has failed to achieve satisfactory improvement from atleast one antidepressant.
  - Most common adverse effect of the treatment is scalp pain and discomfort.
- Vagal nerve stimulation: The left vagal nerve is stimulated by electrodes, via a pulse generator implanted on the chest of the patient.
- Deep brain stimulation: Implantation of lead into specific brain areas for chronic or intractable depression.
- Photootherapy: Light therapy for a seasonal affective disorder which means mood disorders that are affected by seasonal patterns. For instance, a person has suffered depression during winter and had depressive episodes in the past 2 years. Bright light in the range of 1500-10,000 Lux or greater with a lightbox is generated for 1 to 2 hours a day.
- Sleep deprivation: Significant but transient benefits. Positive results usually reverse by the next night of sleep.

Bipolar Disorder

01:30:56

- Episodes of Mania, depression, hypomania, and mixed episodes are seen.



- Bipolar I disorder where the patient has 1 episode of Mania + 1 episode of Depression.
- Bipolar II disorder where the patient has 1 episode of Hypomania + 1 episode of Depression.
- Even a single episode of mania is considered under bipolar disorder.
- ICD II includes only two types of bipolar disorder.

Bipolar I disorder	Bipolar II disorder
M = F	F > M
The mean age of onset is 30 years.	The mean age of onset is slightly higher.
More common in divorced/ single	

Epidemiology

Bipolar I disorder

- Manic episodes more common in males.
- Depressive episodes are more common in females (rapid cycling is more in females).
- More common in upper socioeconomic groups.

Etiology

- Neurotransmitters especially dopamine are increased in males.

Genetic Factors

- Chromosomes 18q, 22q, 21q } Strongest evidence

Mania: Symptom (ME DIG FAST)

- M – Mood Elation/ Irritable
- E – Energy ↑es
- D – Distractibility
- I – Impulsivity
  - Hyper Sexuality
  - Over Spending
  - Over Socialization
  - Over Religious
- G – Grandiosity/ Inflated self esteem
- F – Flight of ideas
- A – Activity level ↑
- S – Sleep (↓ need for sleep)
- T – Talkativeness

Diagnosis

- First 2 symptoms (mood elation + increased energy) along with 3 or more other symptoms for a duration of 1 week.
- Mania with psychotic symptoms
- Mania with delusion/hallucination:
  - Mood congruent
  - Mood incongruent

Hypomania

- Symptoms are similar to mania.
- Not severe enough to cause marked impairment of social and occupational functioning.
- Not have a flight of ideas and Psychotic symptoms.
- Duration of hypomania is 4 days.

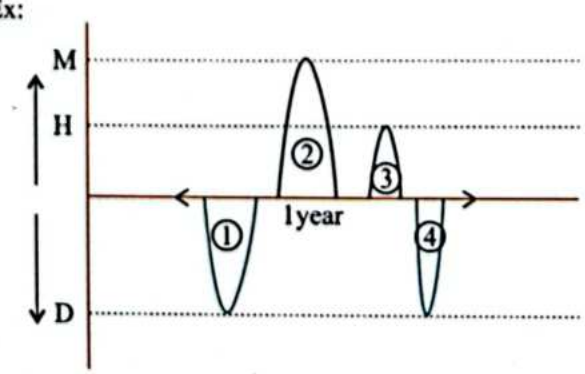
Mixed Episode

- When a patient experience both manic and depressive symptoms throughout the day.
- The duration is seven days.

Rapid Cycling

- Patient with bipolar disorder having four or more episodes of Mania hypomania or depression in 1 year.

Ex:



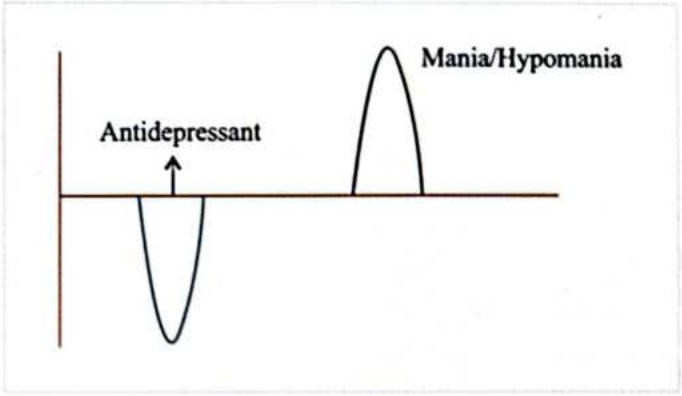
- Treatment: Valproate

Treatment of the Bipolar Disorder

Treatment for bipolar disorder takes place as per the phases:

- Acute phase: It includes Manic or hypomanic, depressive, and mixed episodes.
- Maintenance phase: Prophylaxis.

Acute Manic or Hypomanic Episode



- When the patient comes in elated mode, hyperactivity, talkativeness, etc. The first step will be to stop the antidepressant.
- Medications that can be used:

First line drugs

Antipsychotics	Lithium	Valproate
• Olanzapine • Risperidone • Quetiapine • Aripiprazole • Cariprazine		

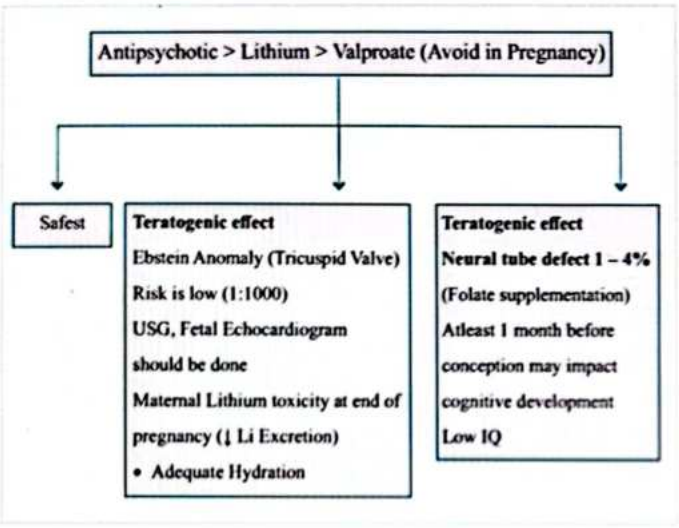
- **Mood stabilizers**
  - Lithium: It is a prototypical mood stabilizer but the onset of the drug action takes place within 1-3 weeks.
  - Valproate: Surpassed Lithium in acute mania as it has a rapid onset of actions and better tolerability. It should not be given in hepatic disease. It can also cause PCOD in females which is why it can be given but not recommended for females with mania.
  - Carbamazepine: This drug is not used as the first line of drugs.
  - Lamotrigine: It is used in bipolar depression.
- Benzodiazepines: They can be used in the initial stages for initiating and the calming effect in the patient.

Correlates of Lithium responsiveness

- Euphoric/elated mania (In dysphoric mania, valproate responds better).
- Absence of rapid cycling (Valproate responds to rapid cycling).

- Absence of comorbidities (valproate responds well).
- If there are maximum of 3 or fewer episodes.
- MDI sequence (Maia - depression - interval)
- Family history of bipolar illness and especially lithium response.

Pregnancy



Mood stabalizers in pregnancy

Carbamazepine

- Neural tube defect (Risk lower than valproate) (Folate)
  - Cleft palate, finger nail hypoplasia
- Vit K should be given to mother and infant after delivery, to prevent hemorrhage disease

Lamotrigine

- Safer than valproate, CBZ
  If the symptoms are severe, then a combination of lithium + anti-psychotic can be given or valproate + anti-psychotic can be given.

Acute Depression (Bipolar Depression)

- In acute depression/bipolar depression, do not use anti-depressants alone.
- If only anti-depressants are given, there is a risk of switch (to mania).
- Some of the drugs which can be used are:
  - Lithium, Lamotrigine
  - Quetiapine, Lurasidone
  - Olanzapine + Fluoxetine
  - Anti-depressant + Mood stabalizer (Li, Val, Lamotrigine)

Maintenance (Prophylaxis)

- 2 or more episodes or after a single episode of mania (associated with significant risk).
- The treatment of choice is lithium and valproate.
- Minimum duration is 2 years.

Other Mood Disorder

02:02:00

Dysthymia

- Presence of mild depressive symptoms which are not enough to diagnose depressive episodes.
- Minimum duration is of 2 years and in children, it is 1 year.
- Functional impairment is not severe.
- In DSM5, there is a new term introduced that is a persistent depressive disorder which includes chronic depression which means depression over 2 years and dysthymic disorder.
- Treatment is antidepressant CBT.
- After dysthymia a person develops depression, it is called double depression.

Cyclothymia

- Cyclothymia is a milder form of bipolar disorder in which Manic and depressive symptoms occur, but are not severe enough to make a diagnosis of Mania/hypomania or depressive episodes.
- Functional impairment is not severe.
- The duration is 2 years in adult and in children it is one year.
- Treatment antipsychotics, and mood stabilizers.

Pre Menstural-Dysphoric Disorder (Pmdd)

- PMDD is a new diagnosis in DSM 5.
- In ICD 11, it is included in diseases of genitourinary system.
- Symptoms:
  - Onset: 1 week before menses
  - Starts to improve after onset of menses and minimal to absent in weak post menses.
- Physical symptoms: breast tenderness and joint pain.
- Mood symptoms: depressed mode, irritability.
- Behaviour symptoms: insomnia, changes in eating pattern, oedema.
- These symptoms should be present for at least 2 symptomatic cycles.
- Treatment includes SSRIs (e.g., fluoxetine, and benzodiazepines). In Symptomatic (e.g., Pain - NSAIDs).

PMDD V/s Premenstrual Syndrome

- In pre menstrual syndrome, the symptoms are seen 5 days before the Menstruation starts. Physical symptoms such as breast tenderness and headache can be seen. Mood symptoms include irritability, sadness, and anxiety.

Psychiatry Aspects of Pregnancy

- Postpartum blues which occurs in 30 to 75% of women after childbirth. Onset can be seen after 3 to 5 days after childbirth.
- Symptoms: Tanzania depressive symptoms like sadness, mood lability, tearfulness, irritability and sleep disturbances.
- Duration: It may last for a few days to weeks.

- Anhedonia
- Suicidal thoughts
- Thoughts of harming Baby

} Not seen

- Guilt → Absent/ mild

- History of Mood disorder
- Family history of Mood disorder

} No association

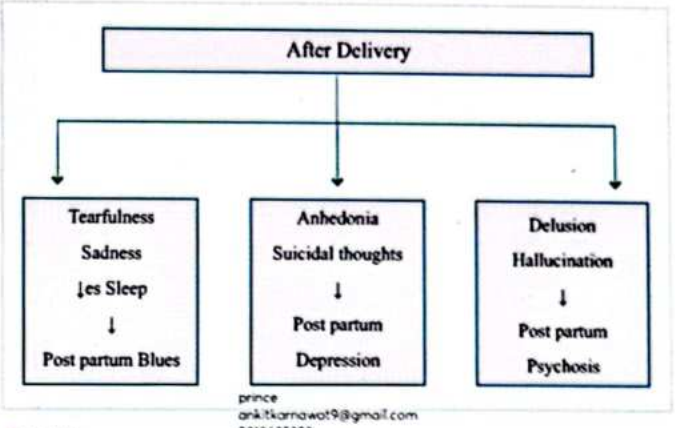
- No professional treatment required.
- Support is required to the mother.
- If symptoms last for more than two weeks evaluate for Postpartum depression.

Postpartum Depression

- This is seen in 10 to 15% of women after childbirth.
- Onset within 3 months of delivery.
- This increases the risk of depression in the future.
- Symptoms include depressed mood, insomnia and weight changes.
- Tearfulness, mood liability.
- Anhedonia guilt is most often.
- Suicidal thoughts and thoughts of harming the baby occur sometimes.
- History of mood disorder or family history of mood disorder is strongly associated with the Postpartum depression occurring in mothers.
- Treatment includes pharmacotherapy and psychotherapy.
  - **Brexanolone:** New drug
    - → In 2019, FDA approved it for Postpartum depression.
    - → IV infusion is given continuously for 60 hours.
    - → It is identical to endogenous allopregnanolone.
    - → Positive allosteric modulator of GABA-A receptors.
    - → It has Rapid effect.
    - → Its adverse effects include sleeplessness, dry mouth, loss of consciousness and flushing.

Postpartum Psychosis

- 1-2/1000 per childbirth.
- Onset within 2 to 3 weeks of delivery.
- Initial symptoms include insomnia, tear fullness, mood lability and fatigue.
- This can also lead to delusion or even hallucination as well.
- 50 to 60% of these episodes occur in the first childbirth.
- In 50% of the cases there is a family history of mood disorder.
- Happens in 50% of Deliveries associated with non-psychiatric prenatal complications.
- There is a 50% risk of another episode of Postpartum psychosis.
- Psychiatric emergency treatment includes anti-psychotic + lithium in a combination of anti-depression.



Suicide

- The rate of suicide is very high in India. 12 per 1 lakh of the population is the ratio as per 2021 NCRB.
- Most common method seen is Hanging (followed by poisoning).
- Causes can be related to psychiatric disorders with a higher risk of suicide:
  - Depressive disorders.
  - Schizophrenia.
  - Bipolar disorder.
  - Alcohol use disorder.
  - Personality disorder such as borderline personality disorder and anti-social personality disorder.
- Low CSF level of the serotonin metabolite 5-hydroxy indole acetic acid (5-HIAA) is associated with higher suicide risk.
- The most important risk factor are
  - Previous suicide attempts
  - Hopelessness
- Other risk factors include:
  - Males aged more than 45 years have higher changes.
  - Signals for suicide intent like suicide note, starts meeting all the relatives suddenly, etc.
  - Divorced/separated/single
  - Unemployment
  - Chronic illness
  - Delusion/hallucination
  - Substance abuse
  - Poor social support
  - Sexual abuse
  - Family history of suicide

Paradoxical Suicide

- In initial stages of treatment or recovery the patient may try suicide attempt.
- It is because of gain of energy.

Copycat Suicide

- Mimicry of another suicide method which the person attempting suicide know either by local knowledge or media.
- This type of suicide is very common in adolescence.

Para Suicide

- Self-injurious behaviour.
- There is no intent kill themselves.

Features of Depressive Episode, Predictive of Bipolar Disorder

- Early age of onset psychotic depression for instance before the age of 25 years.
- Postpartum depression specially with psychotic symptoms.
- Recurrent depression with more than 5 episodes.
- Atypical seasonal depression.
- Short duration episodes which last less than three months.
- Bipolar family history.

LITHIUM

02:24:45

- Lithium is a mood stabilizer.
- John FJ code, An Australian Psychiatrist established effectiveness of lithium for mania & prophylaxis of bipolar disorder
- Lithium is a monovalent Ion. It is completely absorbed after oral administration – lithium does not bind to plasma protein, is not metabolized excreted through the kidney
- Plasma t1/2 is initially 1-3 days and is 2-4 days after administration for more than 1 year
- Equilibrium is reached after 5-7 days of regular intake.

Indications

02:25:55

- **Maniac episodes**
  - Lithium is effective to control acute maniac due to slow onset of action over 1-3 weeks, a benzodiazepines, antipsychotics or valproate is usually added for few weeks.
  - It is also used as a prophylaxis to prevent further episodes.
- **Bipolar Depression**
  - Effective in treatment of bipolar depression and its prophylaxis, however is more effective in prophylaxis for mania than for depression
- **Maintenance therapy**
  - Maintenance treatment with lithium decreases the frequency, severity and duration of mania and depressive episode in person with bipolar disorder
- Lithium has anti suicidal effect and reduces the incidence of suicide in bipolar disorder.
- Lithium is used as adjuvant to antidepressant in major depressive disorder as well in schizoaffective disorder (with anti-psychotic).

  Lithium is used in various other conditions such as aggression, OCD, headache (cluster, migraine), movement disorder, epilepsy neutropenia, genital herpes, seborrheic dermatitis, ulcerative colitis and gout.

Side effect of Lithium

02:28:14

- **Neurological**
  - Postural tremors (8-10 hours). Treatment: antagonist (propranolol)
  - Lack of spontaneity, memory difficulty, seizures.
  - Rarely, peripheral neuropathy, benign intracranial hypertension
- **Endocrinal**
  - Hypothyroidism (↑ risk in women, rapid cycling)]
  - Hyperthyroidism
  - Hyperparathyroidism
- **Renal**
  - Polyuria secondary polydipsia (diabetes incipidus)]
  - Treatment:
    → Fluid replacement
    → Thiazide or K^+ sparring diuretic (decrease lithium clearance, hence lithium should behalved)
  - Rarely can cause non-specific interstitial fibrosis, nephrotic syndrome, distal renal tubular acidosis.
- Dermatological
  - Acne
  - Psoriasis
  - Alopecia
  - Rash
- Other side effects include:
  - Benign T-wave changes
  - Nausea
  - Vomiting
  - Diarrhea
  - Weight gain
- Teratogenic effects
  - If lithium is taken in pregnancy, can cause Ebstein's anomaly of tricuspid valve
  - Risk in lithium in exposed fetus is 1:1000 (20 times more than in general population).
  - Risk is lower than associated with valproate and carbamazepine.

Drug interaction

02:31:48

- ↑ Lithium concentration
  - Diuretics
  - Thiazide
  - K^+ sparring diuretic
  - ACE inhibitors
  - NSAIDs (except aspirin, sulindac)
- ↓ Lithium concentration (↑ Renal clearance)
  - Loop diuretics
  - Osmotics
  - Xanthine
  - Carbonic anhydrase inhibitors

Checking Lithium Levels

02:32:42

- Blood sample should be taken 12 hours 30 minutes after the last lose.
- Therapeutic range 0.5-1.5 mEq/L
- Acute mania 1-1.5 mEq/L
- Maintenance 0.6-1.2 mEq/L
- Toxicity > 1.5 mEq/L

Risk of Lithium Toxicity

02:33:41

- Exceeding recommended dosage
- Renal impairment
- Drug interaction

Body treats lithium like sodium so in certain condition like low sodium diet or dehydration body ties to observe sodium and also observe lithium and subsequently to toxicity.

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Symptoms of Lithium Toxicity 02:34:49

- Mild to moderate (15-2 mEq/L)
  - GI: Vomiting & abdominal pain
  - CNS: Ataxia, nystagmus and muscle weakness
- Moderate to severe (2-2.5mEq/L)
  - GI: Anorexia, Nausea, vomiting
  - CNS: Hyperactive deep tendon reflex, convulsion, stupor, Coma
- Severe (> 2.5mEq/L)
  - Generalized convulsion, oliguria, renal failure, death

Treatment for Lithium Toxicity 02:35:50

- Stop lithium
- Correct hydration
- Removal of unabsorbed lithium for GI tracked
- Polyethylene glycol
- Sodium polystyrene sulphonate
- Activated charcoal has no role
- Severe cases - Hemodialysis

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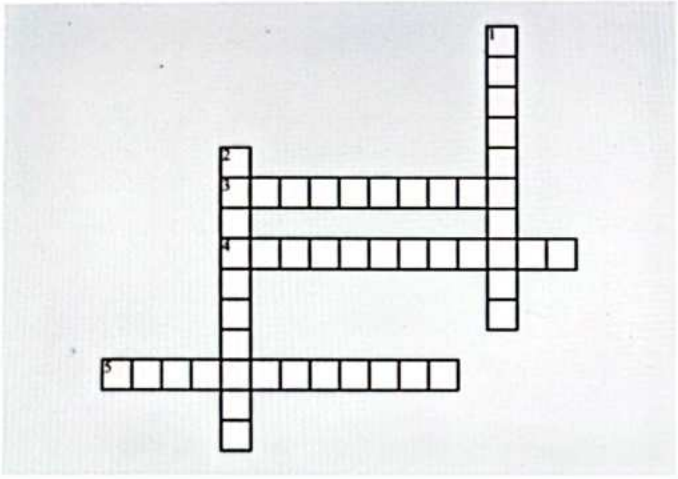
CROSS WORD PUZZLES

Crossword Puzzle1



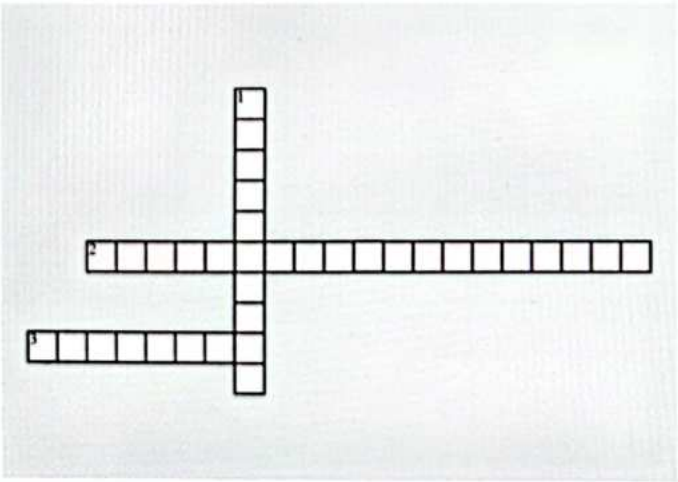
Across

3. Can be used for nocturnal enuresis.
4. _____is the most serotonin-selective drug.
5. The drug of choice is _____in nocturnal enuresis.

Down

1. _____is used in neuropathic pain associated with diabetes.
2. _____ is the most norepinephrine selective.

Crossword Puzzle2



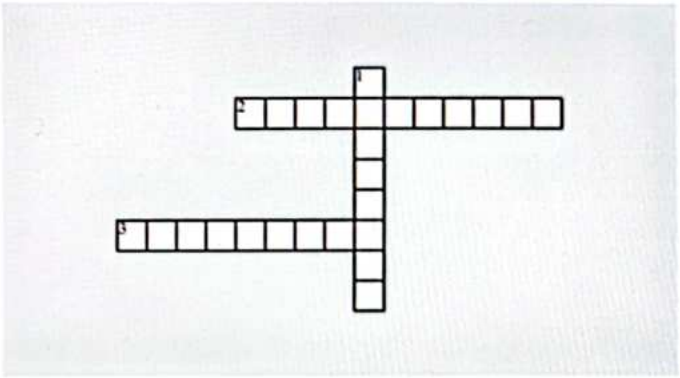
Across

2. TCAs be avoided in narrow-angle glaucoma and _____.
3. Tetracyclic antidepressant is _____ which also blocks D2 receptors.

Down

1. Bicycling antidepressant is _____.

Crossword Puzzle3



Across

2. _____New drug which was in 2019 was FDA approved for Postpartum depression.
3. After _____ a person develops dpression it is called double depression.

Down

1. _____Surpassed Lithium in acute Mania as it has Rapid on set of action and better tolerability.

4 NEUROTIC STRESS-RELATED SOMATOFORM DISORDERS

Anxiety Disorders

00:00:40

- Diffuse, unpleasant, sense of apprehension, nervousness.
- Physiological symptoms: Sweating, tachycardia, restlessness, chest pain, tremors, cold clammy skin, headache.

Difference between Anxiety and Fear

- Anxiety is a response threat which is unknown, internal, or vague. E.g., before viva.
- On the other hand, fear is a response to a threat that is known, external, or definite. E.g., seeing a spider.

Types of Anxiety Disorders

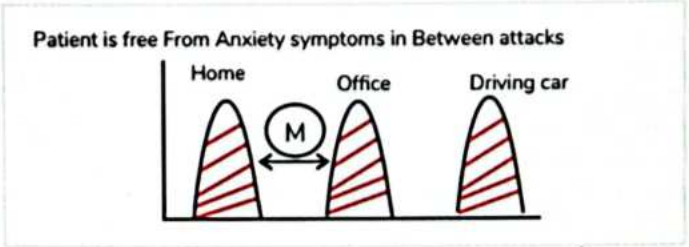
1. **Panic Disorder**
- Sudden anxiety that lasts for short duration.
2. **Phobias**
- Situational anxiety
  - I. Agoraphobia
  - ii. Specific phobia
  - iii. Social phobia
3. **Generalized anxiety disorder**
- Persistent anxiety

Epidemiology

- The most common psychiatric illness in the world is anxiety disorder.
- The individual disorder is a specific phobia.
- All anxiety disorders are more common in females than males, except social anxiety disorder where prevalence is equal.

Panic Disorder

- Panic attack is an acute attack of intense anxiety.
- There may be palpitations, sweating, tremors, shortness of breath, chest pain, depersonalization, and derealization.
- Fear of impending doom, fear of dying, losing control, going crazy.
- Recurrent panic attacks are a panic disorder.
- Panic attacks are unexpected i.e., not restricted to any particular situation, and usually last for 20 to 30 minutes, rarely they may last more than one hour.
- These panic attacks occurring more than one month can be concluded as panic disorder.
- Patient is free from anxiety symptoms in between attacks.



- Patient may have anxiety in anticipation of another attack.
- It is more common in females than males.
- Mean age of onset is 25 years.
- Most common comorbid condition associated with panic disorder is Agoraphobia.
- Neurotransmitters that are implicated in the development of panic disorders are norepinephrine, serotonin, GABA, and cholecystokinin.

Differential diagnosis

- Due to the presence of somatic symptoms, it should be differentiated from-
  - Myocardial infarction
  - Angina
  - Mitral valve prolapses
  - Anaemia
  - Hypertension
  - Asthma
  - Pulmonary embolism
  - Seizure disorder
  - Migraine
  - Hypothyroidism
  - Pheochromocytoma
  - Hypoglycaemia

Treatment

- **Selective serotonin reuptake inhibitors (SSRIs)** are the drug of choice along with benzodiazepine (for short duration), gradually benzodiazepine may be stopped.
  - In the acute phase benzodiazepines such as lorazepam and clonazepam may be given.
  - Along with SSRIs, SNRIs such as venlafaxine may also be used.
- Buspirone which is $5HT_{1A}$ agonist/partial agonist and D_2 agonist/antagonist can also be used.

Psychotherapy

- Cognitive behaviour therapy is done most commonly.
- Relaxation techniques.
- Psychodynamic psychotherapy.

Treatment of choice

- Combination of pharmacotherapy and psychotherapy is a treatment of choice such as SSRIs (+benzodiazepine) plus CBT psychotherapy.

Agoraphobia

- Fear in two or more of the following situations:

- Public transportation
- Open spaces
- Closed spaces
- In crowd places/standing in line
- Alone out of home

- It may be so severe that a person may become homebound.
- If a person is in this anxiety for six months, then it is agoraphobia.
- Most common comorbid psychiatry disorder with agoraphobia is panic disorder.

Treatment

Psychotherapy

- **Behaviour therapy:**
  - Most important behaviour therapy is systematic desensitization (by Joseph Wolpe).
  - Therapeutic graded exposure/ In vivo exposure (exposure and response prevention).
  - Flooding (Implosion).
- **Cognitive behavior therapy**
- **Relaxation techniques**
- **Psychodynamic**

Pharmacotherapy

- Pharmacotherapy has a limited role.
- SSRIs are the drug of choice; benzodiazepine may also be used.
- Venlafaxine and buspirone may also be used.

Specific Phobia

- Strong, persistent, irrational fear of an object/situation.
- If this fear persists for six months or more then it is a specific phobia.

Some Common Phobias	
Acrophobia	Fear of height
Ailurophobia	Cats
Cynophobia	Dogs
Claustrophobia	Closed spaces
Mysophobia	Dirt and Germs
Hydrophobia	Water
Thanatophobia	Death
Nyctophobia	Dark
Xenophobia	Strangers
Pyrophobia	Fire

DSM-5

- Animal (e.g., Dogs, Cats, Spiders)
- Natural environment (e.g., Water, heights)
- Blood-Injection-Needle (e.g., Needles, Invasive Medical Procedures)
- Situational (e.g., Closed places, Planes)
- Others

Treatment

Psychotherapy

- **Behavior therapy-**
  - **Systematic desensitization** is there in which first of all relaxation technique is done, then the hierarchy is made, and the patient moves up to the next step once he masters relaxation. Stepwise desensitization of anxiety is being done.

Systematic Desensitization
Relaxation techniques (Jacobson progressive muscle relaxation)
↓
Hierarchy (Least anxiety to maximum anxiety provoking situation)
↓
Patient moves up next step once he masters Relaxation in previous situation

  - **Therapeutic graded exposure/in vivo exposure** (exposure and response prevention)- Similar to systematic desensitization except there is no relaxation technique. The patient learns to get habituated to anxiety.
  - **Flooding (Implosion)-** The patient is exposed to the supra-maximal stimulus. Patient experiences intense anxiety which gradually decreases.
  - **Modeling (Participant Modeling)-** The patient learns to overcome anxiety by imitation, and the therapist makes contact with the phobic stimulus.
  - **Other therapies-** Psychodynamic psychotherapy (Insight oriented therapy), hypnosis, family therapy, supportive therapy.

Pharmacotherapy

- SSRIs, sometimes with benzodiazepines are used.

Social Anxiety Disorder (Social Phobia)

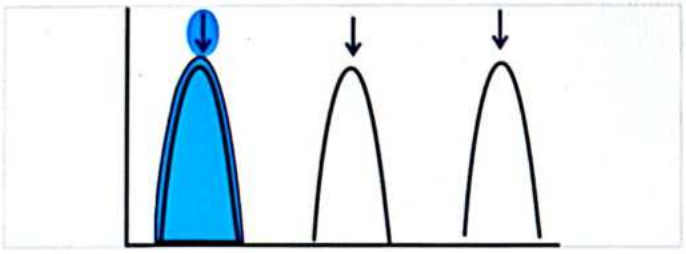
- Fear of social situations, including situations that involve contact with strangers.
- Fear of embarrassing oneself in front of others.
- If it persists for more than six months then it is a social anxiety disorder.

Treatment

- **Pharmacotherapy**
  - SSRIs ± benzodiazepine (Short term).
  - Venlafaxine may be used.

- β blockers like propranolol may be added for performance anxiety.

- **Psychotherapy**
  - Cognitive behavior therapy (CBT) is used.

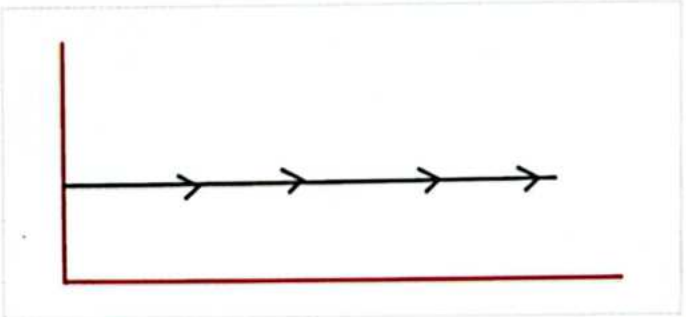


Generalised Anxiety Disorder

- Excessive anxiety and excessive worries.
- Excessive anxiety is generalized and persistent.
- It is not restricted to any particular situation.
- It is also called free-floating anxiety.
- Excessive worries may involve simple daily activities, timelines, and health.
- It may be difficult to control which may lead to impairment of functioning.
- Along with anxiety and worries there may be associated physical symptoms like restlessness, fatigue, poor concentration, irritability, muscle tension, and insomnia.
- If it persists for more than six months then it is called as generalised anxiety disorder.

Treatment

- **Pharmacotherapy**
  - SSRIs ± benzodiazepine (Short term).
  - Venlafaxine may be used.
- **Psychotherapy**
  - Cognitive behavior therapy (CBT) is used.
  - Supported psychotherapy
  - Insight oriented therapy



Obsessive-Compulsive and Related Disorders 00:37:16

There are five obsessive-compulsive disorders:

1. OCD
2. BDD
3. Hoarding disorder
4. Trichotillomania
5. Excoriation disorder

1. Obsessive-Compulsive Disorder (OCD)

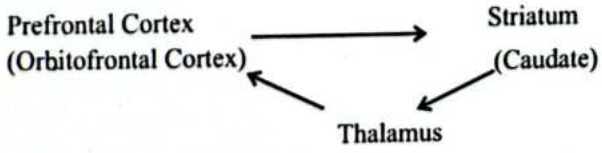
- Patient has recurrent obsessions and compulsions.
- **R - Recurrent** and intrusive thoughts/images/impulses.
- **O**-Patient acknowledges that thoughts are his own, not imposed by others.
- **S** - Patient also acknowledges them to be senseless.
- **I** - He wants to rid of these thoughts, but these are irresistible.

- **Compulsions:**
  - Repetitive behaviours (e.g., washing, checking) or Mental acts (e.g., counting).
  - Patient performs in response to obsessions or in a rigid rule-bound manner.
  - Patient perform them to reduce the anxiety.

- **How to differentiate it from normal behaviour**
  - It may be time consuming, the cause may be clinically significant distress, and there may be impairment in functioning.
- **Obsessions and Compulsions:**
  - Ego dystonic (ego alien)
  - Unable to accept
- Patient can have only obsessions, only compulsions, or both obsessions and compulsions (most common)
- **Specifiers**
  - The patient may have good/fair insight.
  - Patient with poor insight
  - Patient with absent insight/delusional beliefs.
  - Poorer insight is associated with long-term prognosis outcomes.
- **Epidemiology**
  - Lifetime prevalence is 2 to 3%
  - Males and females have equal prevalence (Adolescents M>F)
  - The mean age of onset in OCD is 19 years (early onset is more in males)
- Most common comorbidity associated with OCD is depression.
- **Etiology**
  - Serotonin hypothesis of OCD- Serotonin dysregulation.
  - Norepinephrine- There is less evidence
  - Dopamine-Recent evidence of involvement, for treatment also anti dopamine drugs are given.

Neuroanatomical model of OCD

Cortico-Striatal-Thalamic -Cortical (CSTC) Circuit:



Dysfunction in this circuit → OCD

Neuroanatomical Model of OCD

- Bilaterally smaller caudates
- In some cases, especially in children, OCD may be precipitated by Group A β- hemolytic streptococcal infection.

Hypothesis:

- Infection → Autoimmune antibodies → Basal Ganglia → OCD, TICS

  P – Paediatric
  A – Autoimmune
  N – Neuropsychiatric
  D – Disorders
  A – Associated with
  S – Streptococcus Infection

- **Major symptoms and patterns**

1. **Contamination/Cleansing:** Most commonly patterns present with an obsession with contamination followed by washing and avoidance of the presumably contaminated object.
2. **Pathological doubt/Checking:** Obsession of doubt, usually followed by compulsion of checking.
3. **Intrusive/forbidden thoughts:** The patient may get intrusive obsessional thoughts without observable compulsion. Sexual and aggressive thoughts may be seen.
4. **Symmetry/ordering:** The patient needs symmetry/precision which results in the compulsion of slowness.
5. **Other symptoms:** Magical thinking, the patient believes that their thought about an event can cause the event to occur in the physical world.

Most common Obsessions	Compulsions
1. Contamination (mc)	1. Checking (mc)
2. Pathological doubt (2nd mc)	2. Washing (2nd mc)
3. Somatic	3. Counting
4. Need for symmetry	4. Need to ask or confess
5. Aggressive	5. Symmetry & precision
6. Sexual	6. Multiple
7. Multiple	

Course and Prognosis

- 50% of patients with OCD have sudden onset of symptoms
- Course of OCD: Usually chronic

OCD →
- 20-30% Significant Improvement
- 40-50% Moderate Improvement
- 20-40% No Improvement/Worsen

Treatment:

- **Pharmacotherapy**
  - 1st line: SSRIs(preferred) and Clomipramine (most common serotonin-selective tricyclic antidepressant)
  - Augmenting agents such as Antipsychotics: Risperidone, Aripiprazole, Haloperidol, Olanzapine
  - Other drugs: Valproate, Lithium, Carbamazepine, Lamotrigine, Venlafaxine
- **Psychotherapy**
  - Cognitive behaviour therapy (CBT)
  - Primarily using the behavioural technique of exposure and response (ERP)-In vivo or imaginal exposure of feared situations is given. Patient is asked not to engage in compulsive response.
  - Other therapies-Desensitization, thought-stopping, flooding, average conditioning, psychodynamic psychotherapy, and family therapy.
- **Treatment of choice**
  - Combination of pharmacotherapy and psychotherapy
  - If the patient is young treatment can be started with therapy, and if a patient is having severe symptoms, then pharmacotherapy can be started.
- **Other somatic therapies**
  - For extreme cases, that are treatment-resistant, then electroconvulsive therapy (ECT) and psychosurgery can be considered.
- **Psychological procedures**
  1. Subcaudate tractotomy: Targets substatia innominata (which is inferior to the head of the caudate nucleus), basically the target is white matter tracts connecting the orbitofrontocortex and subcortical structures.
  2. Anterior cingulotomy: Target is the anterior cingulate cortex.
  3. Limbic leukotomy: Targets both areas of subcaudal tractotomy and anterior cingulotomy.
  4. Anterior capsulotomy or GAMMA Knife capsulotomy: Target anterior limb of the internal capsule.

2. Body Dysmorphic Disorder

- Preoccupation with perceived defects or flaws in physical appearance.
- This results in a range of mental acts or behavior in which a person starts indulging the person to compare themselves with others, checking the mirror or person may try to camouflage (cover up) perceived flaws.
- Most common concerns involve the face and head (e.g., hair, nose, skin).
- Differential diagnosis is delusional dysmorphophobia.
- Common comorbidity is depression.
- Patients may seek plastic surgeons for correction of their perceived flaws.

Treatment:

- **Pharmacotherapy** SSRIs
- **Psychotherapy** CBT

3. Hoarding Disorders

- People start acquiring and collecting things of little or no value, this leads to cluttering, causing significant distress, and impairment of functioning (eating, sleeping, safety issues).
- These acts are driven by fear of losing something important or distorted emotional attachment to the item.
- Commonly hoarded items include newspapers, mail, magazines, books, clothes, etc.
- Most common comorbidity with hoarding disorder is OCD.

Treatment: It is difficult to treat

- **Psychotherapy:** Cognitive behavior therapy (CBT)- most effective
- **Pharmacotherapy:** SSRIs

4. Trichotillomania (Hair-Pulling Disorder)

- Recurrent pulling of hair, resulting in hair loss.
- Accompanied by unsuccessful attempts to decrease or stop the behavior.
- Increased sense of tension before engaging in the behavior.
- All areas of the body may be affected, most commonly scalp is affected.
- **Differential diagnosis:** If hair loss is irregular, or if it appears short, broken strands near long healthy hair and there are no abnormalities of skin or scalp. Sometimes a biopsy may be required to differentiate it from alopecia, areata, or tinea capitis.
- Hair plucking may be followed by trichophagy (mouthing of hair), complications include trichobezor, malnutrition, and intestinal obstruction.

Treatment

- **Pharmacotherapy:** N acetyl cysteine (glutamatergic modulator) SSRIs
- **Psychotherapy:** CBT technique - habit reversal therapy (patient may be given other tasks or antagonizing movements so that pulling of hair may be avoided)

5. Excoriation (Skin Picking Disorder)

- Recurrent picking of own skin, resulting in the skin lesion.
- Accompanied by unsuccessful attempts to decrease or stop the behavior.
- Increasing sense of tension before engaging in behavior occurs.
- Most common areas involved are the face, hands, fingers, arms, and legs.

- It should be differentiated from factitious dermatitis.
- Presence of healthy, unaffected skin adjacent to a horrific-looking lesion is a clue to its diagnosis.
- **Treatment:** It is difficult to treat

Psychotherapy: Habit Reversal Therapy (HRT)
Pharmacotherapy: SSRIs

ICD-11: Obsessive Compulsive or Related Disorders

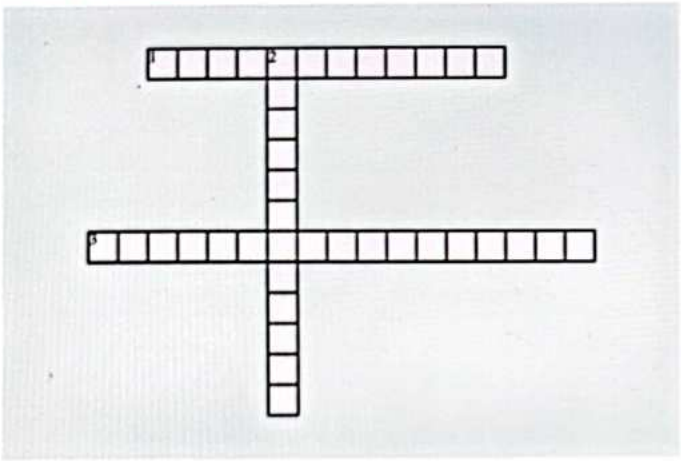
- OCD
- Both dysmorphic disorder
- Hoarding disorder
- Body focussed repetitive behaviour disorder
  - Trichotillomania
  - Excoriation disorder
- Olfactory reference syndrome
- Hypochondriasis

Olfactory Reference Syndrome

- Preoccupation with the belief that one is emitting foul body odour or breath, that is either unnoticeable or slightly noticeable to others.
- Person may be self-conscious and often believe that people are taking notice or talking about the odour.
- Person may repeatedly check the odour.
- Patient may avoid social situations.
- Predominantly it is seen more in males than females.

CROSS WORD PUZZLES

CrosswordPuzzle1



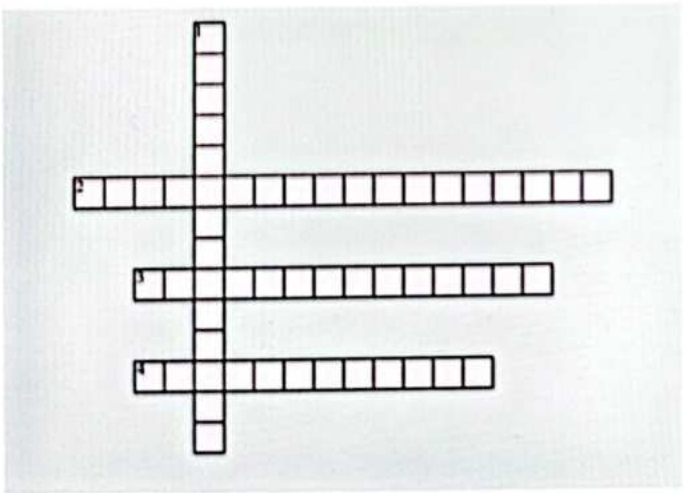
Across

1. _____ is also known as munchausen syndrome.
3. Sudden unexpected travel away from home or workplace is_____

Down

2. _____amnesia is the inability to recall important personal information.

CrosswordPuzzle2



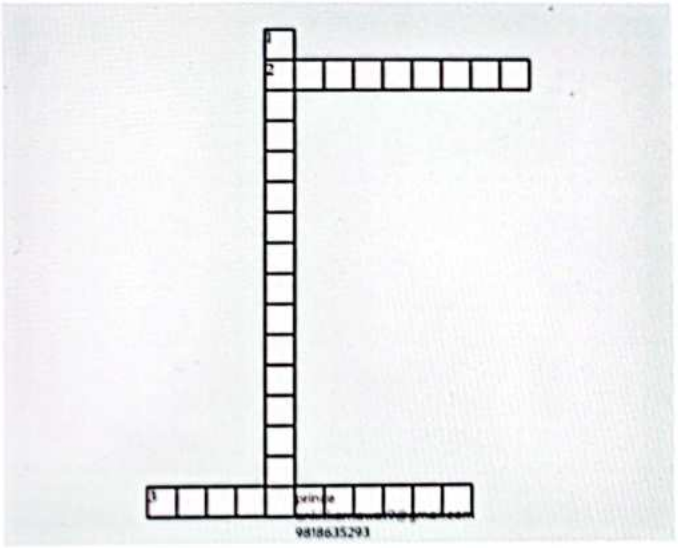
Across

2. _____is a minor event category disorder.
3. _____has hallmark symptoms.
4. _____is false belief of being pregnant.

Down

1. _____disorder is hypochondriasis.

CrosswordPuzzle3



Across

2. _____reference syndrome Preoccupation with the belief that one is emitting foul body odor or breath.
3. _____is a skin picking disorder.

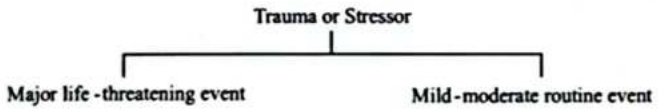
Down

1. People start acquiring and collecting things of little or no value, this disorder is known as_____

5 TRAUMA AND STRESS-RELATED DISORDERS

Trauma and stress-related disorders

These disorders would not have occurred without exposure to stressors or trauma. For better understanding trauma or stressor is divided into two categories.



Major Life-Threatening Event

- This is a very serious form of stressor or trauma.
- These are either directly experienced by the patient or the patient has learned that the trauma has occurred to a close person (violent or accidental trauma).
- These are sufficiently overwhelming to affect anyone.
- This can consist of:
  - Exposure to war
  - Physical assault, kidnapping
  - Sexual violence (rape)
  - Natural disasters (earthquakes, tsunamis, etc.)
  - Serious accidents

Mild - Moderate Routine Event

- These are not as severe but can include:
  - Financial problems
  - Medical illness that is not very severe or life-threatening.
  - Relationship problems, such as the loss of a family member, a breakup, etc.
  - Specific developmental events, for example, when a teenager is leaving his home for the first time, someone is getting married, when someone is becoming a parent for the first time, or when someone after years of employment is taking retirement.
- These are mild or moderate events that all people experience in their lives and sometimes can lead to the development of certain disorders.

The disorders that occur after **major life-threatening** events include:

- Post-traumatic stress disorder (PTSD): As the name suggests it is a stress disorder which is occurring after the trauma. PTSD symptoms last more than a month.
- Acute stress disorder: The symptoms occur acutely and last for less than a month.

When the stressor is **mild to moderate routine stressor**, the disorder that develops is:

- Adjustment disorder.

Post-Traumatic Stress Disorder

00:04:41

- As the name suggests it is a stress disorder which is occurring after the trauma. This happens when there is exposure to actual or threatened death, serious injury, or sexual violence. The duration of symptoms is more than a month.
- In the diagram, it can be seen that Mr. PT is driving to the office in his favorite car. Along with him was his friend Mr. SD. They encountered a serious accident, causing Mr. PT to be admitted to the hospital for quite some time; later on, he was discharged. Mr. SD had minor injuries.

The Symptoms of PTSD

These can be remembered with the mnemonic **MAHI.**

- **M**- Mood and cognitive symptoms that the patient develops after a serious event.

  The patient may develop a negative emotional state, like fear, anger, and guilt. Mr. PT after the accident is very fearful of driving and is guilty as his friend met the accident. This is a negative emotional state. There may also be the development of negative beliefs. Mr. PT may start thinking that he is a very bad person.
- **A**- Avoidance

  When a person tries to avoid his feelings, memories, or thoughts of people, places, and objects, that are related to the trauma. Mr. PT does not follow the same route to the office after the accident; this is avoidance.
- **H**- Hyperarousal

  The person may appear irritable, have an exaggerated startled response, be hypervigilant, suffer from insomnia, and decreased concentration.
- **I**- Intrusion symptoms

  This is when the patient re-experiences the symptoms. The person is getting distressed dreams about the event, distressing memories, and flashbacks of the events.

  Usually, these symptoms begin within 3 months of the trauma and when they remain for more than one month, it is called PTSD.

Delayed Expression

Sometimes all of the symptoms may be seen after 6 months of the trauma. PTSD can have a delayed onset.

Structural changes demonstrated in PTSD

Structural changes can be seen in **Hippocampus and Amygdala.**

It is most prevalent in young adults. Children can also be affected by this disorder.

Risk Factors 00:11:01

- Female
- Childhood trauma
- Poor social support
- Stressful life changes
- Family history of psychiatric illness
- Certain personality disorder traits can also be pre-disposed for the development of PTSD.
  For example, anti-social personality traits, borderline personality, paranoid personality, and dependent personality.
  Anyone who goes through serious trauma may not develop PTSD.

Treatment 00:12:07

- Pharmacotherapy
  SSRIs are considered the first-line pharmacological agents.
- Psychotherapy
  - CBT (cognitive behavior therapy) is the treatment of choice where there is a focus on exposure and the remainder of events rather than avoidance of them.
  - Eye Movement Desensitization and Reprocessing Therapy
    In EMDR there is recalling of distressing images while receiving sensory inputs. Through eye movements, there is desensitization and reprocessing.

Complex PTSD 00:13:48

New diagnosis in ICD 11. This may develop following exposure to an event or series of events of an extremely threatening nature. Most commonly in repetitive events, for example, torture, slavery, prolonged domestic violence, and repeated childhood sexual or physical abuse.

Severe forms of stressors that are repetitive may cause Complex PTSD.

Symptoms of Complex PTSD

In addition to the PTSD symptoms, the following symptoms are seen:

- Severe problems of affect regulation. The mood is fluctuating, and the person does not have a stable mood.
- There is a belief about oneself being worthless and defeated with feelings of shame, and guilt, all related to the event.
- There is difficulty in sustaining relationships and in feeling close to others.

Acute Stress Disorder 00:15:56

In ICD 11 there is a similar diagnosis of acute stress reaction but it does not fall under this chapter.

- There is exposure to actual or threatened death, serious injury, or sexual violence.
- The symptoms are similar to PTSD.
- The symptoms are for a shorter duration and usually resolve within a month.

Treatment

- Cognitive behavioral therapy (CBT) and SSRIs.

Adjustment Disorder 00:17:24

Emotional or behavioral symptoms that occur in response to a stressor is known as adjustment disorder.

These are mild to moderate routine stressors such as financial problems, medical illness, relationship problems, specific developmental events, etc.

Symptoms

- Depressive mood (low mood and tearfulness).
- Anxiety (worry, nervousness).
- Conduct disturbance (like aggression, dissocial behavior).

These symptoms will lead to impairment and functioning.

The symptoms occur within 3 months of the stressor and usually resolve within 6 months of the resolution of the stressor.

This is one of the most common psychiatric diagnoses for patients who are hospitalized for medical or surgical problems.

The differential diagnosis for adjustment disorder:

- Depression
- Brief psychotic disorder
- Generalized anxiety disorder
- Post-traumatic stress disorder

This diagnosis should be given precedence in all cases that meet their criteria even in presence of stressors.

If the person is fully feeling the symptoms of depression, one should make the diagnosis of depression rather than adjustment disorder.

Example: A 24-year-old male lost his job one month ago and is complaining of the following symptoms:

Low mood
Decreased interest
Low energy
Disturbed sleep
Decrease in appetite

Diagnosis

The symptoms qualify the diagnosis of depression.

Example: A 24-year-old male lost his job one month ago and is complaining of the following symptoms:
Low mood
Irritability
Decrease in sleep

Diagnosis
Since the person is having mood-related issues after the trauma, it is an adjustment disorder.

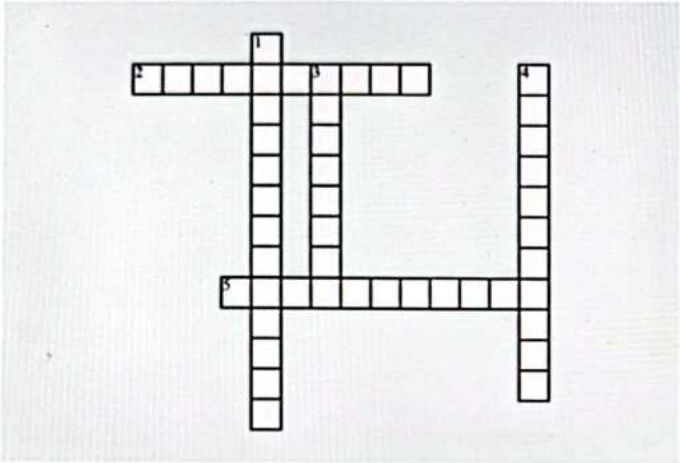
Uncomplicated Bereavement or Grief Reaction	Adjustment disorder
The symptoms occur after the loss of a loved one. These are considered within the normal expected range.	If the reactions are beyond the expected norms, and they are causing significant dysfunction to the person, it is adjustment disorder.

Treatment

- Psychotherapy is considered the treatment of choice for adjustment disorder.
  Therapies like supportive psychotherapy and cognitive behavior therapy (CBT) can be used.
- Sometimes pharmacotherapy may be used but is usually used to augment the effects of psychotherapy.
  SSRIs are used.

CROSS WORD PUZZLES

Crosswords Puzzle1



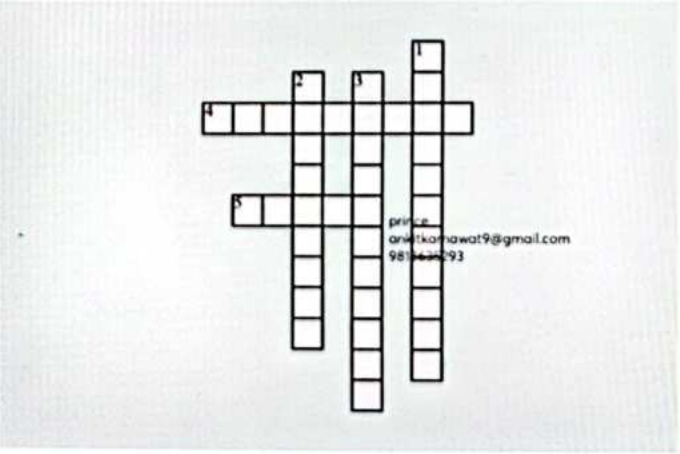
Across

2. Emotional or behavioral symptoms that occur in response to a stressor is known as an ----- disorder.
5. In uncomplicated -----, the symptoms occur after the loss of a loved one.

Down

1. ----- is considered treatment of choice for adjustment disorder.
3. Mild to ----- routine stressors may include financial problems, medical illness, relationship problems, specific developmental events, etc.
4. If the reactions after losing a loved one are beyond the expected norms, and they are causing significant ----- to the person, it is adjustment disorder.

Crosswords Puzzle2



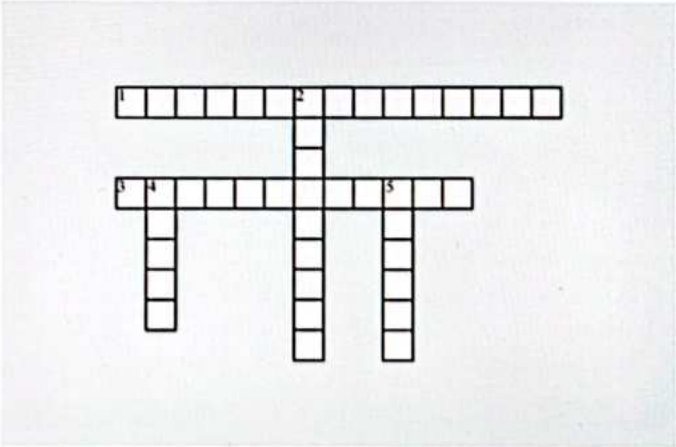
Across

4. Trauma or stress related disorders would not have occurred without exposure to ----- or trauma.
5. PTSD symptoms last more than a -----.

Down

1. Certain ----- disorder traits can also be pre-disposed for the development of post-traumatic stress disorder.
2. Anti-social personality trait, borderline paranoid, ----- personality, are all examples of personality disorder traits.
3. Family history of ----- illness may cause PTSD.

Crosswords Puzzle3



Across

1. In EMDR there is recalling of distressing images while receiving sensory inputs. Through eye movements, there is ------ and reprocessing.
3. ----- is when the person may appear irritable, have exaggerated started response, be hypervigilant, suffer from insomnia and decreased concentration.

Down

2. ----- symptoms are when the person is getting distressed dreams about the event, distressing memories and flashbacks of the events.
4. PTSD is most prevalent in ----- adults. Children can also be affected by this disorder.
5. The symptoms of acute ----- disorder are for a shorter duration and usually resolve within a month.

6 DISSOCIATIVE DISORDERS, CONVERSION DISORDER, SOMATIC SYMPTOMS, & RELATED DISORDERS

Dissociative disorders, conversion disorder, somatic symptoms, and related disorders

All disorders, namely Dissociative Disorders, Conversion Disorders, Somatic Symptoms, and Related Disorders, were previously classified as **hysteria.**

In these disorders, the patient presents with certain symptoms without any bodily cause.

Upon thorough examination and investigation, everything seems normal.

An associated stressor is generally present.

Conversion disorders in ICD-11 have been placed under Dissociative disorders.

While in DSM-5, they are placed under somatic symptoms and related disorders.

Dissociative Disorders 00:01:18

There is a disturbance in one or more mental functions, such as memory, identity, perception, consciousness, or motor behavior

Whenever there is too much stress, the mind or the psyche produces certain symptoms to relieve anxiety and resolve unconscious conflicts.

These symptoms are produced unconsciously. So whenever a person comes with certain symptoms and everything seems normal, the person is most likely not faking these symptoms.

The person is actually experiencing these symptoms but is unaware that the mind produces these symptoms.

The onset of these symptoms is usually sudden, and often they are precipitated, or caused by some psychological trauma or stress.

There are various gains in dissociative disorders:

1. **Primary Gains**
   The primary gain is achieved by keeping the internal conflicts outside the awareness.
   It is done unconsciously by producing the symptoms which reduce the internal conflicts. These are internal gains.
   For example, There is a person who has an exam in the coming days. There is a lot of stress and anxiety related to this and suddenly, one day, the person reports that they're unable to see anything, i.e., he has developed blindness. So this symptom of blindness has reduced or kept those unconscious conflicts of anxiety away from his awareness.
   Now the person is more concerned about his blindness than about studies or exams. So this is the primary gain.

2. **Secondary Gains**
   Secondary gains are advantages or benefits a person gets as a result of getting sick.
   These are external gains.
   For example, a person in this situation is excused from studying due to sickness. They receive support from people and family members and are relieved from duties and responsibilities

3. **Tertiary Gains**
   Tertiary gains are gains derived from the significant others, the people, or the family members close to them because of the patient's symptoms.
   For example, The parents are getting money from relatives, let us say, for the expenditure or the treatment. The parents are getting relief from their offices to take care of the patient.

Epidemiology

There are a very limited number of studies done on dissociative disorders and usually, it is seen that the prevalence in males and females is the same.

But, in certain conditions, females show more prevalence, like in conversion disorders, in dissociative identity disorder, which is multiple personality disorder.

Males may have more prevalence in disorders like Ganser syndrome.

Dissociative Amnesia 00:05:15

It is amnesia, meaning loss of memory. It is an inability to recall important personal information, which is usually of a traumatic event.

It is inconsistent with ordinary forgetting.

Amnesia is also seen in disorders like dementia. But there is some bodily cause that is causing the symptoms. Here, there is no such cause.

For example, a person is rescued two days after his kidnapping. He is unable to recall any information about those two days. So when the police or the family members ask, he is not able to remember everything. However, he remembers everything before those two days and everything thereafter. It happened because there was too much stress. His mind has dissociated or disintegrated some part of their memory from the other functions. This is dissociative amnesia.

Dissociative Fugue 00:06:57

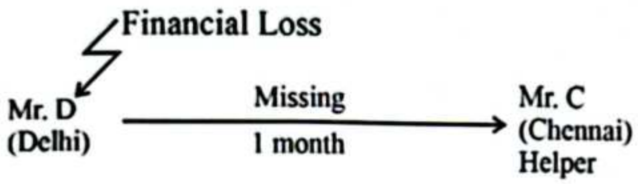
A dissociative fugue is a sudden unexpected travel away from home or the workplace. So this travel is more than the normal travel which we do. Fugue means to run away.

For example, a person may travel from one city to another. The person is unable to recall some or all of one's past. So, a component of amnesia is also there.

The person may be confused about their identity or assume a new identity. Though, a person is able to maintain their basic

self-care during the fugue stage.

In DSM-5, the dissociative fugue is no longer a separate diagnosis but a specifier of dissociative amnesia. Similar changes have been made in **ICD 11**.



For example, There is a person named Mr. D who lives in Delhi. He had a huge financial loss. So, there was a lot of stress as he went bankrupt. Suddenly, he went missing. One month later, one of Mr. D's friends traveled to Chennai. There, he found a person who just looked like Mr. D. He went close to him and asked, why are you here, everyone is searching for you in Delhi. Let's go home. So this person says to his friend that he's not Mr. D, he's Mr. C, who lives in Chennai, and I'm working as a helper in a shop.

Due to too much stress, Mr. D has amnesia about his past event of traveling. He has assumed a new identity and maintained his self-care. It's not that he's faking. The mind has produced these symptoms to decrease the anxiety.

Trance Disorder 00:09:45

It is characterized by a trance states in which there are marked changes in the person's state of consciousness or, there is a loss of sense of personal identity.

There's a narrowing of awareness of the surroundings associated with restrictions of movements and speech experienced as being out of one's control.

There's no experience of being replaced by an alternate identity.

It's just that a person may not be able to recall certain activities he did in the past.

Possession Trance Disorder 00:10:57

It is characterized by a trance state in which there are marked changes in the person's state of consciousness.

There's an experience of being replaced by an alternate identity.

The individual's behavior is expressed as being controlled by the possessing identity.

For example, A newly married claims that the spirit of a dead grandmother has possessed her and during that state, she says to her in-laws to take good care of her, and she does certain behaviors. She talks in a different voice. She may later claim that she was not aware of whatever happened.

Depersonalization-derealization disorder 00:12:25

- There are recurrent experiences of depersonalization or derealization or both.
  - **Depersonalization:** It is a feeling of detachment from the self. The person feels as if the self is unreal. The person may feel like he is watching themselves from outside the body, like watching a movie.
  - **Derealization:** It is a feeling of detachment from the world. The person feels as if the world is unreal.
- In these disorders, reality testing is intact. The person knows what's real and what's unreal.
  - **Differential Diagnosis**

    These symptoms can often be seen in other disorders like Seizure Disorders, migraines, substance use like Cannabis and Lysergic Acid Diethylamide (LSD), and head injury.

    The symptoms of depersonalization and derealization are very common. They're the 3rd most common psychiatric symptoms.

Dissociative Identity Disorder (Multiple Personality Disorder) 00:15:16

In this disorder, two or more distinct personalities exist in one individual, with only one of them evident at a time.

The personalities are also known as alters, having their own pattern of thinking and behaving.

The alters are usually unaware of each other's existence.

For example, There's a person named Ms. P. She returns home and sees herself with strangers in photos on her social media profile. In photos, she appears to know them and spends a good amount of time but couldn't remember any of it. Here, her first identity has gone through that experience, but her second identity doesn't know anything about it.

More than two personalities are possible as well.

Conversion Disorder 00:17:00

ICD-11 places it under dissociative disorders and is known as Dissociative Neurological Symptom Disorder (DNSD).

In DSM-5, it is known as Functional Neurological Symptom Disorder and is classified under Somatic Symptom Disorder.

The patient has certain neurological symptoms that seem to be functional in nature.

So, predominantly the symptoms of conversion disorder are neurological in nature.

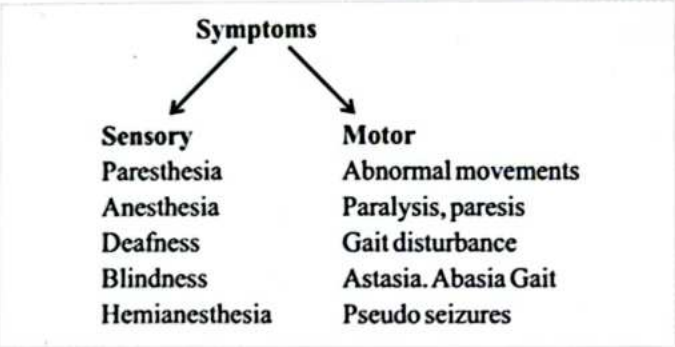
Epidemiology: More in females than males, and generally, the onset occurs in late childhood to early adulthood.

In conversion disorder, a patient presents with symptoms that are suggestive of a deficit in motor or sensory functions or both. So there is somebody at a deficit in certain neurological symptoms but without any evidence of any physical disorder.

The symptoms are neurological, but there is no neurological

50

cause. The reason is that too much stress has converted the stress into these neurological symptoms.
At times, the symptoms are inconsistent with the anatomy and physiology of the body. E.g., inconsistent tremors.
Symptoms may be sensory or motor in conversion disorder.



Example, A seven-year-old girl was hearing her parents arguing and finally decided to separate. After a few minutes, she started reporting that she was unable to see anything. There is a sudden presentation of blindness. She was thoroughly examined, but everything came out to be normal. Upon investigation, everything was again normal. So, this is how a person with classical conversion disorder may present. There was so much stress that the mind converted that stress into some neurological symptom, such as blindness.
Now, other associated symptoms are discussed, especially in conversion disorder.
You'll find **primary gains** as well. There's anxiety reduction.
There are **secondary gains,** like the parents giving her more time and not getting separated.
Tertiary gains may also be present, which the parents may be getting.

La Belle Indifference 00:22:28

La belle indifference is associated with conversion disorder. It includes the patient's inappropriately careless attitude towards serious symptoms. For instance, the girl who is not able to see; may be sitting very calmly.

Other dissociative disorders

- **Ganser Syndrome**
  Here, the hallmark symptom is that a patient may give approximate answers (**VORBEIGEHN**). The patient's reply often misses the mark but bears some obvious relation to the question, indicating that the question was understood.
  For example, if you ask a patient what's the color of grass, they may respond, "red."
  Likewise, if you ask what's the capital of India, they may respond, "Chennai."
  Other symptoms of Ganser syndrome may include the following:
  - Clouding of consciousness
  - Visual or auditory hallucinations
  - Other dissociative symptoms

  During initial recognition, it was seen more in prisoners (**Gangsters**).
  It can be seen in other populations as well.
- **Brainwashing**
  In DSM-5, it is described as "Identity disturbance due to prolonged and intense coercive persuasion.
  A person is subjected to intense coercive persuasions like torture, terrorist hostages, and long-term political imprisonment.
  It may have prolonged changes in their personality, beliefs, and behaviors.

Treatments 00:25:50

Psychotherapy

- **Behavior Therapy:** Here, the focus is on current symptoms. The patient is not encouraged to assume the sick role.
  Secondary and tertiary gains are minimalized to take the patient out of the symptom phase.
- **Abreaction:** It is bringing the unconscious memories and emotions to the awareness of the patient using hypnosis, free association and drugs like thiopentone, amobarbital, diazepam, etc.
- **Psychodynamic Psychotherapy** is also used.

Pharmacotherapy

It has a very limited role in the treatment of dissociative disorders.
Benzodiazepines can be used for a short-term duration in case of anxiety and SSRI (Selective Serotonin Reuptake Inhibitor), especially for depression.

Somatic Symptoms and Related Disorders 00:27:44

These were previously known as somatoform disorders.
The patient presents with somatic (physical) symptoms which lead to significant distress or impairment.
There's no medical cause. They're often called "Medically Unexplained Symptoms" or MUS.

Somatic Symptom Disorder

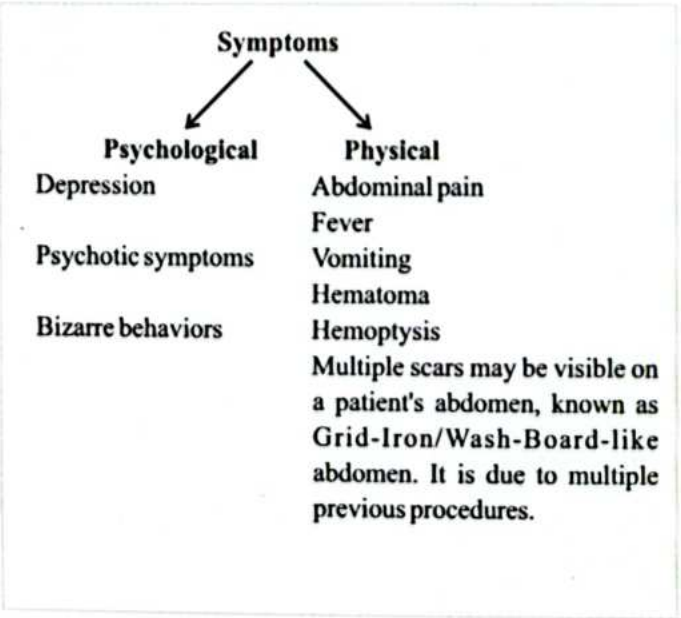
It was previously known as somatization disorder.
It's also called Briquet's syndrome.
ICD-11 uses the term "bodily distress disorder" for this disorder.
The person is preoccupied with somatic symptoms. It may be in the form of excessive thoughts, feelings, or behaviors related to those symptoms.
The duration generally is more than 6 months.
There's a specifier associated, which is predominant pain. Previously, it was separately diagnosed as a **pain disorder.**
There may be an association between the symptoms and psychosocial stressors.
The patient may complain of fatigue, nausea, pain, etc.

Illness Anxiety Disorder (DSM-5) or Hypochondriasis (ICD-11)

The patient is preoccupied with having or acquiring a **serious illness.**
The somatic symptoms are either absent or mild.
The duration is more than six months.
It's an anxiety of having a serious illness. A patient may correlate a headache with a brain tumor.
The preoccupation persists despite normal investigations and reassurances by the doctor.
In delusional disorder (somatic), the patient's belief is fixed, whereas in the case of Hypochondriasis, a patient may doubt his belief for a short duration. It may happen after several reassurances by doctors.

Factitious Disorder

Factitious disorder is also known as **Munchausen syndrome.**
The patient produces fake physical or psychological symptoms to assume a sick role with the aim of receiving medical attention.
The deception may involve giving a false history of symptoms, contamination of laboratory samples, induction of symptoms, or injury.
For example, the patient may add sugar to the urine sample, consume some psychoactive substance, or induce injury marks.
Richard Asher coined the term Munchausen syndrome after a Russian military officer Baron Von Munchausen who would often tell the stories of his bravery.
There are other names for this syndrome like **Hospital Addiction** and **Professional Patient Syndrome.**
Pseudologia Fantastica patients distort their history and tell false details to convince doctors of having certain symptoms.
With time, these patients become very knowledgeable about medicine and hospital.
The symptoms may be psychological or physical.



Factitious Disorder Imposed on Another

It is also known as Factitious disorder by proxy or Munchausen syndrome by proxy.
A person (usually a caretaker) produces symptoms in another person to gain medical attention. It can either be by indirectly assuming the sick role or by being relieved of the caretaking role.

It most commonly involves a mother deceiving that her child is ill and persuading the doctor to admit the child.
The deliberate falsification of symptoms can be done either to receive medical attention or for external gains/benefits.
In the former case, it's a factitious disorder requiring a psychiatric diagnosis. In the latter case, it is known as malingering, which is not a psychiatric diagnosis.

Malingering

Malingering involves producing symptoms for financial gains like insurance claims, avoiding work, military duty, or legal cases.

- Malingering should be suspected if:
  - There's a medicolegal involvement. For example, if a court refers a patient.
  - Also, the patient should be suspected of an evident discrepancy between the alleged symptoms and objective findings.
  - Lack of cooperation during diagnostic evaluation and treatment.
  - There's the presence of antisocial personality disorder.

Body Integrity Dysphoria

There's a new diagnosis in ICD-11 known as **Body Integrity Dysphoria.**
There's an intense and persistent desire to become disabled in a significant way. For example, a desire for limb amputation, to become paraplegic or blind.
There's a discomfort with a current non-disabled body part.
The patient is preoccupied with becoming physically disabled.
They may either pretend or attempt to become disabled.
The onset of this disorder is by early adolescence.

Psychological Factors Affecting Other Medical Conditions

00:40:35

The concept of psychosomatic medicine is incorporated into this diagnosis. Basically, psychological factors cause or aggravate physical disorders.
It covers physical disorders caused by or adversely affected by psychological factors.
A medical disorder must be present to make the diagnosis.
Some examples include anxiety, exacerbating asthma, chronic occupational stress, or increased risk of hypertension.

Stress

A circumstance that disturbs or is likely to disturb the normal psychological or physiological functioning of a person.

Hans Selye believed that stress could be pleasant **(Eustress)** or unpleasant **(DIstress)**.

Sometimes stress is important in doing certain work.

Hans Selye developed a model of stress known as **General Adaptation Syndrome.**

It has three phases:

Stage of Alarm Reaction: It is an immediate fight or flight response to a situation. A person visiting a cold place may either try to run away or stay put.

Stage of Resistance: In this stage, adaption is achieved. A person's body tries to adapt to a situation physiologically.

Stage of Exhaustion: The acquired adaptation either decreases or may be lost.

Specific Organ Systems Involved

- **Gastrointestinal system:** Many GI disorders are affected by psychological factors such as peptic ulcers, ulcerative colitis, Crohn's disease, and irritable bowel syndrome.
- **Cardiovascular diseases:** These may include hypertension, coronary artery disease, and sudden death.
  - **Type A personality:** These people are very competitive, impatient, and aggressive with time urgency. There's a two-fold risk of cardiac infarction or coronary artery disease-related mortality.
  - **Type B personality:** These individuals are calm and relaxed. There's a lesser risk of coronary vascular diseases.
- **Respiratory System:** The diseases like asthma, hyperventilation syndrome, COPD, etc., are associated with psychological disorders.
- Other disorders may also have psychological factors:
  - **Endocrine System:** Hypothyroidism and hyperthyroidism, Diabetes Mellitus, adrenal disorders, etc.
  - **Muscular Disorders:** Rheumatoid Arthritis and SLE.
  - **Skin Disorders:** Psoriasis and atopic dermatitis may also be associated.
  - **Headaches** may also have a psychological cause.

Pseudocyesis

Pseudocyesis is a false belief of being pregnant. It is associated with objective signs and reported symptoms of pregnancy.

There may be abdominal enlargement, breast engorgement, amenorrhea, and labor pains.

Treatment

These patients may not be open to psychiatric treatment because of evident physical signs.

- **Psychotherapy** involves acknowledging that these symptoms are not real.

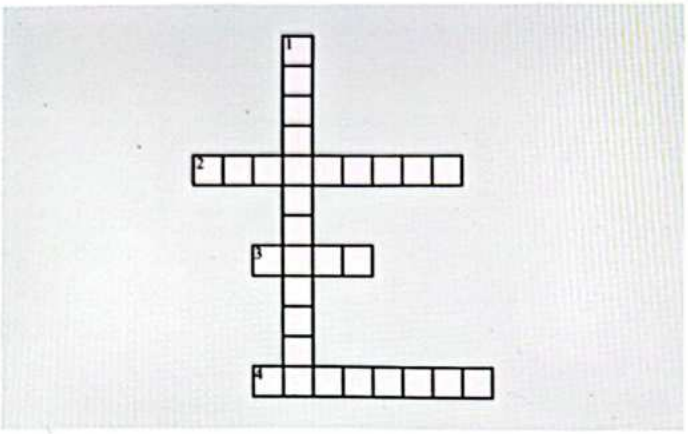
It's also important to clarify the role of psychological factors in causing these symptoms.

Cognitive Behavior Therapy is a preferred modality treatment. It involves identifying the thoughts that increase stress. Behavioral techniques like relaxation are used.

Other therapies like Group therapy, Psychodynamic psychotherapy, Stress management, Relaxation therapy also play some role in these disorders.

CROSS WORD PUZZLES

Crossword Puzzles1



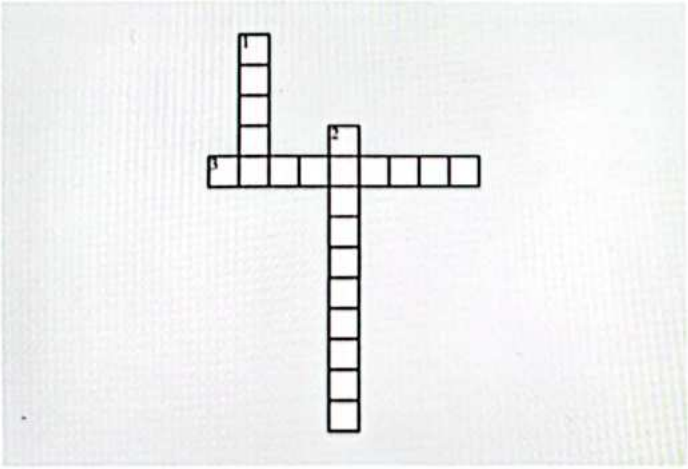
Across

2. _____gains are advantages or benefits a person gets due to getting sick.
3. The primary_____ is achieved by keeping the internal conflicts outside the awareness.
4. _____gains are gains derived from the significant others, the people, or the family members close to them because of the patient's symptoms.

Down

1. Conversion disorders in ICD-11 have been placed under_____disorders.

Crossword Puzzles2



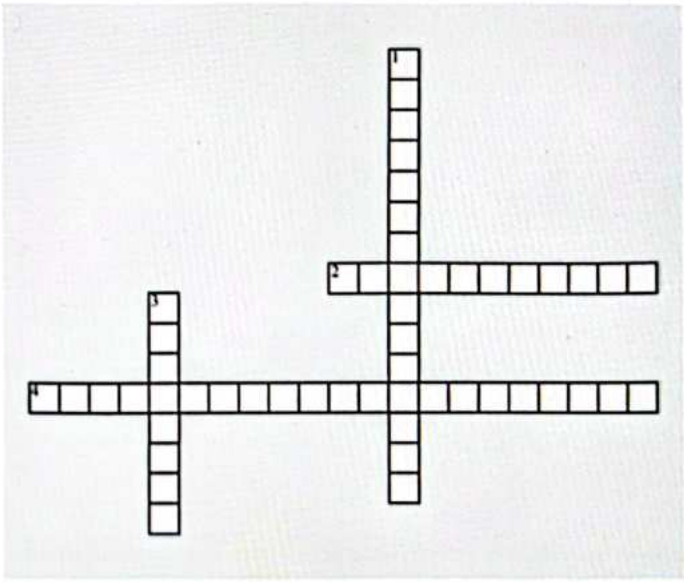
Across

1. _____personality individuals are calm and relaxed. There's a lesser risk of coronary vascular diseases.
3. _____developed a model of stress known as General Adaptation Syndrome.

Down

1. _____personality people are very competitive, impatient, and aggressive with time urgency. There's a two-fold risk of cardiac infarction or coronary artery disease-related mortality.
2. In the stage of_____, adaption is achieved. A person's body tries to adapt to a situation physiologically.

Crossword Puzzles3



Across

2. Factitious disorder is also known as_____syndrome.
4. _____ patients distort their history and tell false details to convince doctors of having certain symptoms.

Down

1. In_____the patient is preoccupied with having or acquiring a serious illness.
3. Multiple scars may be visible on a patient's abdomen, known as _____or Wash-Board-like abdomen.

7 SUBSTANCE USE AND ADDICTIVE DISORDERS

Substance use and Addictive Disorders 00:00:09

- These are mental and behavioral disorders due to use of psychoactive substances or specific repetitive, rewarding, and reinforcing disorders (in which a person may indulge in). For ex: Gambling

Substance Use Disorders (Terms)

1. Dependence (Term used in ICD 11) 00:00:29

- When the use of substance takes much higher priority than other behaviors that once had greater value. For example: Previously a person used to spend a good amount of time with family, Friends and was punctual at his work but now because of substance use, all those activities have taken a back seat. The substance use has taken a higher priority. It includes:
  - **a. Behavioral Disorders-**
    - You see changes related to the substance. For example: Substance Seeking Behaviour (Wherever he goes he tries to seek that substance).
  - **b. Physical Dependence-**
    - Physiological effects due to repetitive use of substances. For example: Development of Tolerance, Withdrawal Symptoms (This symptom occurs when the person stops taking that substance which he was taking from a long time).
  - **c. Psychological Dependence-**
    - Psychologically also, his thoughts are related to substance. He may report a lot of urge to consume that substance. For example: Craving.

Example of Mr. Dep (Dependence)

- He went to a party and he was offered alcohol.
- So, he consumed 1 peg of alcohol which is 30ml. He felt good and relaxed.
- Gradually, he started consuming 30 ml everyday.
- Over a period of time, he realized that his one peg of alcohol is not giving him the previous effects which he was getting.
- So, he started to increase the amount. Within a few years, he started consuming a quarter of alcohol (around 180ml everyday).
- Again, he realized that this amount of alcohol is not giving previous effects.
- He further increased the amount to 2 quarters (around 360ml everyday).
- Again over a period of a few years more, he started consuming a bottle (around 750ml everyday).
- So, whenever he didn't consume this much 750ml, he would report of Tremors, anxiety, Sweating.
- And also now he is neglecting all the other behaviors. He is not punctual at his workplace, neglecting family and he just spends more and more time in consuming the substance.

Criteria for Dependence 00:03:48

- Strong desire or sense of compulsion to take a substance. Example: Mr Dep has the strong urge to take that substance. This is known as Craving.
- There is difficulty in controlling substance taking behavior in terms of its onset, termination or level of use. Example: Mr. Dep says when he starts consuming, he is not able to stop it. He is not able to control the level or amount of use. He would consume higher amounts.
- Withdrawal Symptoms- They are physiological symptoms which develop after reducing or stopping that substance. For example: He is consuming 750ml/day and suppose he does not consume the next day. He will report certain symptoms such as Tremors, Anxiety or Sweating.
  - **d. Tolerance-**
    - An Increased amount of substance is required to produce the desired effects which previously were produced by lower amounts. For example: For Mr. Dep, earlier 30ml was giving the desired effects but now that does not seem to give the similar effects. So, he started to increase the amount.
  - **e. Progressive Neglect-**
    - Progressive Neglect of alternative pleasures or interests because of substance use. For example: Earlier spending time with family, friends and all pleasurable activities are now neglected and the precedence is taken by substance use.
  - **f. Persistence-**
    - Persistence with the substance use despite clear evidence of harmful consequences. So, a person knows that taking the substance is harmful for him. For example: Mr. Dep has learned from his relatives and doctors that the substance is harmful but still he consumed it. It has impacted his family and work life but still despite knowing all consequences he is consuming the substances.

    Dependence is when these symptoms are evident over a period of at least 12 months. Then we say that the person has substance dependence.

2. Harmful use (used in ICD 11) 00:07:04

- In this we say that the criteria of Dependence has not met up till now. Harmful use is a pattern of substance use that has cause damaged to the person's:
  - **Physical Health**- Someone is consuming alcohol in a

way that it started causing disease. Example: Alcohol Liver Disease

- **Mental Health**- After Consuming alcohol, the person starts developing symptoms of anxiety or some who is consuming cannabis starts developing Psychosis.
- It has resulted in behavior that is harming the health of others. For example: After consumption of alcohol, the person becomes harmful to his family. That can lead to injury to family members because it's Trauma.

3. Single episode of harmful use of substance (term used in ICD 11) 00:08:20

- It is when just a single use of that substance has damaged a person's physical or mental health or has resulted in behavior that harms the health of others.

DSM-5

- It uses the diagnosis of "Substance use disorders" and it doesn't use categories of dependence and harmful use.

4. Substance Intoxication 00:08:45

- It is a transient condition that develops after consumption of substance characterized by disturbance in Consciousness, Cognition, Perception, affect (Emotions) or behavior. It occurs when the person has consumed high amounts leading to these faculties.

5. Substance Withdrawal 00:09:37

- It includes clusters of symptoms which occur after stopping or reducing the amount of substance after consuming it for a prolonged period or in large amounts. A person was consuming a substance for a long time and suddenly the person has stopped or reduced the amount. So, it results in certain symptoms which are known as withdrawal Symptoms.

Etiology of substance use and Addictive behaviors 00:09:53

1. Biological Factors 00:10:00

a. Genetic Factors

- There is strong evidence from studies of twins, adoptees, indicating that the cause of substance use has Genetic Components. Someone who is using substance or has substance disorder, so there may be some family history of substance use.
  - Initial results show association with genes that affect Dopamine Production. Many a times it is seen that when people have substance disorders, they have genes in which dopamine production genes have been affected.

b. Neurotransmitters and Pathways

- Neurotransmitters and certain pathways also have been reported to be implicated in substance use disorders. The primary Neurotransmitters involved in developing substance use disorders are:
  - Opioid (like endorphins)
  - Catecholamine (Mainly Dopamine)
  - Gamma-aminobutyric acid (Gaba)
  - Brain Reward Pathway-
    - → It starts from Dopaminergic Neurons in Ventral Tegmental Area (VTA) from midbrain and goes to the Cortical and Limbic Regions, especially towards the Nucleus Accumbens.
  - It is seen that in a lot of this substance use and Addictive behavior, there is a stimulation of this pathway.
  - There is an increase of dopamine in this pathway which leads to reward or reinforcing behavior which urges that behavior to become repetitive.
  - It is involved in the sensation of reward and is the primary mediator of the effects of substances. So, lots of these substances directly or indirectly affect this pathway.

2. Psychological Factors 00:12:27

- The learning and conditioning plays an important role in these kinds of disorders. So, reinforcement of the substance taking behavior can occur:
  - By causing a sense of Euphoria.
  - By terminating negative emotions like pain, anxiety, depression. The substance intake may decrease some of these negative consequences. So, people start repetitive consumption.

3. Social and other factors 00:13:19

- **Drug Availability**: The easier the drug is available, higher chances that it may lead to substance disorders.
- **Social acceptability**: Social Acceptability of substance may lead to increase in consumption of substance.
- **Peer Pressure**- Specially the initial phase of the substance use. Peer pressure sometimes plays an important role when in times person for the first time consumes the substance under pressure of peers.
- **Personality**: Also, personality features and traits of the person may also play the role in development of these Disorders.

Alcohol 00:14:06

- The active ingredient in the beverage alcohol is ethyl alcohol or ethanol.

- 1 standard drink / unit of alcohol corresponds to 10 ml of absolute alcohol or 7.8 grams of absolute alcohol.

Concentration of Ethyl Alcohol in various preparations

Preparation	Concentration of Alcohol by volume (%ABV)
Beer (standard)	3-4
Beer (strong)	8-11
Wines	5-13
Fortified Wines	14-20
Spirits (whiskey, run, Gin, Vodka, Brandy etc.)	40
Arrack	33

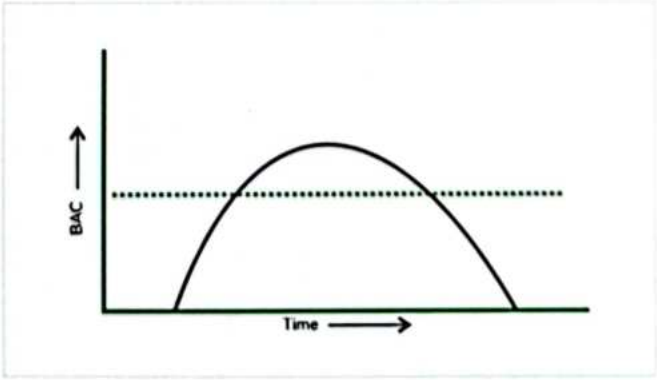
- One standard drink= 1peg (30ml) of spirits

Absorption of Alcohol 00:16:12

- About 10% of the alcohol is absorbed from the stomach and the remainder 90% from the small intestine and Duodenum.
- Peak blood alcohol concentration (BAC) is reached in 30-90 minutes.
- Depends on whether the alcohol was ingested on an empty stomach (enhances absorption) or with food (delays absorption).

Mellanby Effect 00:17:05

- Intoxicating effects of alcohol are more at a given blood alcohol level when BAC is increasing than for same BAC when blood alcohol level is decreasing.



- Let us say the yellow lines correspond to the amount of blood alcohol level in the body.
- So, Mellanby Effect says when the BAC is increasing means at the first point the BAC will be higher than at the same level on the second point where BAC is decreasing.

Reverse Tolerance 00:18:10

- Intoxicating effects of alcohol seen progressively with lower amounts. Tolerance is a higher amount of alcohol required to produce the similar effects. This is the opposite means lower amounts may produce the same effects. This occurs:
  - Cause is believed to be decreasing levels
  - Alcohol metabolizing enzymes
  - Due to progressive liver Dysfunction

Metabolism of Alcohol 00:19:07

- About 90% of the absorbed alcohol is metabolized through oxidation in the liver.
- Remaining 10% is excreted unchanged by kidneys and lungs
- Liver is the main center of metabolism of alcohol.
- Rate of oxidation is 7-10 grams in an hour.

Alcohol (Ethanol) is oxidised by Alcohol Dehydrogenase to
↓
Acetaldehyde is Oxidised by Aldehyde Dehydrogenase to
↓
Acetic Acid
↓
$CO^2 + H^2O$

Alcohol in the alveolar air is in equilibrium with the alcohol in the blood passing through the lungs.

- Hence, determining the alcohol levels in breath by using breathalyzer.
- Gives a good estimate of blood alcohol levels.

Blood Alcohol Concentration (BAC) 00:21:18

- Very commonly it is assessed by a Breath Analyzer.
- Also, it can be added by a Widmark formula which depends on the amount consumed and body weight.

Alcohol Intoxication 00:21:41

- Alcohol is a depressant of the Central Nervous System (CNS). The excitement that follows drinking is due to the CNS depression, not stimulation.

Levels of Impairment at different BAC 00:22:29

Levels (mg/dl)	Impairment
20-30 (30 mg/ dl is legal while driving in India)	Slowed motor performance, decreased thinking ability
30-80	Increase in notes and cognitive problems
80-200	Incoordination, Judgement errors, mood Lability
200-300	Nystagmus, Slurring speech, Alcoholic blackouts (Anterograde Amnesia seen during Intoxication)
>300	Impaired vital signs, possible death

Alcohol Withdrawal 00:24:44

- These are symptoms which develop after reducing or Stopping alcohol intakes.
- Example: Mr. Dep who was consuming 750ml of alcohol everyday, now family members decided that they won't let him drink. So, they put him in a room and closed the door from outside
- So, they suddenly stopped the alcohol consumption. Now, he may start to develop certain symptoms because of following reason:

CNS has adopted to constant presence of alcohol in body:
Neuroadaptation (Continuous Depressant given to CNS)
↓
When BAC is suddenly lowered
↓
Brain is in Hyper Excited stage
↓
Withdrawal Symptoms

Withdrawal Symptoms 00:26:39

- **After 6-8 hours of stopping alcohol (Mild Symptoms):**
  - Withdrawal Symptom is Tremulousness, which is the classical or the most common sign. (Coarse Tremors) Hands and body is shaking.
  - Other symptoms includes:
    → GI symptoms (Nausea, Vomiting)
    → Autonomic Hyperactivity (Anxiety arousal, Sweating, Mydriasis, Tachycardia, Hypertension)
- **After 8-12 hours of stopping alcohol (Moderate Symptoms):**
  - Withdrawal Symptom is Alcoholic Hallucinosis (Hallucinations, Auditory Hallucinations more common, visual hallucinations may also be seen)
  - These hallucinations occur in clear Consciousness. No impairment of consciousness.
- **After 12-24 hours of stopping alcohol (Severe Symptoms)**
  - Withdrawal Symptoms are Seizures. Example: Mr. Dep is lying on the floor. There are jerking movements of the body. These seizures are Generalized Tonic-Clonic Seizures (GTCS).
  - They may occur as Cluster Seizures. Patients may have more than 1 seizure in a span of 3-6 hours.
  - Also, sometimes known as Rum Fits.
- **Within 72 hours of stopping alcohol (Life threatening Symptoms)**
  - Withdrawal Symptoms are Delirium Tremens.
  - There is disturbance of consciousness. Example: Mr. Dep consciousness is impaired)
  - Disoriented (To time, place, person). Example: On reaching hospital, he is not able to identify time, place or the person.
  - Even in Delirium Tremens there may be Hallucinations. Most common here is Visual Hallucinations. Auditory hallucinations can also occur.
    → Delirium Tremens is the most severe form of withdrawal.
    → It is a medical emergency.
    → Untreated DTs have a mortality rate of 20%.
    → Risk of Delirium Tremens increases further, if there is some:
    - Hepatic Insufficiency
    - Pancreatitis
    - Infections
    - Heart Failures
    - Renal Disease
  - Other symptoms like autonomic Hyperactivity, Tremors may also be seen.

Alcohol Induced Disorders 00:32:59

- These disorders occur because of alcohol. They usually resolve within 1 month of cessation of alcohol intake. If they persist for more time, one should look for the possibility of independent disorders.
  a. Alcohol Induced Psychotic Disorders.
  b. Alcohol Induced Bipolar Disorders.
  c. Alcohol Induced Depressive Disorder.
  d. Alcohol Induced Anxiety Disorders.
  e. Alcohol Induced Sleep Disorders.
  f. Alcohol Induced Sexual Dysfunction.
  g. Alcohol Induced Neurocognitive Disorders.

Alcohol Induced Neurocognitive Disorders 00:33:58

1. Alcohol Induced Amnestic Disorder:

- There is some impairment in memory. They are associated with long term alcohol use and they are characterized by disturbance in short term memory. Two important disorders under this:

Wernicke's Encephalopathy: 00:34:33

- **Onset**: Acute
- **Symptoms**:
  - G: Global Confusion (person seems to be in confused state)
  - O: Ophthalmoplegia (Horizontal Nystagmus Gaze Palsy (person not able to move eyes). It is seen that 6th nerve Palsy is most common & 3rd nerve Palsy is second most common)
  - A: Ataxia (Patient may not able to move properly)
- **Cause**: Thiamine (Vitamin B^1) Deficiency. Some factors which lead to deficiency are:
  - Some causes include Poor Nutrition.
  - Also, because of chronic use of alcohol, there is Poor absorption of alcohol from the body.

- Vitamine B¹ or Thiamine is an important cofactor for several enzymes required in body:
  - Thiamine Pyrophosphate
  - Pyruvate Dehydrogenase
  - Alpha-ketoglutarate Dehydrogenase
  - Transketolase
  - Also, Thiamine is required for axon potential and transmission in synapse.
- **Area affected of brain:** Neuropathologic Lesions which are symmetrical:
  - Mammillary bodies
  - Thalamus, Hypothalamus
  - Midbrain
  - Pons
  - Medulla
  - Fornix
  - Cerebrum

- **Treatment:**
  Since, deficiency is of Thiamine, the treatment is Thiamine Supplementation. These patients respond rapidly to parental Thiamine.
- Initial dose: 100mg (oral-2-3 times a day) for 1-2 weeks
- Reversible condition: Person having this generally resolves Thiamine is given.
  - Ophthalmoplegia gets reversed within hours.
  - In small percent cases, there may be some residual ataxia remaining despite treatment.
  - In patients with alcohol related disorders, receiving IV-Glucose solution, it is always a good practice to add 100 mg of Thiamine in each liter of glucose.
    → Suppose a patient has a glucose related disorder and you give IC glucose, so the glucose again is utilized against the Thiamine as a co-factor and those enzymes are utilized and that may precipitate Wernicke's Encephalopathy.
    → So, it's always good to add Thiamine in solution.

Korsak off Syndrome 00:39:30

- **Onset:** Chronic
- **Symptoms:**
  - Impaired recent memory
  - Anterograde amnesia, which is more common. (inability to form new memory)
  - Retrograde amnesia (inability to recall old memory)
  - Confabulation: Making false stories to fill memory gaps. These patients may not be able to remember things, so there are memory gaps. Suppose a person goes to the office and he doesn't remember what he did last time and where he was, these patients fill those memories and make false fabricated stories. These are unintentionally.

- **Cause:** Thiamine (Vitamin B¹) deficiency. Neuropathologic Lesions with symmetrical involving:
  - Mammillary bodies
  - Thalamus, Hypothalamus
  - Midbrain
  - Pons
  - Medulla
  - Cerebrum

- **Treatment:** It's also because of the same deficiency, the treatment is supplementation of Thiamine (100 mg (2-3 times/day) for 3-12 months.
  - In this, it is seen that the symptoms may not totally reverse. Only about 20% of patients recover fully. Some others may have partial recovery.
  - Patients who appear to have Wernicke's-Korsakoff syndrome but do not responds to Thiamine:
    → Then consider Alcohol Pellagra Encephalopathy treatment which is Niacin.

2. Alcohol Induced Dementia: 00:42:45

- Even Dementia can occur because of long use of alcohol.
- Here along with recent memory impairment, there is Global Cognitive impairment (like language).
- This differentiates it from previous disorders.
- Atrophic changes seem to be reversible after 1 year of abstinence. If someone who has developed dementia, because of alcohol and if he stops Alcohol, it is seen that the changes are reversed in a year.

3. Marchiafava Bignami Disease: 00:43:43

It is a rare disorder.

a. Symptoms:
- Epilepsy
- Ataxia
- Hallucinations
- Dysarthria
- Intellectual Deterioration

b. Cause:
- Caused due to nutritional deficiency:
  → Demyelination of corpus callosum
  → Optic tracts
  → Cerebellar Peduncles

Effects of Alcohol on Sleep 00:44:26

- Although alcohol consumed in evening, it increases the ease of falling asleep.i.e., It Decreases sleep latency.
- Alcohol has adverse effect on the Sleep Architecture:
  - Decrease in Rem Sleep and deep sleep.
  - More sleep fragmentations are there, with more and longer episodes of awakening.
- Idea that drinking improves sleep is a myth.

Evaluation of Alcohol Disorders

1. Screening Test 00:45:47

a. Cage Questionnaire:

i. (Need to) Cut down on Drinking.

ii. Annoyance when asked about your drinking.

iii. Guilty about your drinking.

iv. (Need for) Eye openers the morning after heavy drinking

Positive response on 2 or > is suggestive of Alcohol Use Disorders.

b. Audit:

i. It is an Alcohol use disorder identification test.

c. Mast:

i. Michigan alcoholism screening test

d. Other Tests:

i. SADQ: Severity of alcohol dependence questionnaire (used to assess severity of dependence)

2. Laboratory Tests: 00:47:09

a. Carbohydrate Deficient Transferrin (CDT):

i. Elevated levels after heavy drinking

ii. Good sensitivity and specificity

b. Gamma-Glutamine Transferase (GGT):

i. Levels increase in Heavy drinking

ii. Sensitivity and Specificity- 60%

- Levels of GGT and CGT return to normal within days to weeks after stopping alcohol.
- Combination of both CGT and GGT is better than either alone.
- Used for identification of heavy drinking and monitoring abstinence.

c. Aspartate Aminotransferase (AFT) & Alpine Aminotransferase (ALT)

i. Both are Liver enzymes

ii. Ratio of AST: ALT > 2 is correlated with Alcoholic Liver Disease

d. Mean Corpuscular Volume (MCV):

i. Elevated in Heavy drinking

e. Other tests:

i. Uric acid- High normal values in regular heavy drinkers.

ii. Alkaline Phosphatase (ALP): Elevated due to Liver injury by heavy drinking.

Treatment of Alcohol Withdrawal 00:49:12

It has two phases:

1. Detoxification 00:49:35

- In this, we manage the withdrawal Symptoms.
- Usually the duration of treatment is 7-14 days.
- Drug of choice for alcohol withdrawal: Benzodiazepines (BZD) (for all withdrawal Symptoms). These drugs are of short and long acting types:
  - Short acting drugs: Lorazepam is common.
  - Long acting drugs: Chlordiazepoxide Diazepam
- **Alcohol withdrawal Hallucinosis, Alcohol withdrawal Seizures, Alcohol withdrawal DT:**
  - Whatever the case may be, the primary treatment would be Benzodiazepines (BZD)
  - More severe the symptoms, higher doses of Benzodiazepines will be required initially and gradually then slowly we stop the drug.
- **Dose reduction:**
  - If the first day x is required, the next day we may start reducing it 20% everyday.
- **Treatment of withdrawal in Liver Disease:**

It is possible and also common for someone to have liver disease who has been consuming alcohol for a long time. You may see the LFTs are deranged.

  - Say, Mr. Dep has come, you took the sample and sent it to the lab. It may take some time for results to come and you have to start some Benzodiazepines. So, in such situations what Benzodiazepines you will prefer:
    - → Generally, some Benzodiazepines are metabolized in the liver by Glucuronidation. And they need no active metabolites.
    - → Others may undergo Oxidation Glucuronidation and also may have active metabolites.
    - → More Enzymes required methods of metabolism require active metabolites, so it will put more burden on the liver.
  - Drugs which undergo Glucuronidation and they have no active metabolites are generally preferred for patients with Liver Disease.
  - Drugs which may be used in liver disease by Glucuronidation are Lorazepam and oxazepam.
  - Other drugs which undergo Oxidation Glucuronidation and which make more burden on the liver are Chlordiazepoxide, Diazepam. (Less preferred remover disease)
  - In cases of Tremulousness and Alcoholic Hallucinosis, Chlordiazepoxide may be used. These cases seem to have less Dependence potential.
  - In cases of Seizures, IV- Diazepam may be used.
  - In patients with Delirium Tremens, IV Lorazepam may be a preferred drug.
- In the treatment of Alcohol Withdrawal, Benzodiazepines also add Thiamine. Many of the time, these patients have Deficiency of Vitamin B^1.

- Although Benzodiazepines are standard treatment, Carbamazepine also has shown to be effective.
- To control severe agitation and Hallucinations, suppose a patient with Delirium Tremens and you are giving high doses of Benzodiazepenes and thiamine but still the agitation is severe. In those cases, we can add antipsychotics such as Olanzapine, Haloperidol.

2. Maintenance: 00:55:26

- To maintain the Abstinence, here we have two pillars of maintenance:
  - Pharmacological Treatment
  - Non-Pharmacological Treatment

Pharmacological Treatment

a. Deterrent Agent (Aversive Agent): 00:56:00

Drug here is Disulfiram (Alcohol Sensitizing Agent).

- **Mechanism of Action of Disulfiram:** Irreversible Inhibitor of Aldehyde Dehydrogenase (ALDH) enzyme.
- This enzyme helps in conversion of acetaldehyde to acetic acid.
  - Suppose a person is taking Disulfiram everyday and over it the person consumes alcohol. So, inside the body alcohol will be converted to acetaldehyde but the further metabolism would be suppressed. There will be an increasing level of Acetaldehyde.
  - Now, the patient will have unpleasant symptoms which is known as Disulfiram Alcohol Reaction.
  - Symptoms of Nausea, Vomiting, burning sensation in face or stomach may be seen.
  - In a severe reaction, the person may have heart failure, MI or respiratory depression.
  - Disulfiram should be used for patients who have at least some motivation to stay abstinent from alcohol. Otherwise, they will soon land into Disulfiram Alcohol Reaction.
  - The dose of Disulfiram is 250mg (daily). It is given with the consent of the patient. The person knows he is motivated to stop the alcohol.
- **Points to convey to patients before giving Disulfiram:**
  - The time between last alcohol intake and starting Disulfiram, if you have to start Disulfiram at least 12 must have passed. Otherwise, the patients may develop Disulfiram Alcohol Reaction.
  - Similarly if one stops Disulfiram, it is important for them to not drink upto 2 weeks, otherwise Disulfiram Alcohol Reaction can occur.
  - Also, it is important to warn the patient about alcohol in food such as Vinegar, Perfumes or Cough syrups. If a person is on Disulfiram and if he consumed Vinegar or any other, again The Disulfiram Alcohol Reaction may occur.
  - In Disulfiram, one should monitor LFTs because it is rarely seen causing Fatal Hepatitis.

b. Anticraving Agents: 01:00:36

Anticraving Agents, patients have substance use disorder and so they report a lot of Craving or urge to consume the substance.

1. **Acamprosate:** It is a NMDA (N-methyl, D- Aspartate) Antagonist (Glutamate Receptor)
   - Dose is 666 mg - 2 tablets / Thrice daily
   - It is given after stopping the consumption of alcohol.
   - It is contraindicated in severe Renal Impairment. If a person has moderate Renal Impairment, then we have to reduce the dose.

2. **Naltrexone:** It is an Opioid Antagonist.
   - Dose is 50 gm/day
   - It can be started when a patient is consuming alcohol or in withdrawal phase.
   - It is preferred over Acamprosate because of the ease of giving.
   - It is contraindicated in Liver Failure.

- Both Acamprosate and Naltrexone are FDA approved anti-craving agents for alcohol.
- **Other anticraving Agents are (not FDA approved but effective):**
  - Ondansetron (5HT^3 Antagonist)
  - Topiramate (Anti Epileptic agent)
  - Baclofen (Gaba-B Agonist)
  - Fluoxetine (SSRI)
  - Mnemonic to remember anticraving agents:
  - Alcohol - Acamprosate
  - N - Naltrexone
  - O - Ondansetron
  - T - Topiramate
  - Best - Beclofen
  - Friend – Fluoxetine

Non-pharmacological Treatment 01:04:45

a. Cognitive Behavior Therapy (CBT):

It is found to be effective and found to be used in therapies like:

- Motivational Enhancement Therapy (MET)
- Relapse Prevention

b. Alcoholic Anonymous (AA):

- These are self help groups. They follow a 12 steps based approach to stop alcohol (Group people help each other to stop alcohol). Observe accomplishment of Sober group members.

c. Group Therapy

d. Family Therapy

Opioids 01:05:58

- Opioids act on Opioid Receptors.
- They include Psychoactive compounds, which are naturally occurring:

- **Opiates:** These are Alkaloid compounds found in Opium Poppy Plant, which is also known as Papaver Somniferum. These includes substances like:
  - → Morphine
  - → Codeine
- **Opioids also include Synthetic compounds like:** Methadone
  - Pentazocine
  - Heroin
    - → Heroin is the most commonly abused Opioid derived from Morphine and also known as Diacetyl Morphine.
    - → It is more lipid soluble than Morphine.
    - → It crosses the blood brain barrier faster.
    - → It has a more rapid and preferable onset than Morphine.
    - → It has more dependence forming potential than Morphine.
    - → Street names of Heroin includes: Smack, Brown Sugar which are impure form of and have impurities like chalk powder, starch (Fructose, Sucrose), Quinine.

Route of Administration 01:07:30

Opioids can be taken:

- Orally
- Snorted Intranasally, also known as "Chasing the Dragon": In this the person puts the substance on a aluminum foil and then it is lightened from below. There are fumes of the powder which occurs and then these are chased by the straw or pipe.
- Intravenously: The user gradually shifts from peripheral veins to larger veins or central veins. This method is known as Mainlining.
- Subcutaneous Route: Also known as Skin Popping. When suitable blood vessels become unavailable, then users shift to the subcutaneous Route.
- Sublingual Route: Buprenorphine can be taken sublingually.
- Smoked

Clinical Features: 01:09:00

- It produces a feeling of intense Euphoria ("Rush"), especially when taken Intravenously.
- There are associated symptoms which includes:
  - Feeling of warmth
  - Dry mouth
  - Heaviness of Extremities
  - Facial Flushing
- Initial euphoria may be followed by a period of Sedation, known as Nodding Off.
- First time users may report Dysphoria, Nausea or vomiting.

Opioid Intoxication 01:10:00

- Clinical triad which can be seen in Opioid intoxication:
  - Respiratory Depression
  - Patient's eye may have PinPoint Pupil (Miosis)
  - Patient may be in state of Coma
  - Other symptoms of Hypothermia, Hypotension, Bradycardia may also be seen.

Treatment Drug of Choice: 01:10:35

- IV Naloxone: It is an Opioid Antagonist which is a short acting.
  - It is given at a slow rate of 0.8 mg / 70 kg of body weight.
  - Signs of improvement:
    - → Increase respiratory rate
    - → Pupillary Dilation

Opioid Withdrawal 01:11:25

- Someone who is consuming opioid for a long time or in higher amounts, the person may develop certain symptoms after Stopping /Reducing the opioids.
- After taking Opioid Antagonist like Naltrexone also patients can have Opioids Withdrawal.
- After prolonged use of Opioids. Spontaneous withdrawal Symptoms usually develop by 6-8 hours after the last dose.
- Generally peak at around 2-3 days. And they resolve by 7-10 days.
- Withdrawal Symptoms are Flu like Symptoms. Some of them are:
  - Patients complain of Muscle Cramps, Bone aches, Abdominal Cramps
  - Patients may complain of Diarrhea, lacrimation, Rhinnorhea, Sweating
  - Patients may complain of Piloerection or Gooseflesh (Term Cold Turkey was used for Abstinence Syndrome)
  - Patients will Yawn a lot.
  - The eyes of the patient would show Pupillary Dilation (mydriasis)
  - Patient may also show Insomnia, Hypertension, Tachycardia
  - Temperature Dysregulation (Hypothermia, Hyperthermia)
  - Nausea, Vomiting, Restlessness

Treatment of Opioid 01:14:48

This is done in two phases:

1. Detoxification:

- The person is taking Opioids, he is in withdrawal state so we will give drugs now such as:
  - **Methadone:** It is an Opioid Agonist.
  - **Buprenorphine:** It is a Partial Opioid Agonist.
- Starts with higher doses and gradually decreases and stops.

Symptomatic Treatment: When a patient says he is taking Opioids but doesn't want treatment with Opioid related drugs. The drug used here:

- Clonidine: It is a Alpha² Adrenergic Agonist. This drug reduces the:

- Autonomic Withdrawal Symptoms such as Sweating, Restlessness, Tremor or Rhinorrhea.
- Other drugs may be used for other symptoms:
  - Anxiety: Benzodiazepines
  - Insomnia: Zolpidem
  - Musculoskeletal Pain: NSAIDs (Ibuprofen)
  - GI Symptoms: Antiemetic Diarrhea (Loperamide)

Accelerated Detoxification:

- Sometimes the treatment of withdrawal takes a long time, so we can use this method. In this method:
  - We use low doses Naltrexone (Opioid Antagonist)
  - It is given to precipitate withdrawal Symptoms.
  - Clonidine is used to control symptoms.
  - This method reduces the detoxification period to 4-5 days.

2. Maintenance:

- It is used to prevent relapse.
  - Pharmacological Treatment
  - Non-Pharmacological Treatment

Pharmacological Treatment

a. Opioid Substitution Therapy (OST): 01:18:18

In this, we are substituting the impure form of Opioids to the pure forms.

- Principal of Substitute is that the patient is using an illicit, medically unsafe, short acting Opiate, so we substitute that illicit opiate with a medically safe and longer acting Agonist.
  - Drugs used in this are Methadone, Buprenorphine.
    - → These drugs are given under supervision.
    - → They reduce exposure to diseases like HBV, HBC, HIV which may occur due to unsterile equipment in Parental Drug Abusers.
    - → Reduces in Criminal Activities to buy these illicit drugs.
    - → Buprenorphine can also be abused sometimes as it can be mixed with water and injected and abused.
      - To reduce this, we use a combination of Buprenorphine and Naloxone (4:1) sublingually.
      - Naloxone has poor sublingual bioavailability, so when taken it has minimal effects.
      - If dissolved in water and injected, it will have maximum effects.
      - Now, the person is taking Buprenorphine and also it has been mixed with Naloxone which is an opioid antagonist, so it will block the effects of Buprenorphine.

b. Opioid Antagonist Treatment: 01:21:25

- Here the drug used is Naltrexone, which blocks Opioid Receptors.
- As the patient will take Naltrexone daily, it will occupy the Opioid Receptors.
- So, now if a patient consumes any Opioid from outside, there will be no effect as the receptors are already occupied.
- It will fail to produce any euphoria. And the patient will stop using Opioid.
- This is another strategy used in maintenance.

Non-Pharmacological Treatment

a. Cognitive Behavior Therapy (CBT): 01:22:10

1. **Narcotic Anonymous (NA):**
   - It is a 12 step, self help group beneficial for Opioid use Disorders.
2. **Group Therapy**
3. **Family Therapy**

Therapeutic Communities 01:22:38

- This is specially used for Opioids.
- These are residences, and a person has to stay there who has a substance Abuse problem.
- Abstinence is the rule.
- To be admitted into such, a person must have a high level of motivation.
- **Goals:**
  - Change lifestyle (including Substance Abstinence)
  - Develop Personality Honesty, Responsibility and social skills
  - Eliminate certain antisocial behaviors

Cannabis 01:23:32

- It is derived from Hemp plant or Cannabis Sativa.
- Cannabis is the most common illicit or illegal substance in India as well as in the world.
  - In India, Tobacco > Alcohol
  - In world, Alcohol > Tobacco
  - Now, the most common substance is Caffeine
- Various street names of Cannabis are Marijuana, Grass, Pot, Weed.
- The active ingredient which is responsible for the Psychoactive effects of Cannabis is Delta 9 Tetrahydrocannabinol (Delta 9 THC).

Various Cannabis forms	THC content (%)
Bhang (Derived from Dried leaves)	1
Ganja (Derived from flowering stems)	1-2
Hashish (Derived from Dried Resin)	8-14
Hash Oil (Oil based Extract)	15-40

- Cannabis is often referred to as a "Gateway Drug". It means the users are at a higher risk of for other substance use disorders

Methods of Use of Cannabis: 01:27:12

- Cannabis is usually smoked or inhaled as vapor (One of the most efficient way to get THC)
- It can also be ingested orally.
- Not suitable for Intravenous use as it is not water soluble.

Cannabis acts on Cannabinoid Receptors: 01:27:46

- Two major receptors are-
  - **CB1:** Primarily found in Brain. Mediates Psychological and Behavioral effects of THC.
  - **CB2:** More found in the Peripheral Tissues.

Cannabis Intoxication 01:28:07

- There is an excessive feeling of Euphoria.
- There may also be sense of Time Distortion (slowing down of time)
- Redness of Conjunctiva
- Increased Appetite
- Dry Mouth
- Impaired motor coordination
- Other symptoms may include:
  - Depersonalization
  - Derealization
  - Hallucinations with intact reality testing
  - Infectious laughter
  - Talkativeness
- Sometimes the patients experience some unpleasant symptoms of:
  - **Bad Trip:** Sometime after Cannabis use patients experience Restlessness, Fearful, Panic Symptoms or Feeling of going Crazy

Cannabis Withdrawal 01:30:15

- These generally develop within 1-2 weeks of Cessation. If someone is consuming for a long time and suddenly stops or reduces the amount, then they may develop these withdrawal Symptoms.
- (Earlier it was believed that Cannabis has no physical Dependence and no withdrawal Symptoms, but now it is believed that it has both)
- **Withdrawal Symptoms:**
  - Irritability, Anxiety
  - Sleep difficulty (Insomnia, disturbing dreams)
  - Decreased Appetite
  - Decreased Mood
  - Physical Symptoms: Tremors, sweating, Fever, Abdominal Pain, Chills

Cannabis Related Disorders

1. Cannabis Induced Psychotic Disorder: 01:31:50

- After taking Cannabis, a person may develop Psychotic symptoms.
- Also, referred to as "Hemp Insanity".
- Patients experience psychotic Symptoms like Delusions and Hallucinations.
- As these are induced disorders, once patients stop the consumption, symptoms would go away in a month.

Cannabis is a risk factor of development of Schizophrenia. Someone taking Cannabis can also develop Schizophrenia. This is not an induced disorder.

2. Cannabis Induced Anxiety Disorder: 01:32:58

- Increased symptoms of Anxiety after Cannabis use may be there.
- Sometimes symptoms of panic disorder may also occur.

3. Flashback: 01:33:10

- It is characterized by re-experiencing the symptoms of cannabis use, days or weeks they last used cannabis.
- Suppose someone uses Cannabis a few weeks back and develops some symptoms (Euphoria, Time slowness). Now, after a few weeks, the person is not taking Cannabis but re-experiencing the same symptoms.

4. Cognitive Impairment: 01:34:05

- Long term use of Cannabis may Impair Cognitive Function such as memory, attention.

5. Amotivational Syndrome: 01:34:45

- It is characterized by a person's unwillingness to persist in a task, such as at school or work. Person becomes apathetic, Lethargic, and may gain weight.

6. Running Amok: 01:35:23

- It is characterized by the development of Rage.
- After Cannabis use, a person may hurt or even kill others.

Treatment 01:35:55

- As withdrawal Symptoms are mild, supportive care is required. Patients should be in a safe environment.
- In case the symptoms are increased or high then short term use of Benzodiazepines may also be used.
- For long term management, therapies used are:
  - Cognitive Behavior Therapy
  - Family Therapy
  - Group Therapy

Hallucinogens 01:36:50

- Natural and synthetic substances, also known as Psychedelics.
- Some of the Hallucinogens includes:
  - Phencyclidine (PCP): Also known as Angel Dust.
  - Ketamine: It is an anesthetic agent.
  - LSD: Lysergic Acid Diethylamide

- Mescaline: Derived from Cactus
- Psilocybin: Derived from Mushrooms
- Methylenedioxymethamphetamine (MDMA): Also known as Ecstasy

Phencyclidine & Ketamine 01:38:09

- **Mechanism of Action:** Block the NMDA receptors.
- Closely related compounds are termed as "Dissociative Anesthetics". Phencyclidine is not used nowadays but Ketamine is still used.
- Subject taking them seems to be insensitive or dissociate from the environment.
- **PCP & Ketamine Intoxication:**
  - They mimic Symptoms similar to Schizophrenia.
  - Auditory and visual hallucinations.
  - May also develop delusions.
  - Also, there may be disorganization of thoughts.
  - There may also be symptoms of: Euphoria, Floating sensations, Depersonalization, Slowing of time
- **PCP intoxication may also have:**
  - Nystagmus (Vertical and horizontal)
  - Hypertension, Tachycardia
  - Dysarthria, Ataxia
  - Seizures
  - Increased deep tendon reflexes
  - Extreme Aggression

LSD & other Hallucinogens Intoxication 01:40:10

- It produces anxiety, depression.
- Depersonalization or derealization may be seen.
- Synesthesia (Seen with others also, but specially in LSD): Sensation in one sensory modality causes sensation in another modality. Example: Person may experience of seeing music, Touching Lights
- People may also have symptoms like illusions or Hallucinations.
- **Autonomic Hyperactivity Symptoms:**
  - Papillary Dilation
  - Sweating
  - Tachycardia
  - Palpitations
  - Tremors
- **Flashbacks:** Re-experiencing symptoms of Hallucinations after they have last used Hallucinogens.
  - Example: flashes of colors, Visual distortion, Halos, Macropsia (objects appear large), Micropsia (objects appear Smaller)
  - Specially seen with LSD.
- Sometimes after Hallucinogen use, unpleasant symptoms may be experienced:
  - Restlessness
  - Fearful
  - Panic Symptoms
  - Feeling of going crazy

Withdrawal Symptoms 01:42:37

- Hallucinogens usually lack withdrawal Symptoms.
- Hallucinogens lack physical Dependence.

Treatment 01:42:57

- **Intoxication:** Reassurance and Supportive Care is generally the treatment that is being given.
- In extreme agitation, or when Symptoms are severe Benzodiazepines or even Antipsychotics may be used.
- **For long Term Management:**
  - CBT
  - Family Therapy
  - Group Therapy

5 Stimulants

Two important stimulants:

1. Cocaine
2. Amphetamine

Cocaine 01:43:43

- Cocaine is derived from the plant Erythroxylum coca.
- Sigmund Freud made a study of Cocaine's Pharmacological effects. Many biographers believe that Freud was consuming Cannabis in part of his life.
- It was an active ingredient in Coca-cola until 1903. When it was realized that it has addictive potential, it was removed.
- **Mechanism of Action:**
  - It binds to the presynaptic dopamine transporter
  - And it inhibits the the Dopamine Reuptake
  - So, that it increases the levels of Dopamine
  - Also, cocaine inhibits reuptake of Norepinephrine, Serotonin

Methods of Use 01:45:00

- The most common method of using cocaine is inhaling the finely chopped powder into the nose, which is known as "Nodding".
- Due to the Vasoconstriction, it can cause Rhinorrhea, Nose bleed and even it can cause Nasal Septal Perforation
- It can also cause Jet Black Pigmentation of tongue after long use.
- Other method includes:
  - Intravenous, subcutaneous
  - Smoking cocaine (known as freebasing)
    - → Freebasing involves mixing impure cocaine with chemically extracted Pure cocaine (the freebase)
    - → Crack is a freebase form of cocaine and it is highly addictive. Even one time use can cause intense Craving.

- Cocaine is sometimes used in combinations with Opioids Like heroin.
  - Combination of Cocaine and Heroin is called Speed Balls.

Adverse effects of Cocaine 01:47:18

It's a Potent Sympathomimetic Drug:

- It causes Vasoconstriction and it increases the heart rate.
- In the peripheral vessels, it may cause Hypertension, Damage to End organs such as Brian, Kidney or intestine.
- Also, it causes Vasoconstriction in the coronary blood vessels.
- There is an increase in the myocardial demand. This may lead to certain Cardiac Abnormalities.

Cocaine Intoxication 01:48:00

- The person reports of Euphoria, Papillary Dilation, Tachycardia, Hypertension, Sweating, Respiratory Depression, Cardiac Arrhythmias, Seizures.
- It is one of the important drugs which can cause seizures.
- It may also be associated with Auditory Hallucinations, Paranoid Ideations.
- Cocaine use also can cause Tactile Hallucinations, which is known as Cocaine Bugs (a person may feel that insects are crawling under the skin). Also known as Fornication or Magnum Bugs.
- The physical findings, a person may have Scratch Marks over the body.
- Cocaine causes strong Psychological Dependence, Physiological Dependence (Tolerance, Withdrawal Symptoms). Physiological dependence is mild.

Cocaine Withdrawal 01:50:10

- These are also known as Crash.
- In withdrawal Symptoms patients may report Dysphoric mood, Lethargy, Fatigue, Increased Appetite, Night mares.
- Most severe withdrawal Symptom is Depression and it may also be related with Suicidal Ideation.

Cocaine Induced Psychotic Disorder 01:51:01

- Cocaine can also lead to induction of Psychotic symptoms
- Hallmark is Paranoid Delusions (Delusion of Persecution), Auditory Hallucinations
- Visual hallucinations or Tactile Hallucinations may also be present.
- As it is an induced psychotic disorder, if a person stops the consumption, the symptoms will dissolve within a month.
- Most common with Intravenous Cocaine users or Crack users.

Treatment 01:51:42

- Withdrawal Symptoms are usually mild, and no pharmacologic agents reduce the intensity of withdrawal. So, generally no treatment is required or given.
- Long term treatment with Psychotherapeutic Interventions such as:
  - CBT
  - Family Therapy
  - Group Therapy

Amphetamine 01:52:06

- It includes substances like Dextroamphetamine, Methamphetamine, Methylphenidate.
- These produce their effects by causing release of Catecholamines such as Dopamine or NE.

Amphetamine Intoxication 01:52:32

- People may report feelings of Euphoria, Papillary Dilation, Tachycardia, Hypertension, Sweating, Cardiac Arrhythmias, Seizures (more common is with cocaine).
- Hallmark of Amphetamine Induced Psychotic Disorder is similar to Cocaine. It causes Paranoid Delusions and auditory Hallucinations.

Tobacco 01:53:19

- It is the most common substance use disorder in India (if caffeine is not included).
- The active ingredient causing addiction is Nicotine which causes the symptoms.
- It acts in the CNS as Agonist at the Nicotinic Subtype of Acetylcholine Receptors ($Alpha^4$ $Beta^2$, $Alpha^7$ subtype which leads to release of Dopamine in Reward Pathways. And this leads to pleasure arousal and subjective lessening of anxiety).
- Nicotine is a stimulant, so it improves attention, learning, reaction time and problem solving ability.

Methods of Use: 01:55:03

- Smoking is one of the best methods.
  - In India, Beedi smoking is the most common form followed by Cigarette smoking.
  - Chewing forms are also available.
  - Other methods like applying, sucking, Gargling are also available.
- Major Constituents of Tobacco smoke responsible for Cardiovascular effects in Cardiovascular Systems are:
  - Nicotine
  - Carbon Monoxide (CO)

Tobacco Withdrawal 01:56:18

- It can develop within 2 hours of smoking the last cigarette.
- The peak is achieved in 24-48 hours.
- Withdrawal Symptoms can last upto 2-3 weeks.

- **Withdrawal Symptoms includes:**
  - Intense Craving for Tobacco
  - Irritability

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- Anxiety
- Difficulty Concentrating
- Insomnia
- Bradycardia
- Increased Appetite, Weight Gain

Treatment: 01:56:47

- 5 A's for helping Smoking Cessation-
  1. Ask- Whether they are consuming tobacco
  2. Advice- Firm advice to quit
  3. Asses- Try to asses are they willing to quit the substance
  4. Assist- Assist them and Help to Quit
  5. Arrange- Schedule follow up contact

Treatment

Pharmacological Treatment 01:58:05

1. Nicotine Replacement Therapy (NRT):

- It is used to manage the withdrawal Symptoms. Tobacco contains along with Nicotine, other harmful substances too. So, it is replaced by safer forms of nicotine. Various forms of NRTs available are:
  - Nicotine Gums
  - Nicotine Lozenges
  - Nicotine Patches
  - Nicotine Nasal Spray
  - Nicotine Inhalers
- Earlier there was e- Cigarettes, which are now banned in India.

2. Non-Nicotine Medications: 01:59:36

a. Varenicline: It is a partial agonist at α.β. Nicotinic acetylcholine Receptors.

- Nicotine acts on these Receptors
- Release of Dopamine occurs
- It causes Smoking Reinforcement / Reward is there.
- Varenicline acts on the Receptors and hence they decrease the release of dopamine and the rewards associated with smoking.
- Varenicline is found to be the most Efficacious out of all others.
- Dose: Patient sets a quit date and Varenicline is started one week before the quit date.
  - On days 1-3: 0.5 mg once daily is given
  - On days 4-7: 0.5 mg twice daily is given
  - Day 8 onwards: 1 mg twice daily is given
- Those who have successfully stopped smoking, after taking Varenicline, may take 3 months as additional for maintenance of abstinence.
- Common adverse effects: Nausea, Insomnia, Headache
- Serious Adverse Effects:
  - Neuropsychiatric Adverse Effects: Depression, Suicidal Ideations. Recent researches have found that these Symptoms may not worsen / occur with Varenicline.
  - Cardiovascular Adverse Effects: specially who have Cardiovascular Diseases.

b. Bupropion: It is an antidepressant. It is a Norepinephrine Dopamine Re uptake Inhibitor (NDRI). It affects Norepinephrine and Dopamine.

- Common Adverse Effects: Insomnia, Nausea.
- Neuropsychiatric Adverse Effects such as Depression and Suicidal Ideation. Recent researches have found that these do not worsen but still patients need to be careful.
- Contraindications:
  - Seizure Disorders: higher doses can lead to it. So, one should not give it to the Seizure patients.
  - Current / Past Bulimia or Anorexia Nervosa.

- **Psychotherapy:** Behavior Therapy is most widely accepted for treatments of Tobacco use Disorders.

Inhalant Drugs 02:05:12

- These are also known as Volatile Substances or Solvents.
- These are basically Volatile Hydrocarbons (such as Toluene), which evaporates to Gaseous Fumes at room temperature.
- They are inhaled through the nose or mouth.

- **These includes substances:**
  - Solvents for Glues
  - Gasoline (Fuel)
  - Thinners
- It is more common in children and Adolescents.

- **Methods of Use:**
  - **Sniffing:** It is inhaled directly from the Neck of the bottle.
  - **Huffing:** Cloth Dipped in solvent and held over Nose and Mouth.
  - **Bagging:** It is inhaled into a bag filled with solvent.
  - **Dusting:** Spraying it directly over Nose or Mouth.

- **Serious Adverse effects:**
  - Long term use of these inhalers can cause serious Adverse effects such as Irreversible Liver Disease or Renal Damage, muscle damage, Peripheral Neuropathy, Brain damage.

Caffeine 02:07:10

- Caffeine is also considered as a Substance use disorder.
- It is the most widely used Psychoactive Disorder.
- It is a Methylxanthine, which acts as an antagonist of Adenosine Receptors.
- **Signs and Symptoms:**
  - **Mild to Moderate Dose (50-100mg)-**
    → Feeling of Alertness

→ Mild sense of well being
→ Improved motor & verbal performance

- **Caffeine Intoxication (250 mg or more)-**
  → It causes Anxiety, Restlessness, insomnia, sweating, Diuresis, Cardiac Arrhythmias, Tachycardia

- **If the dose is more than >10g:** Not possible with normal beverages. Done with pills.
  → GTCs
  → Respiratory Failure
  → Death

- **It can cause Physiological Dependence:** Caffeine Withdrawal Includes-
  - Depressed Mood, Irritability, Poor Concentration, headache.

Sedative Hypnotic Drugs 02:09:34

- Includes drugs like Benzodiazepines.
- Can cause Physical and Psychological Dependence.
- **Withdrawal Symptoms:**
  - Anxiety
  - Dysphoria
  - Sweating
  - Tremors
  - Insomnia
  - Seizures
- **Treatment:**
  - Gradually decrease the doses and then stops.

Club Drugs 02:10:26

- These are various drugs which are in this category which have different mechanisms.
- They are often associated with Dance Clubs, Dance Parties (Rave Parties). That is why they are also known as Rave Drugs.
- **These Club Drugs are:**
  - E-Ecstasy (Methylenedioxymethamphetamine- MDMA)
  - F-Flunitrazepam (Ropypnol/Roofies)
  - G-Gamma HydroxyButyrate (GHB)
  - K-Ketamine
  - L-LSD
  - M-Methamphetamine
- There are certain Drugs which are known as Death Rape Drugs. These drugs after consumption, they produce disorientation and Sweating effects. After the effect goes away the person may not remember what happened in that period. These drugs sometimes can be misused. The drugs are:
  - K-Ketamine
  - G-GHB
  - F-Flunitrazepam

Behavioral Disorders

Gambling Disorder 02:12:55

- There are persistent and recurrent gambling behaviors. It may be online or offline which is manifested by:
  - **Impaired Control Over Gambling** (Eg: Onset, Duration, Termination). Self control is lost.
  - **Takes precedence over daily activities:** The person may not go to work or may not do household activities and spend more time in Gambling.
  - **Continuation Despite Negative Consequences:** The person may be using a lot of money, there may be disruption in social relationships, disruption in their own health but still the person uses the drug in continuation.
- It leads to impairment in functioning

Gaming Disorder 02:13:56

- It's a new Diagnosis / entity in ICD-11. (DSM-5, under Conditions for further studies).
- It is Persistent or recurrent gaming Behavior (Digital or video gaming), online (over the internet) or offline, which is presented by:
  - Impaired Control over Gaming (Eg: Onset, Duration, Termination)
  - Takes precedence over daily activities
  - Continuation Despite Negative Consequences
- It also leads to impairment in functioning.

Treatment:

- Patients seldom come voluntarily to be treated. Many a times it is because of a lot of monetary loss or due to inconsistency of family members. The person may be brought to the therapist.
  - Psychotherapy is one of the important treatments.
  - CBT
  - Gamblers Anonymous (like previous ones)
  - Family Therapy also becomes an important part of treatment.
  - In Pharmacotherapy certain drugs such as SSRIs, Bupropion and Lithium are found to be useful.

Trans-theoretical Model of Change 02:15:40

- Patients with substance use & Addictive disorders go through stages of change before actually stopping the substance use.
- It is given by Prochaska and Diclemente.
- **According to this model, the state of changes are:**
  - **Pre contemplation-** Person is in a Pre contemplation stage. Person does not see any problem in his behavior and has no intention of Changing it. Eg: A person who is taking alcohol daily (one bottle), and sees no problem then the person denies despite the evidence that it is causing harm.

→ **Strategy-** Provide information about the need for change. Also, the risks (of no change) vs the benefits (of change). Eg: If the person continues alcohol, what can be the risks and also what will be the benefits of stopping alcohol.

- **Contemplation-** The person starts contemplating. The person starts realizing that he has the problem and he starts considering the risks and benefits of stopping the behavior. But the person is not having any commitments for action.
  → **Strategy-** Can encourage the patients to set goals and make Specific small plans to make the person move to the next stage.
- **Preparation-**The person now intends to stop the behavior and starts making a plan.
  → **Strategy-**we can help the individual by creating and implementing the plans. And also by setting realistic goals. It can help the person and make him move to the next stage.
- **Action-** Now, the person takes action and the person stops the behavior and makes changes in his behavior.
  → **Strategy-** we can Provide support, feedback, so the person remains in this phase and then reaches the Maintenance phase. When a person remains in the Action Phase for 6 months, we say that the person has reached the Maintenance Phase.
- **Maintenance-** The person now continues to have the changed behavior that is Sustained Change.
  → **Strategy-** we can help the person by providing support, feedback. And also help & address slips and relapses. (Help for the slips when person consumes the alcohol once or tending to go back)
- **Relapse-** Lastly, sometimes the person may go back to the old behavior, which is relapse. It is a falling back into the same pattern of behavior.
  → Relapse Prevention techniques may be used to prevent Relapses. Many times the person using substances may relapse to the situation back.
  → This relapse may occur in any of the stages even after preparation or action phase.

Motivational Enhancement Therapy (MET) 02:19:50

- It is one of the common techniques used to stop substance use and move from Precontemplation to the Maintenance stage.
- So, through motivational interluding we help the patients to move to the Maintenance Phase.

8 CHILD PSYCHIATRY

Attention Deficit Hyperactivity Disorder (ADHD)

00:00:57

- Older name – Minimal brain damage/dysfunction.
- Neurodevelopmental disorder.

Clinical Features

- Inattention
  - Fails to give close attention to details.
  - Make careless mistakes.
  - Difficulty sustaining attention in tasks.
  - Fails to finish work.
  - Easily distracted.

- Hyperactivity and impulsivity
  - Hyperactivity symptoms include:
    - → Fidgets with or taps their hands or feet.
    - → Leaving their seat when remaining seated is expected such as in class, restaurants, and movie theaters.
    - → Children are always 'on the go' with parents saying that they act as if they are 'driven by a motor'.
    - → Talks excessively.
  - Impulsivity characteristics include:
    - → Interrupts others.
    - → Difficulty waiting for their turn.

Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5)

- When making a diagnosis of ADHD in children, these factors are considered:
  - Onset of symptoms before 12 years of age (In DSM-IV, onset of symptoms before 7 years of age.).
  - Symptoms should be present in two or more settings e.g., home, school.
  - Symptoms present for more than 6 months.

Subtypes

- Combined presentation
  - Symptoms of both inattention, hyperactivity, and impulsivity.
- Predominantly inattentive presentation.
  - Inattentive symptoms only.
- Predominantly hyperactive/impulsive presentation.
  - Hyperactivity and impulsivity symptoms only.

Epidemiology

- More common in boys than girls.

Associated Features

- Learning difficulties.
- Aggressive behaviors.
- Soft (non-focal) neurological signs – motor incoordination, right left confusion, difficulty copying age-appropriate figures.

Etiology

- Genetic factors
  - High heritability at 75%.
  - Increased risk of 2 to 8 times for siblings and parents of children with ADHD compared to the general population.
- Neurotransmitters and anatomical areas
  - Dysfunction in dopamine and norepinephrine neurotransmitters.
  - Prefrontal cortex has a role in attention and regulation of impulse control.
  - Other areas associated with various components of attention and memory e.g., hippocampus, striatum.

Course

- 40% of cases show remission at puberty or in early adulthood.
- Hyperactivity is the first symptom to remit.
- Inattention is the last symptom to remit.
- Remaining cases show partial remission and are at risk of developing antisocial personality disorder, substance use disorder, and mood disorder in future.

Treatment

- ADHD is a serious medical condition requiring treatment.
- ADHD is not just a behavioral problem as the child is not in control of their behaviors.
- It is important to psycho-educate the parents and family members regarding treatment.
- Pharmacotherapy and psychosocial interventions.

Pharmacotherapy

- First line of treatment.

1. CNS Stimulants

- First choice of agents.
- Should not be used in known cardiac risk or abnormalities – also avoided in families that have a history of cardiac problems.
- Can cause insomnia and should not be given at night – given in the morning or second dose administered in the afternoon.
- Examples of CNS Stimulants:

Methylphenidate
- Drug of choice
- Dopamine agonist
- Common side effects:
  - → Headaches
  - → Nausea
  - → Insomnia
  - → It can exacerbate tics
  - → Can cause growth suppression
- If growth suppression occurs, a drug holiday is the appropriate course of action. Drug use is stopped during the weekends, summer holidays, and winter vacations.
- Another preparation is available – dexmethylphenidate

Amphetamine
- 2nd drug of choice
- Used when methylphenidate fails
- Dopamine agonist
- Other preparations: dextroamphetamine, dextroamphetamine/amphetamine salt, lisdexamphetamine

Modafinil
- Clear mode of action unknown
- α-1 agonist
- May help in adult ADHD
- Not FDA approved
- During clinical trials, patients developed Stevens-Johnson skin rash

2. Non-stimulants

- Used in patients where stimulants have poor response, are avoided due to side effects such as tics, or are contraindicated.

- Examples of Non-stimulants:
  Atomoxetine
  - Norepinephrine reuptake inhibitor
  - Increased risk of suicidal ideation
  - Reduces tics

- α-2 agonists e.g., clonidine, guanfacine
  - Common adverse effects:
    - → Sedation
    - → Headache
    - → Fatigue
    - → Hypotension
  - Preferred in comorbid tic disorder when stimulants increase tics.
  - Can be used in night as they cause sedation.
  - Uses of α-2 agonists in psychiatry:
    - → Tic disorder
    - → ADHD
    - → Substance use disorder (detoxification)

- Bupropion.
  - Norepinephrine-Dopamine reuptake inhibitor.
  - Antidepressant used in the treatment of ADHD.
  - Risk of seizure at higher doses.
  - Not FDA approved for ADHD.
  - Uses of bupropion in psychiatry:
    - → Antidepressant
    - → Smoking cessation
    - → ADHD

Psychosocial Interventions
- Psychoeducation of parents
- Cognitive behavioral therapy (CBT)
- Behavior therapy
- Social skills training
- Group therapy

Adult ADHD
- Onset of symptoms in childhood.
- Symptoms persisted in adulthood.
- Retrospective childhood ADHD diagnosis by parent interview or reported by the patient.
- Adult characteristics:
  - Inattention
  - Hyperactivity
  - Mood lability/Mood dysregulation
  - Irritability
  - Impulsivity

Autism Spectrum Disorder 00:25:41

- Previously known as pervasive developmental disorder (PDD).
- DSM-5 and ICD-11 recognize the disorder as autism spectrum disorder.
- Neurodevelopmental disorder.

Two Core Symptoms
- **Deficits in social communications**
  - Poor reciprocal social skills
  - In infants:
    - → Lack of social smiles
    - → Lack anticipatory posture for being picked up
  - Childhood and adolescents:
    - → Poor eye contact
    - → Poor attachment behavior – may not acknowledge the presence of their parents or other important persons.
    - → Awkward social behavior
    - → May have difficulty making friends or romantic relationships

- **Restricted, repetitive behaviors**
  - Their activities are rigid, repetitive and monotonous
  - Often play with toys in a ritualistic manner
  - Specific stereotypies, mannerisms and repetitive spinning or banging may be seen
  - Any changes or disturbances in their routine may upset them or cause panic or fear
- **3rd criteria - Language impairment**
  - Removed from core symptoms in both DSM-5 and ICD-11.
  - Not a defining feature, may be an associated feature.

Associated physical characteristics

- Higher rates of minor physical anomalies such as ear malformations.
- Higher numbers of children do not show early handedness and lateralization and may remain ambidextrous.
- Higher incidence of abnormal dermatoglyphics (fingerprints).

Associated behavioral symptoms

- Language impairment
  - May have a language delay.
  - Difficulty making meaningful sentences.
  - Pronoun reversal e.g., "You want the toy." instead of "I want the toy"
- Intellectual disability
  - Seen in 30% of patients.
  - 30% of these patients have mild to moderate range.
  - 45-50% have severe to profound ranges.
- Irritability
  - Aggressive behavior.
  - Severe injurious behavior e.g., hand banging, skin picking, biting.
  - Severe temper tantrums.
- Altered response to sensory stimuli e.g., sound and pain
  - May show increased interest in some sounds such as a watch.
  - May show little response to other sounds.
  - May have a heightened threshold for pain.
- Precocious skills/Islets of precocity/Splinter skills/Savant skills
  - Seen in 10% of individuals with autism spectrum disorder.
  - High proficiency in some skills as compared to their peers.
  - Examples:
    - → Hyperlexia (early ability to read well).
    - → Excellent rote memory or calculating abilities.

Etiology

- Autism spectrum disorder is caused by multiple factors acting on the CNS.
- Genetic factors:
  - Most common genetic disorder associated with autism spectrum disorder is fragile X syndrome then tuberous sclerosis.
  - Other regions involved included chromosomes 2, 7, 16, and 17.
- Prenatal and perinatal factors:
  - Prenatal factors such as:
    - → Advanced age of mother and father at birth
    - → Gestational diabetes
    - → Gestational bleeding
    - → First born baby
  - Perinatal factors:
    - → Umbilical cord complications
    - → Birth trauma and fetal distress
    - → Rhesus incompatibility
    - → Hyperbilirubinemia
- EEG abnormalities and seizure disorders.
  - 4-32% have grand mal seizures at some point.
  - EEG abnormalities are also seen.
- Overlapping disorders:
  - Autistic disorder
  - Rett syndrome
  - Childhood disintegrative disorder
  - Asperger disorder
  - Pervasive developmental disorder, not otherwise specified (PDD, NOS)
  - DSM - 5 and ICD -11 put all these disorders in a single diagnosis i.e. autism spectrum disorder.

1. Autistic disorder (Autism, Childhood autism)

- Onset is usually before 3 years.
- More common in males than females.
- Genetic factors strongly associated.
- Mental retardation may be seen.

2. Rett syndrome

- More common in females than males.
- Mutation in X-linked gene encoding methyl-CpG-binding protein 2 (MECP2).
- Normal development in the first 5 months after birth.
- Characteristics seen from 6 months to 2 years:
  - Loss of acquired motor skills replaced by stereotypic hand movements such as hand wringing.
  - Loss of acquired speech.
  - Head circumference growth decelerates – microcephaly.
  - May develop poor muscle coordination, unsteady gait, and ataxia.
- Seizures seen in 75% of children.
- Abnormal EEG findings in almost all cases.
- Respiratory irregularities may also occur.
- IQ range: Severe to profound mental retardation may be seen especially in those who live into adolescence and adulthood.

3. Childhood disintegrative disorder (Heller's syndrome)

- More common in boys than girls.
- Normal development for up to 2 years.
- After 2 years, marked regression in several areas:
  - Language, social or adaptive behavior
  - Bowel and bladder control
  - Play skills
  - Motor skills
- Seizures may be seen.
- Most patients left with at least moderate mental retardation.
- Progressive course.
- Some may show improvement.

4. Asperger syndrome

- More common in boys than girls.
- Exhibit no language delay.
- Impairment in non-verbal communicative gestures.
- Repetitive pattern of behavior.
- Factors associated with good prognosis:
  - Normal IQ
  - Better social skills

5. Pervasive developmental disorder, not otherwise specified (PDD NOS)

- Failure to categorize a child in the above disorders leads to a PDD NOS diagnosis.
- Fits in the general description of pervasive developmental disorders but the criteria of a particular disorder cannot be met.

Treatment

- Lifelong disorder with variable severity and prognosis.
- Psychosocial interventions and pharmacotherapy.

Psychosocial interventions

- Early interventions can have a profound impact on many children.

Aims of psychosocial interventions:

  - Develop socially acceptable behaviors.
  - Decrease odd behavioral symptoms.
- Behavioral interventions.
- Cognitive behavioral therapy (CBT).
- Parent training.
- Educational interventions.

Pharmacotherapy

- For targeted symptoms.
- Irritability – risperidone, aripiprazole.
- ADHD symptoms – methylphenidate.
- Seizures – anticonvulsants.

Specific Learning Disorder 00:55:00

- ICD-11 recognizes this disorder as a developmental learning disorder.
- Neurodevelopmental disorder.
- Persistent difficulty in learning academic skills such as reading, written expression or mathematics.
- Inconsistent with the intellectual ability of the child.
- The IQ range is usually normal.

Subtypes

1. Specific learning disorder with impairment in reading (Dyslexia)

- Difficulty in recognizing words.
- Slow, inaccurate reading.
- Poor comprehension.
- Difficulties with spellings.

2. Specific learning disorder with impairment in written expression (Specific Spelling Disorder)

- Poor writing skills.
- Poor spelling.
- Errors in grammar and punctuation.
- Poor handwriting.

3. Specific learning disorder with impairment in mathematics (dyscalculia)

- Difficulty learning numerical.
- Difficulty remembering signs such as +, -.
- Slow, inaccurate calculations.

4. Mixed disorder of scholastic skills

- Combined impairment of reading, written expressions and mathematics.

Comorbid psychiatric disorders

- ADHD, especially with reading impairment.
- Depressive disorders.
- Oppositional defiant disorder.
- Conduct disorder.

Treatment

- Remedial treatment with individualized educational plans to help the child acquire age-appropriate skills.
- Associated emotional and behavioral problems treated with appropriate psychosocial interventions and pharmacotherapy.

Intellectual Disability 01:02:08

- DSM-V recognizes the disorder as intellectual disability or intellectual development disorder.
- ICD-11 recognizes it as a disorder of intellectual development.

- Previously, the term 'mental retardation' was used.
- Significant limitations in both:
  - Intellectual functioning –reasoning, learning, problem solving.
  - Adaptive behavior – conceptual, social, and practical skills.
- Onset before 18 years.

IQ

- Intelligence is usually measured by calculating IQ.
- IQ is an intelligence quotient.
  IQ = Mental age / Chronological age × 100
- Chronological age is the age calculated from the date of birth.
- Mental age is the age of one's intellect.
- Various tests are done to calculate mental age.
- Chronological age, the demoninator, should never be >15 years.
- Normal IQ ranges between 90 - 109.
- Borderline IQ ranges between 70 – 89.
- In mental retardation, IQ < 70.

Examples

- Chronological age – 10 years.
- Mental age – 5 years.
  IQ = 5/10 × 100 = 50
- Chronological age – 17 years.
- Mental age – 7 years.
  IQ = 7/15 × 100 = 46.66

Categories of mental retardation

- **Mild mental retardation**
  - Most common in nearly 85% of cases.
  - IQ of 50-69
  - Can study up to 6th class.
  - Educable.
  - Can achieve self-sufficiency.
  - Mental age – 9-12 years.
  - ≥2 standard deviations below mean.
- **Moderate retardation**
  - IQ of 35-49
  - Can study up to 2nd class.
  - Trainable.
  - Can be trained for semi-skilled or unskilled work.
  - Mental age – 6-9 years.
  - Intelligence and adaptive behavior significantly below, 3-4 standard deviations below mean.
- **Severe retardation**
  - IQ of 20-34
  - No formal education.
  - Dependent.
  - Can perform simple tasks under close supervision.
  - Mental age – 3-6 years.
  - Intelligence and adaptive behavior significantly below, ≥ 4 standard deviations below mean.
- **Profound retardation**
  - Least common in nearly 1-2% of cases.
  - IQ < 20
  - No formal education.
  - Need life support in basic things such as eating, going to the washroom etc.
  - Need continuous supervision.
  - Mental age - <3 years.
  - Intelligence and adaptive behavior significantly below, ≥ 4 standard deviations below mean.

Important Information

- ICD-11 states that adaptive behavior is a better criteria to differentiate severity rather than IQ.
- DSM-5 states that the levels of severity are determined on the basis of adaptive functioning. IQ scores are not used because adaptive functioning determines the level of support that is required.

Older classifications

- Moron – IQ 51-70
- Imbecile – IQ 26-50
- Idiot – IQ 0-25

Etiology

- **Genetic factors:**
  - Most common genetic causes are down syndrome others: fragile X syndrome.
- **Acquired and developmental factors:**
  - Prenatal factors:
    → Maternal infections such as rubella.
    → Fetal alcohol syndrome.
  - Perinatal factors:
    → Premature birth.
    → Low birth weight.
- **Acquired childhood disorders:**
  - Infections such as encephalitis.
  - Head trauma.
  - Long-term exposures such as lead.
  - Asphyxia such as in near drowning.

Treatment

- Incurable.
- Prevention strategies, psychosocial interventions, and pharmacotherapy.

Prevention

- Primary prevention:

- o To eliminate or reduce conditions leading to intellectual disability.
  - o Such as abstinence from alcohol during pregnancy.
  - o Optimal maternal health in pregnancy.
- Secondary prevention:
  - o Prompt attention to complications can diminish their course.
- Tertiary prevention:
  - o Minimization of sequelae or disabilities.

Psychosocial interventions

- Behavioral therapy:
  - o For maladaptive behaviors such as aggression, self-injurious behavior, and hyperactivity.
- Contingency management may be used:
  - o Desired behaviors are rewarded.
  - o Undesirable behaviors are punished.
- Cognitive behavioral therapy (CBT).
- Family therapy.

Pharmacotherapy

- For symptomatic treatment.
- Antipsychotics for aggression, irritability, and self-injurious behavior.
- Selective serotonin reuptake inhibitors (SSRIs) for depression.

Disruptive Disorders of Childhood 01:18:22

- Oppositional defiant disorder.
- Conduct disorder.

Oppositional Defiant Disorder

- Patterns of negativistic, disobedient, and hostile behavior toward authority.
- Don't take responsibility for mistakes.
- Puts blame on others.
- Frequently argue with adults and become easily annoyed by others, leading to anger and resentment.
- Do not resort to physical aggression or destructive behavior.
- Symptoms are present for more than six months.

Treatment

- Family interventions:
  - o Training of parents in child management.
  - o To reinforce prosocial behavior.
  - o To diminish undesired behavior.
- Cognitive behavioral therapy (CBT).
- Individual psychotherapy.

Conduct Disorder

- Pattern of behavior characterized by aggression and violation of rights of others such as:
  - o Physical aggression, threat to harm and bullying others.
  - o Destruction of property, theft and harming animals.
  - o Frequent violation of age-appropriate roles.
  - o Staying out at night despite parent prohibition.
  - o Truancy from school is a symptom if it begins before 13 years.
- Symptoms present for more than 12 months.
- Children with conduct disorder may later develop antisocial personality disorder.
- Low resting heart rate is a predictor of chronic aggression and conduct disorder.

Treatment

- Psychosocial interventions.
- Cognitive behavioral therapy.
- Pharmacotherapy.

Pharmacotherapy

- Atypical antipsychotics such as risperidone for aggression.

Disruptive Mood Dysregulation Disorder (DMDD) 01:23:15

- New diagnosis in DSM-5.
- Described under depressive disorders.
- Diagnosis should not be made for the first time before 6 years of age or after 18 years of age.
- Onset of symptoms before 10 years.

Symptoms

- Severe recurrent temper outbursts:
  - o Verbal e.g., verbal rages.
  - o Behavioral e.g., aggression towards people or property.
  - o Out of proportion to provocation.
- Occur ≥3 times per week.
- Mood between the temper outbursts is persistently irritable or angry.
- Symptoms are present in at least 2-3 settings.
- Symptoms last for at least 12 months.
- **DMDD cannot occur simultaneously with:**
  - o Oppositional defiant disorder (ODD).
    - → ODD includes symptoms of annoyance and defiance that should be present in one setting.
  - o Intermittent explosive disorder.
    - → There is no disruption of mood between outbursts.
  - o Bipolar disorder
    - → Episodic with characteristic manic episodes.

Treatment

- Pharmacotherapy.
- Cognitive behavioral therapy (CBT).

Pharmacotherapy

- Symptomatic.

- Selective serotonin reuptake inhibitors (SSRIs) are the drug of choice if symptoms resemble anxiety disorder or depression.
- CNS stimulants are the drug of choice if symptoms mimic ADHD.
- Atypical antipsychotic and mood stabilizers are used if symptoms mimic bipolar disorder.

Tic Disorders

01:27:55

- Neuropsychiatric events.
- Sudden, rapid, recurrent motor movements or vocalizations.
- Typically performed in response to irresistible premonitory urges.
- Motor and vocal tics:
  - Tics may be simple or complex.

Simple motor tics

- Repetitive contraction of similar muscle groups.
- E.g., eye blinking, shoulder shrugging, hand movements.

Complex motor tics

- Appear more purposeful.
- Grooming behaviors and touching behaviors.
- Echopraxia – repeating movements.
- Copropraxia – obscene movements.

Simple vocal tics

- Such as coughing, throat clearing and sniffing.

Complex vocal tics

- Repeating words or phrases out of context.
- Coprolalia – obscene words.
- Palilalia – repeating own words.
- Echolalia – repeating last heard words of others.

Tourette syndrome (Gilles de la Tourette Syndrome)

- Average age of onset is 4-6 years.
- Peak at 10-12 years.
- Reduction or complete remission in most cases occurs by adolescence or early adulthood.
- Both multiple motor tics and at least one or more vocal tics.
- They present at some time during the illness and may not be present together.
- Tics may wax and wane but may persist for >1 year since the 1st tic onset.
- Age of onset is before 18 years.
- More common in males than females.
- Typically, initial tics are in the face and neck and they tend to occur in the downward direction.
- Most frequent initial symptom is the eye blink tic.
- Common comorbidity:
  - ADHD.
  - OCD.
  - Depression.

Treatment

- Psychotherapy
- Pharmacotherapy

Psychotherapy

- Habit reversal therapy (HRT).
  - Form of cognitive behavioral therapy.
  - Awareness training towards premonitory urges indicating tic is about to occur.
  - Patients are taught to voluntarily perform behavior at the onset of the premonitory urge or tic that is physically incompatible with tic to block the tic.
- Exposure and response prevention.
  - Patient asked to suppress the tic for an increasingly prolonged period of time to break the association between the urge and the tic.

Pharmacotherapy

- Clonidine and guanfacine
  - 1st line due to less side effects.
- Haloperidol and pimozide
  - FDA approved.
  - Can cause significant side effects such as extrapyramidal symptoms.

9 ORGANIC MENTAL DISORDERS

Organic mental disorders

Organic mental disorders have been given a new terminology (in DSM-5 and ICD11), i.e., neurocognitive disorders.

Neurocognitive disorders have the following features:-

- Demonstrable brain dysfunction.
- They are acquired and are not developmental dysfunctions.
- They lead to cognitive deficits.

Important Terms 00:01:20

Cognition

- Mental processes that help us to acquire information.
- Various domains that are associated with/included under this umbrella, i.e., memory, language, orientation, perception, etc.

Consciousness

- Awareness of the self and the environment.
- It also includes the ability to react to internal/external stimuli.
- There are various levels/degrees of consciousness:-
  - Alertness: The person is awake and is aware of the stimulus, and can respond to it.
  - Lethargy/Somnolence: The person is not fully active and may drift into sleep if not stimulated.
  - Obtundation: The person is difficult to arouse and appears confused when stimulated, i.e., impairment of consciousness.
  - Stupor: There is no spontaneous response, Akinetic, or Mutism. A person may respond only to vigorous stimulation, with just groaning. We can sometimes use the term 'Semi Coma'.
  - Coma: It is a stage of unconsciousness. A person will show no response to stimulation, and eyes remain closed.
  - Impaired consciousness
    → Clouding of consciousness
    → State of confusion
    → Altered Sensorium
  - Other terms:
    → Twilight state
    1. Interruption of continuity of consciousness.
    2. It has an abrupt onset/end.
    3. There are episodes of unexpected violent acts/emotional outbursts.
    4. It may be seen in cases of epilepsy, brain tumor, etc.

    → Dream-like (Oneiroid) state
    1. Impairment of consciousness
    2. Patient may appear disoriented/confused
    3. It may also be associated with hallucinations, especially visual ones.

    → Torpor
    1. Impairment of consciousness
    2. It may sometimes appear similar to a stupor.

Important Neurocognitive Disorders

- Delirium
- Dementia
- Amnestic Disorders

Delirium 00:06:00

- It is the most common organic mental disorder.
- It has an acute onset. The symptoms develop within hours or days.
- It has a fluctuating course, i.e., the progression of the symptoms may fluctuate.

Predisposing Factors

- Elderly age
- Association with a chronic medical illness
- History of surgical illnesses
- Postoperative period
- History of substance abuse or alcohol withdrawal (Delirium Tremens)
- Polypharmacy
- Sensory deprivation (Black Patch Delirium)

Diagnosis of Delirium

The following mnemonic represents an easy way to remember the diagnosis:-

Check consciousness and attention in M, S, E

- **Check**- Cognitive impairment in the form of:
  - Memory (recent is impaired while remote is intact)
  - Language is affected
  - Disorientation (Time/Place/Person)
  - Abnormality in Perception (hallucinations, illusions)
- **Consciousness and attention**-
  - Impairment of consciousness is depicted by clouding of consciousness, confused state, altered sensorium and reduced orientation.
  - Impairment of attention is depicted by reduced ability to focus, sustaining/shifting attention.
- **M**- Motor disturbances, i.e., hyperactivity, hypoactivity, etc.
- **S**- Sleep disturbance, i.e., decreased sleep, reversal of sleep-wake cycle
- **E**- Emotional & other disturbances, i.e., sadness, depression, anxiety, transient delusions

- Other features associated with delirium are:-
  - Sundowning: Worsening of symptoms in the evening/night.
  - Occupational Delirium: The patient may behave as if he is still on his job even after being admitted, i.e., display occupational habits/gestures.
  - Floccillation (Carphologia): Aimless picking movements on bedsheets, clothes, etc.

Neurotransmitters involved:
- ↓Acetylcholine

Neuroanatomical area:
- Reticular formation (Regulates attention and arousal)

Etiologies:
- Drugs: Drugs, alcohol, sedatives, antidepressants
- Endocrinal: Hypothyroidism/hyperthyroidism and hypopituitarism/hyperpituitarism
- Liver: Hepatic encephalopathy
- Infections: Septicemia, Pneumonia
- Renal: Uremic Encephalopathy
- Intracranial: Epilepsy, tumor, or injury
- Other: Heat, sleep depreciation
- Metabolic: Hypoxia, hypoglycemia, electrolyte imbalance

Differences between delirium and schizophrenia

	Delirium	Schizophrenia
Consciousness	Impaired	Intact
Delusions and hallucinations	Transient and less organized	Constant and better organized
	Sudden onset of acute psychosis May be associated with fever	

Difference between delirium and dementia

	Delirium	Dementia
Onset	Short	Gradual and insidious (Except vascular dementia due to stroke)
Consciousness	Impaired	Intact
Symptoms	Fluctuate	Stable over time

- Beclouded Dementia
  - Occasionally, delirium may occur in a patient with pre-existing dementia, it is called as beclouded dementia.

Assessment
- Confusion assessment method:
  - Diagnostic tool to identify delirium.
  - It focuses on 4 main areas:
    - → Acute onset and fluctuating course
    - → Inattention
    - → Disorganized thinking
    - → Altered level of consciousness
- EEG (Electroencephalogram):
  - Diffuse slowing of background activity.
  - However, delirium caused by alcohol or sedative-hypnotic withdrawal, have low voltage fast activity.
  - Mini-mental state examination MMSE, which is also known as a cognitive function, can also be used for assessment.

Treatment
- Considering the fact that delirium is reversible, there are certain treatments.
- It can be treated by treating the underlying cause:
  - Physical support: preventing the patients from getting into accidents.
  - Regular orientation to time, place, and person.
- Pharmacotherapy:
  - Antipsychotics: For managing delusion, hallucination, and agitation. Some of the drugs that are used are haloperidol and olanzapine.
  - Benzodiazepine can also be used for treating insomnia. Benzodiazepines are treatment of choice for alcohol withdrawal delirium (Delirium tremens).

Dementia 00:28:18

- It is known as a progressive cognitive impairment in clear consciousness.
- Therefore, consciousness is not impaired.
- As per DSM-5, Dementia and amnestic disorders are added to the new entity called major neurocognitive disorders.

Epidemiology
- It increases with age.
- It is usually around 5% for people at the age of 65.
- It is seen in 20 to 40 % of the population of 85 years of age.

Symptoms of dementia
- Cognitive impairment
  - Memory:
    - → Impairment of memories seen. Initially, the recent memory is affected, gradually the immediate memory, and lastly, the remote memory is lost.

→ In the severe forms, other aspect of memory may be affected:
1. Semantic memory (memory of facts)
2. Autobiographical memory (memory for personal events/people)
3. Implicit (procedural) memory (unconscious learning of skills)

- Language:
  - → There is a disturbance in the language called aphasia.
  - → In mild cases, there is word-finding difficulty.
  - → Though in severe conditions, the person may not be able recall the name of a close friend or family.
- Attention.:
  - → Impairment of complex attention
  - → They take a lot of time to complete normal tasks.
- Perceptual motor:
  - → Inability to perform the learned motor functions, which is called as the apraxia.
  - → Agnosia is the inability to recognize objects.
- Social cognition:
  - → This is the inability to recognize the emotions of others.
- Executive function:
  - → Inability to perform any planning or decision-making.

- Behavioral and psychological symptoms:
  - Personality change:
    - → May become introverted or may become less concerned about the others.
  - Delusion and hallucination:
    - → The most common delusion is the delusion of persecution.
  - Depression and anxiety symptoms
  - Being aggressive or agitated
  - Sleeping problems.
  - Catastrophic reaction:
    - → Agitation secondary to subjective awareness of intellectual deficits under stressful situations.

- Neurological symptoms:
  - Seizures
  - Myoclonic jerks
  - Focal neurological signs, usually in vascular dementia.

- The most common type of dementia:
  - Alzheimer's disease. It is seen around 70 to 80% alone or in combination with other etiologies.
  - Lewy body dementia. (15-35%)
  - Vascular dementia. (5-20%)

- Early onset dementia:
  - If the dementia onset occurs before 65 years of age.
  - The most common cause:
    - → Alzheimer's disease
    - → Frontotemporal dementia (Pick disease)
    - → Vascular dementia

Types of Dementia

- Reversible causes:
  - 15% of dementia is reversible causes.
  - Neurosurgical conditions:
    - → Subdural hematoma
    - → Normal pressure hydrocephalus
    - → Intracranial tumors
  - Infections:
    - → Encephalitis
    - → Neurosyphilis
    - → Lyme disease
  - Metabolic causes.
    - → Deficiency of vitamin B 12, folate, niacin
    - → Hypothyroidism, hyperthyroidism, hypoparathyroidism, and hyperparathyroidism.
  - Other causes:
    - → It includes drugs and alcohol.

- There is another way of classifying dementia:

1. Cortical dementia:
   - Early involvement of the cortical structures.
   - Hence the early appearance of cortical dysfunction is seen, which includes amnesia, apraxia, agnosia, aphasia, and acalculia.
   - Some examples are Alzheimer's disease, pick disease and creutzfeldt-jakob disease.
2. Subcortical dementia:
   - Early involvement of the subcortical structures like basal ganglia, brain stem nuclei, and cerebellum.
   - Early presentation of motor symptoms.
   - Significant disturbance of executive functioning.
   - Prominent behavioral and psychological symptoms.
   - Some examples are Parkinson's disease, Huntington's disease, multiple sclerosis, progressive supranuclear palsy, and Wilson's disease.

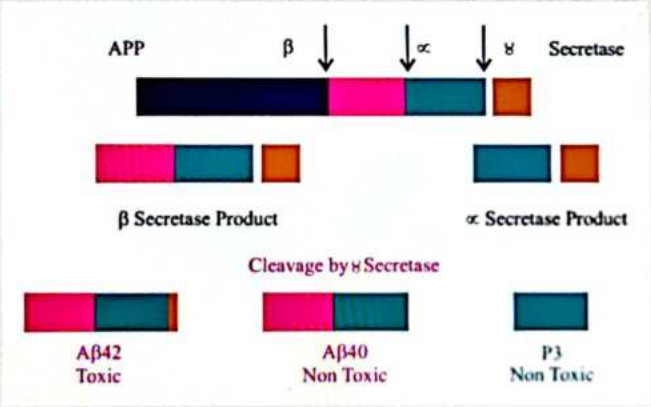
- **Mixed dementia:**
  - Vascular dementia
  - Lewy body dimension.

Alzheimer's disease

- It is the most common type of dementia.
- It consists of gradual and insidious onset.
- Memory deficits are the most common representation.
- Language disturbance may also be seen.
- Gradually, cognitive domains may also be affected causing agnosia and apraxia.

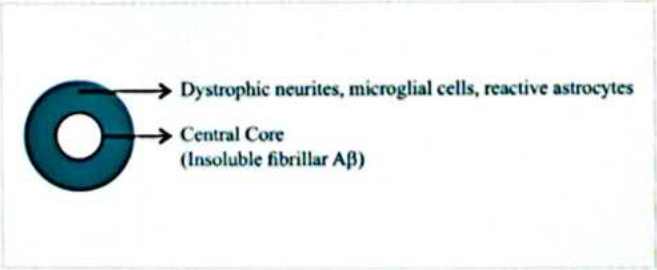
- Lack of insight into their deficit may be seen.
- In later stages, tremors and rigidity may be seen.
- **Epidemiology:**
  - It is seen in females more than males.
- **Genetics**
  - Early onset Alzheimer's disease.
    - → Mutation at 3 genetic loci identified.
      - a. Amyloid precursor protein gene, which is on chromosome 21. (5%)
      - b.Presenilin-1 (PS-1), which is on chromosome 14. (20%)
      - c.Presenilin-2 (PS2), which is on chromosome 1. (1%)
  - Late-onset Alzheimer's disease
    - → Apolipoprotein E Epsilon 4 allele. (APOE4)
      - a. A single copy of APOE4 has 2 to 4 times the risk
      - b. 2 copies of APOE4 has 4 to 8 times the risk.
    - → Other genes are being identified.

Pathophysiology



Evidence suggests:

- Self-aggregation of Aβ into soluble low-n oligomers is the cause of this synaptotoxicity in Alzheimer's disease.
- Soluble Aβ are strongly correlated with cortical synapse loss (Early pathological event).
- Cognitive impairment.
- Further amyloid polymerization occurs, and fibril formation leads to amyloid plaque.



- Mutation in the APP gene, increases the metabolism of the APP by β secretase.
- Mutation of PS1 and PS2 is linked with γ secretase.
- Aβ Also accumulates in these cerebral arterioles, which is termed cerebral amyloid angiopathy.
- α β also contributes to the phosphorylation of TAU protein leading to Neurofibrillary tangles.

Pathology

- Macroscopically:
  - Diffuse atrophy of brain with flatted cortical sulci and enlarged cerebral ventricles.
  - Typically, brain atrophy begins in the medial temporal lobes.
  - It spread to the inferior temporal, lateral and medial parietal lobes and frontal lobes.
  - It typically shows Parieto-temporal distribution.

- Microscopic findings:
  - Amyloid plaque:
    - → It is called senile or neuritic plaques.
    - → First found through the neocortex
    - → Followed by Entorhinal Cortex and hippocampus and then subcortical areas.
  - Neurofibrillary tangles:
    - → Intracellular nucleon bodies, which contain paired helical filaments of abnormally Phosphorylated TAU protein.
    - → This TAU protein plays a good role in stabilizing microtubules, which are required for axonal transport in neurons.
    - → Once Hyperphosphorylated, the function is compromised.
    - → These are first found in the enthrall cortex, spread widely in the cortical structures hippocampus and also seen in frontotemporal dementia.
  - Both neurofibrillary tangles and Amyloid plaque can be seen in elderly people with normal cognition.
  - They are most widely spread in Alzheimer's disease.
  - In the neuropathological diagnosis, both amyloid plaque and neurofibrillary tangles are required.
  - The number of neurofibrillary tangles is correlated better with the degree of dementia than the number of amyloid plaques.
  - Granular vascular degeneration and Hirano bodies are most commonly affected.
  - Pyramidal neurons in the hippocampus may be found.

Neurotransmitters

- Acetylcholine.
  - Decrease of acetylcholine.
  - Loss of chlorine energic neurons in the nuclear basalis of meynert minors and other areas.
- Norepinephrine and Serotonin are also decreased.
- Excessive stimulation by glutamate may damage neurons.

Risk factors and protective factors

- The most common factor of Alzheimer's disease is age.
- Head trauma
- Oxidative stress.
- One of the protective factors is the high education level.
- Some studies have found that smoking is a protective factor.

Vascular dementia or multi-infarct dementia

- It results from stroke, whether hemorrhagic or ischemic.
- It is more common in males than in females.
- These are associated with cardiovascular risk factors.
- It shows a step ladder pattern which defines a stepwise deterioration of symptoms.
- It has acute onset.
- Along with cognitive symptoms, the patient may also have focal neurological signs.
- It may also affect the cortex or subcortex.

Treatment

- Management of vascular health is quite important as a treatment.
- Vascular health includes blood pressure, cholesterol, sugar, etc.

Frontotemporal dementia (Pick disease)

- Atrophy of frontal and temporal lobes
- These regions have neuronal loss, gliosis, and pick bodies.
- These are more common in males than in females.
- It shows an early age of onset,
- Personality changes and behavioral changes categorize early stages.
- Relative preservation of cognitive functions like memory is also seen.
- It has 2 variants:
  - Behavioral variant:
    - → It occurs in the frontal lobe.
    - → It shows disinhibitory behavior, apathy, stereotypy and hyperorality.
  - Language variant:
    - → It occurs in the temporal lobe.
    - → They might show semantic variants, which include impaired naming and word comprehension.
      1. Progressive non-fluent aphasia has also been seen where they have the inability to produce words or show grammatical errors.

Lewy body disease (Dementia with Lewy body)

- Progressive cognitive decline is seen.
- Memory impairment may not be prominent in the early stages.
- Both cortical and subcortical features are seen
- Core features are:
  - Fluctuating cognition
  - Visual hallucination
  - Motor features of parkinsonism.
- Dementia occurs with or before parkinsonism

- Some of the Suggestive features are:
  - REM sleep behavior disorder: It shows the failure of having atonia. Therefore, people start reenacting their dreams like punching or kicking.
  - Severe neuroleptics sensitivity: It means they are too sensitive to antipsychotics.
- Some of the supported features are:
  - Repeated falls, syncope
  - Transient loss of consciousness
  - Severe autonomic dysfunction
  - Hallucination in other modalities
  - Systematized delusion – delusion of persecution, Capgras syndrome
  - Depression
- Pathology:
  Lewy bodies
  - Spherical intracytoplasmic eosinophilic, including bodies
  - Fibrillar deposit of Alpha Synuclein.

Prion Disease

- These are caused by Prions (infectious proteins).
- It shows rapid progression.
- Initially, memory impairment, confusion and ataxia, myoclonus are seen.

Normal pressure hydrocephalus

- They show abnormally gait.
- Dementia, usually, mid-moderate with emphasis on executive impairment is seen.
- Urinary incontinence.
- It is reversible.
- It shows ventricular shunting.

Huntington's disease, Parkinson's Disease, Wilson's disease, and Multiple sclerosis are subcortical dementia.

HIV-related dementia/AIDS dementia complex

- Diagnosis made by the laboratory evidence of systematic HIV, cognitive deficits, motor abnormalities, and personality changes.

Head trauma-related dementia

- Also known as Dementia pugilistica and punch drunk syndrome
- It may occur in boxers because of repeated head trauma over many years.
- Emotional lability, dysarthria, impulsivity is seen.

Depression-related cognitive dysfunction

- Also known as Pseudodementia.
- Prominent depressive symptoms.
- More insight into their symptoms.
- Responds to antidepressant treatments.

Assessment

- Mini-mental state examination:
  - Screening tool
  - A score of less than 24 out of a total of 30 is suggestive of dementia.
  - It was developed by Folstein et al.
  - It includes tests of:
    - → Orientation: It comprises 10 marks, which includes the identification of year, day, month, country, etc.
    - → Registration: It compromises 3 marks.
    - → Recall: In this, the patient is asking to remember the same 3 objects that were shown 5 minutes earlier. It comprises 3 marks.
    - → Concentration: It comprises 5 marks.
    - → Language: It is also considered a test of executive functions. It comprises 9 marks.

Treatment

Pharmacotherapy

- Cholinesterase inhibitors:
  - It is the reversible inhibitor of the enzyme acetylcholinesterase.
  - It is used in the treatment of Alzheimer's disease.
  - Some of the drugs used are Donepezil, rivastigmine, and galantamine.
- Memantine:
  - It is an NMDA Antagonist.
  - It is used in moderate to severe Alzheimer's disease.
  - It is used as monotherapy as well as in combination with Donepezil.
  - It can be used for other dementias for cognitive symptoms such as Lewy body disease, vascular dementia.
- Some of the new drugs are:
  - Aducanumab: It is a human IgG1 monoclonal antibody. It is given as an IV infusion which makes it a target-oriented drug.
  - Lecanemab: Amyloid-directed antibody. Also given as IV infusion.
- For behavioral and physiological symptoms:
  - Antidepressants, such as SSRI, can be used.
  - Antipsychotics can also be used, which helps in delusion, agitation, and hallucination.
  - Second-generation antipsychotics include Risperidone, and Olanzapine.
  - Clozapine has been used to treat psychotic symptoms.
  - The first generation of antipsychotics needs to be avoided.
  - Benzodiazepine can also be used for agitation, insomnia.

Nonpharmacological

- Behavioral management.
- Cognitive retraining
- Psycho education

Amnestic disorders 01:29:44

Memory impairment:

- Recent memory: Inability to learn new information, it is known as anterograde amnesia.
- Reduced ability to recall past events, it is defined as retrograde amnesia.
- Immediate memory remains intact, consciousness remains intact, and global intellectual decline is also not affected.
- Causes:
  - CNS:
    - → Seizures
    - → Head trauma
    - → Hypoxia
    - → Tumors
    - → Electroconvulsive therapy
    - → Multiple sclerosis
  - Systematic:
    - → Thiamine deficiency (Korsakoff syndrome)
    - → Hypoglycemia
    - → Substance related like alcohol, benzodiazepine

Treatment

- Treat the underlying cause.
- Psychotherapy.

Frontal lobe Syndrome 01:32:16

- Frontal lobe is the largest slope of the human brain.
- This syndrome leads to disorders of cognition, mood, motivation, as well as behavioral control.
- Three important syndromes are seen:
  - **Orbitofrontal syndrome:**
    - → It is a disorder of the orbitofrontal cortex.
    - → Disinhibited behavior
    - → Impulsiveness
    - → Limited insight
    - → Poor judgment
  - **Dorsolateral syndrome:**
    - → It is a disorder of the dorsolateral prefrontal cortex.
    - → Also known as Frontal convexity syndrome.
    - → Deficit in recall of previously learned information.
    - → Impaired planning
    - → Impaired attention and concentration
    - → Depression may also be seen

- **Medial frontal syndrome:**
  - → Apathy (Lesion involves anterior cingulate cortex.).
  - → Poor motivation
  - → Decrease interest
  - → Decrease emotional concern

10 SLEEP DISORDER

Sleep disorder

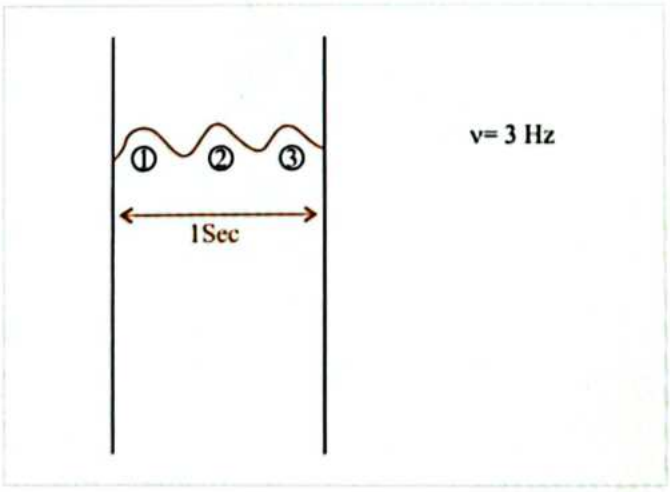
- Sleep is made of 2 physiological states
  - **NREM:** Non-Rapid Eye Movement.
  - **REM:** Rapid Eye Movement.
- Once the person falls asleep, the 1st stage occurs is NREM sleep and after some time the person reaches the 1st REM. Again the person reaches NREM and then REM. The cycles alternate.
- REM Latency – time taken from the NREM to the 1st REM is known as REM Latency.
- Normally the 1st REM is reached at 90 min. There are certain conditions in which the REM is achieved earlier. There is a shortening of REM Latency.
  - Narcolepsy
  - Depression

EEG (Electroencephalogram) 00:02:30

- It is the recording of the electrical activity of the brain. The electrodes are placed on the scalp and the potential difference is recorded.

Frequency

- It is the number of waves that occur in a second.
- **To calculate the frequency:** the distance between 2 vertical lines is 1 sec and in this 1 sec the number of waves is counted. E.g., if 3 waves are seen, the frequency will be 3Hz.



Important Waves seen in EEG in Humans

Delta Waves (δ)

- Seen in deep sleep which is also known as Delta sleep.
- It is also seen in infants.
- The frequency of these waves is around 0.5-3Hz.
- The amplitude or the micro voltage of these waves is quite high. It may be ≥75μV.
- These waves are seen in slow wave sleep or deep sleep or delta sleep.

Theta Waves (θ)

- It is the transition from wakefulness to sleep.
- It is the 1st wave that is encountered in sleep.
- These are also seen in children.
- The frequency of these waves is 4-7Hz.
- These are low-voltage waves.
- They are prominently seen in the temporal and parietal regions.

Alpha Waves (α)

- Seen at rest – When the person is awake but the eyes are closed. The frequency of these waves is 8-13Hz.
- These are also low-voltage waves.
- They are seen in occipital and parieto-occipital areas.

Beta Waves (β)

- Seen in a fully awake person (eyes open).
- The frequency is higher (14-30Hz).
- These are low-voltage waves.
- They are present in the frontal and parietal areas.

Sleep Stages 00:08:57

- **Sleep stages are characterized by 3 parameters:**
  - EEG (Electroencephalogram): Measures the electrical activity of the brain.
  - EOG (Electrooculogram): Measures the activity of eye movements.
  - EMG (Electromyogram): Measures muscle activity.
- Sleep is scored in Epochs of 30 seconds.

Distribution of Sleep in Young Adulthood

- The normal duration of sleep is 7-9 hours. In a young adult, this may decrease.
- The duration of sleep decreases in the elderly age and increases at a young age.
- **Sleep is divided into 2 stages.**
  - NREM
  - REM
- **NREM:** NREM is further divided into 3 stages
  - Stage 1: N1 stage
  - Stage 2: N2 stage
  - Stage 3 and Stage 4: Stages 3 and 4 have been combined into one stage known as the N3 stage.

- **REM**
- Overall, in NREM, about 75% of the time is spent in sleep and 25% is spent in REM.
- In the N1 stage, around 5% of the time is spent in sleep.
- In the N2 stage, 45% of the time is spent in sleep.
- In the N3 stage, 25% of the time is spent in sleep.
- The maximum time is spent in the N2 stage.

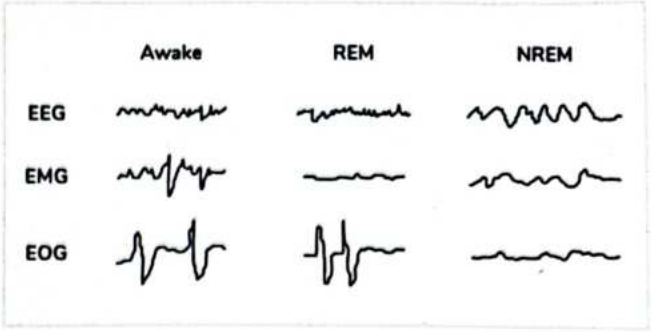
Various Stages of Sleep and Important Changes in EEG, EOG, AND EMG

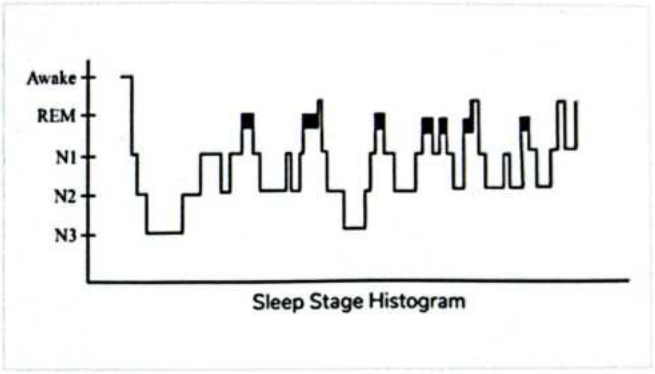
NREM

- When the person is awake (known as stage W)
  - EEG: Will show alpha waves (8-13Hz) with eyes closed.
  - EOG: The eye movements and eye blinks are present.
  - EMG: High tonic activity and voluntary movements are seen because the person is awake.
- When the person falls asleep and reaches the N1 stage
  - EEG: There is a loss of alpha waves because the person has transitioned to sleep. There will be theta waves of 4-7Hz.
  - EOG: There will be slow eye movements.
  - EMG: The tonic activity decreases.
- When the person reaches the N2 stage
  - EEG: There are 2 important EEG findings N2 stage:
    - → Sleep spindles: a burst of waves of 12-14Hz are seen.
    - → Presence of K complexes: these are negative sharp waves followed by positive waves.
  - EOG: The EOG activity will be none.
  - EMG: Muscle tonic activity will be very low.
- When the person reaches the N3 stage (Deep sleep)
  - EEG: Delta waves (slow waves) will be seen. The amplitude will be high.
  - EOG: The activity will be none.
  - EMG: Low tonic activity is seen.

REM: Rapid Eye Movement (Paradoxical sleep)

- EEG findings
  - The EEG activity is increased similarly to the awake state (beta activity) along with the return of alpha activity.
  - There is a typical appearance of these waves seen which is known as Sawtooth waves or Sawtooth appearance. The appearance of these waves is Sawtooth.
  - Paradoxical sleep: even though the person is sleeping the EEG shows activity similar to the awake state.
  - PGO (Ponto Geniculo Occipital) spikes are also seen. These are large phasic potentials that originate from Pons (the cholinergic neurons) and go towards the lateral geniculate body and to the occipital spikes.
- EOG: Rapid eye movements are seen.
- EMG: There is tonic atonia (as if the muscle is in paralysis) with phasic twitches.





- Sleep occurs in cycles of NREM and REM.
- The total of each cycle lasts 90-110 min.
- Usually, 4-6 REM periods occur each night.

Differences Between NREM and REM

NREM

- It is known as orthodox or conventional sleep
- Brain activity & physiological activity like pulse rate, respiratory rate, and BP are lower than in the awake state.
- If there is any movement, then it is a disorder of NREM.
- Minimal variations are there in parameters such as pulse rate, respiratory rate, and BP. That is why it is known as synchronized sleep.
- There is a Pulsatile release of Gonadotropins and Growth hormones.
- Body movements are present.
- Penile erection is absent.
- Dreams are not remembered.
- Disorders: somnambulism, night terror, bruxism, nocturnal enuresis, somniloquy

REM

- It is a paradoxical sleep (the person is asleep but the EEG is showing the activity of the active day).
- Brain activity and physiological activity area increased or same as in the awake state except for the muscle tone (the muscles are in the state of paralysis).
- As there are lots of variables in REM, it is known as desynchronized sleep.
- Body movements are absent.

- Penile erection is present.
- Dreams are remembered.

Sleep-Wake Disorders 00:24:42

Dyssomnia

- They are characterized by abnormality of either the quantity of sleep or the quality of sleep.
- **There are two dyssomnia:** Insomnia and Hypersomnia.

Insomnia

- It is the difficulty in sleeping.
- The abnormalities in insomnia are:
  - Initial Insomnia: Sleep initiation is difficult. It takes time to fall asleep.
  - Middle Insomnia: – There is difficulty in maintaining sleep. The person wakes up many times in between.
  - Late Insomnia: When the person wakes up early morning (at least two hours before the usual wake-up time). Early morning awakening is one of the characteristics of depression.
- Non restorative sleep: The duration of sleep is same but the person doesn't feel fresh in the morning due to poor quality of sleep
- **Types of Insomnias**
  - Primary Insomnia: No cause found. Insomnia is the only symptom.
  - Secondary Insomnia: Caused due to some other disorders like psychiatric disorders and depression.
- **Treatment**
  - Pharmacotherapy
    - → Drugs such as Benzodiazepines, Zolpidem, and Zaleplon are helpful.
    - → Other sedative drugs may also be used.
  - Psychotherapy
    - → Cognitive Behaviour Therapy (CBT) – Cognitive therapies are used to overcome misperceptions and disruptive thoughts about sleep.
    - → Certain behaviour techniques such as universal sleep hygiene are used to improve sleep.
- Universal sleep hygiene – Certain modifiable environmental and lifestyle components are focussed on to improve. The dos and don'ts of Universal Sleep Hygiene are as follows:
  - Do's
    - → Maintain fixed sleeping and waking time.
    - → If the person feels hungry at night, eat a light snack before sleep.
    - → A regular exercise schedule should be maintained.
    - → Unwind everything one hour before sleep.
    - → Keep the room cool, dark, and quiet.
  - Don'ts
    - → Taking naps.
    - → Eating a heavy meal before sleeping.
    - → Exercise before sleep.
    - → See the time when unable to sleep.
    - → Use alcohol and smoke cigarettes.
    - → Reading, eating, watching TV, and talking on the phone in bed.

Some Disorders Associated with Insomnia

1. Restless Leg Syndrome (Ekbom Syndrome)

- There is an irresistible urge to move the legs when the person is at rest or while trying to fall asleep.
- There is an uncomfortable sensation in the legs such as insect crawling which gets relieved by moving or walking around.
- It can cause difficulty in sleep initiation as the patient keeps on moving the legs. It can lead to secondary insomnia.
- Uremia, Neuropathies, and Iron and Folic acid deficiencies can cause secondary RLS.
- Ferritin levels should be checked in all the patients of RLS.
- Treatment – Three Dopamine agonists have been approved by the FDA for RLS treatment.
  - Pramipexole
  - Ropinirole
  - Rotigotine

2. Periodic Limb Movement Disorder (PLMD)

- There is a sudden contraction of a group of muscles usually the leg while sleeping.
- These are primarily seen in NREM.
- They can lead to brief arousals from sleep and cause insomnia.
- A person may not be aware of these contractions because they may occur in sleep but the partners sleeping next to the person may frequently get disturbed.
- It can occur in association with folic deficiencies, renal disease, and anemia.
- Treatment – Benzodiazepines may be used which are sufficient for the treatment of PLMD.

Hypersomnia

- There is excessive sleepiness.
- There may be prolonged sleep episodes.
- There may be excessive daytime sleepiness.
- Types
  1. Primary Hypersomnia – no cause found.
  2. Secondary Hypersomnia – due to some other disorders

Disorders Associated with Hypersomnia

- **Narcolepsy**
  - The intrusion of REM sleep into wakefulness.
  - It usually begins in the second decade (between 10 and 20 years).
  - Symptoms – Tetrad of symptoms:
    1. Sleep attacks

→ This is the most common symptom.
→ There is a strong urge for excessive daytime sleepiness.

2. Cataplexy
→ There is a sudden loss of muscle tone. The person is standing and suddenly may fall (the person is awake).
→ It is triggered by emotional outbursts commonly with laughter.
3. Sleep Paralysis
→ The person wakes up but is unable to move the body.
4. Hypnagogic and Hypnopompic hallucinations
→ These hallucinations occur at a specific time.
→ These can be auditory, or visual.
→ Hypnagogic occurs when the person is going to sleep. The person falls asleep and experiences some hallucinations.
→ Hypnopompic occurs when the person comes out of sleep.

- Reduced REM latency.
- **Causes:**
  1. Deficiency of Hypocretin (Orexin) neurotransmitter of the hypothalamus in the brain which is required for alertness.
  2. There is a strong association with human leukocyte antigens Class II (specially HLADR2 and HLADQB 06:02).
  3. It is believed that it is an autoimmune process that leads to the destruction orexin producing neurons which lead to the development of Narcolepsy.
- **Types**
  1. Type-1 Narcolepsy
     → The patient has Narcolepsy with Cataplexy.
     → Low levels of Hypocretin are seen.
  2. Type-2 Narcolepsy
     → The patient has Narcolepsy without Cataplexy.
     → Hypocretin levels are normal. It can be induced by traumatic brain injury damaging orexin-producing neurons.
- **Treatment** - usually there is no cure but there are symptomatic treatments.
  1. Pharmacotherapy
     → Modafinil is the first-line treatment for the management of hypersomnia. It is a stimulant that helps the patient to be awake.
     → It is an Alpha1 agonist which helps in improving hypersomnia.
     → For cataplexy, antidepressants can be used that increase the norepinephrine or serotonin tone (suppress the REM sleep).
     SSRI and Venlafaxine can also be used.
     → Sodium Oxybate is also found to be effective in managing Cataplexy.
  2. Regimen of forced naps at regular intervals
     → The person is asked to take regular naps during the daytime so that those urges for sleep decrease and the patient may not sleep at a certain part of the day.

- **Klein-Levin Syndrome**
  It is a rare disorder seen more in males and usually seen in early adolescence.
  - Symptoms
    1. Hypersomnia - excessive sleepiness.
    2. Hyperphagia - the patient may eat a lot.
    3. Hypersexuality - increase in sexual activities.
    4. Disinhibition - behaviours like aggression may be seen.
- In between the episodes, the patient may be asymptomatic.

Parasomnias

- Parasomnias are disorders of partial arousal.
- These are physiological or behavioural phenomenon that occurs during or is potentiated by sleep.
- In Parasomnias, there is an overlap or intrusion of one state into the other. One state tries to intrude into the other state.
- Parasomnias can be:
  - NREM-related Parasomnias
  - REM-related Parasomnias

NREM-Related Parasomnias

1. **Somnambulism/Sleepwalking**

- Usually occurs in the N3 stage (slow wave sleep).
- The person may engage in some motor behaviour while the person is unconscious. E.g., the person may start moving or may be involved in some complex behaviour like opening the door and going downstairs.
- These patients are difficult to awaken.
- They may appear confused if awaken and react violently.
- These are common in children and usually disappear after adolescence.
- Many times, in these disorders, a specifier may also be added which is a sleep-related eating disorder.
- They are unconscious while doing these activities.
- Treatment
  - Reassurance – as seen in many of the cases it disappears spontaneously.
  - Benzodiazepines may be used - they decrease the NREM stage.

2. **Sleep terrors/Night terrors**

- There is a sudden arousal with fearfulness. The person may scream or cry or there may be panic symptoms.
- They may appear confused when awakened.
- They are unable to recall any dream.
- Usually occurs in the N3 stage (slow wave sleep).

3. **Bruxism/Teeth grinding**
- The person grinds the teeth and makes a loud sound which may damage the enamel
- Treatment
  - The patient is asked to wear some oral appliances such as a mouth guard to protect the teeth.

4. **Somniloquy/Sleep talking**
- The person talks during sleep and is unable to recall in the morning.

5. **Sleep Enuresis/Bed wetting**
- The person urinates during sleep while in bed.
- **There are 2 forms:**
  - Primary – when there is a continuance of bed wetting since infancy.
  - Secondary – when there is a relapse after toilet training was completed with a period when the child remained dry.
- Usually, bed wetting resolves before 6 years of age.
- **Treatment**
  - Behavioural techniques can be used such as Bell and Pad/Bell alarms are the treatment of choice.
  - Pharmacotherapy
    - → Desmopressin is the drug of choice – also available as intranasal.
    - → Other drugs like Imipramine and Oxybutynin are also used for the management.

REM-Related Parasomnias

1. **Nightmare Disorder**
- There is a sudden arousal and fearfulness.
- The person can recall any dream.
- Treatment
  - Behavioural techniques may be used.
  - Benzodiazepines may also be helpful.

2. **REM-Sleep Behavioural Disorders**
- This is the failure of the patient to have atonia (paralysis in sleep) leading to the enacting of dreams like punching and kicking.
- The person seems unaware of the environment. They may even fall.
- Treatment
  - Clonazepam is one of the Benzodiazepines that are used in management.

Assessment

00:55:40
00:55:07

- Some important techniques which are used in the assessment of sleep disorders are:

Polysomnography

- It is the recording of the physiological activity during sleep.
- This takes 6-8 hours for 1 test.
- EEG, EOG, EMG, and ECG are recorded.
- Nasal, oral flow, and nasal pressure are recorded.
- The respiratory effort (thoracic and abdominal) is also measured.
- Pulse oximeter and heart rate are monitored.
- Any activities in the leg or arms are also monitored.
- Body positions are noticed.
- Snoring is observed.

Actigraphy

- Measures and records movements.
- It is worn on a wrist like a wristwatch.
- It is used to measure sleep-wake cycles.

Important Information

Sleep-wake disorders in ICD-11 have been removed from Mental, behavioural, or neurological developmental disorders and placed in a separate chapter.

Clinical Questions

Q. Which waves are seen in the transition from wakefulness to sleep?
Ans. Theta waves

Q. PGO is seen in which stage?
Ans. REM stage.

Q. What is Paradoxical sleep?
Ans. Even though the person is sleeping the EEG is showing activity similar to the awake state.

Q. What is Tonic Atonia?
Ans. It is the state which shows as if the muscle is in paralysis.

Q. What is the N3 stage of NREM called?
Ans. Deep sleep stage.

Q. What are the two types of sleep-wake disorders?
Ans. Dyssomias and Parasomnias.

Q. What are the types of Dyssomnias?
Ans. Insomnia and Hypersomnia.

Q. What are the disorders associated with Insomnia?
Ans. Restless leg syndrome, Periodic limb movement disorder.

Q. What are the disorders associated with Hypersomnia?
Ans. Narcolepsy and Klein-Levin syndrome.

Q. What are the NREM-related Parasomnias?
Ans. Somnambulism, Sleep terrors, Bruxism, Somniloquy, and Sleep Enuresis.

Q. What is Actigraphy?
Ans. It is a technique used to measure and record movements.

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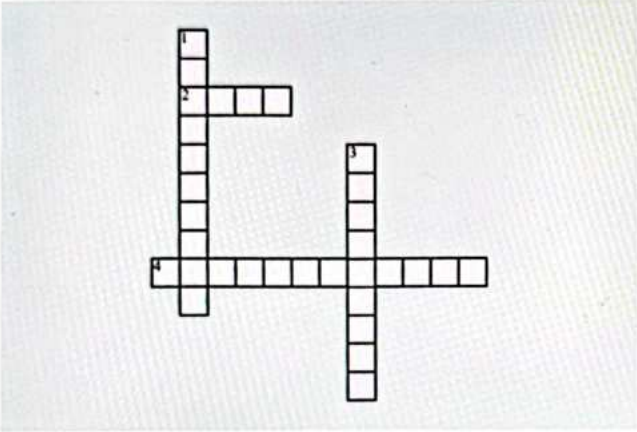
CROSS WORD PUZZLES

Crossword Puzzles 1



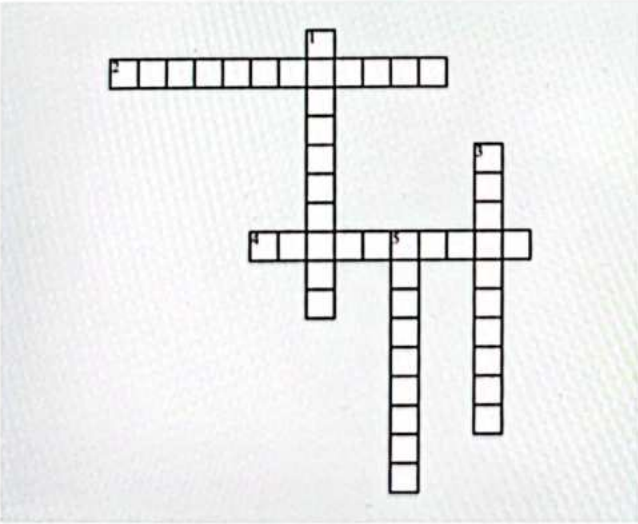
Across

2. _____ measures the electrical activity of the brain.
4. _____ is excessive sleepiness.

Down

1. _____ Frequency is the number of waves that occur in a second.
3. _____ is the difficulty in sleeping.

Crossword Puzzles 2



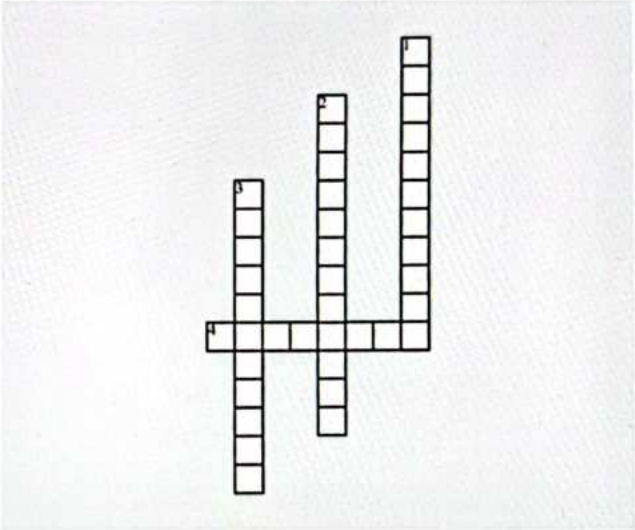
Across

2. _____ is a condition in which the person eats a lot.
4. _____ is characterized by either the quantity or the quality of sleep.

Down

1. _____ is the intrusion of REM sleep into wakefulness.
3. _____ is the sudden loss of muscle tone.
5. _____ is the stimulant that helps the patient to be awake.

Crossword Puzzles 3



Across

4. _____ is also known as teeth grinding.

Down

1. _____ Somniloquy is also known as sleep talking.
2. _____ is the disorder of partial arousal.
3. _____ is a technique that measures and records the movements.

11 SEXUAL DISORDERS

Phases Of Sexual Response Cycle 00:00:18

- When a couple engages in sexual activities, the following are phases that the person experiences.

Desire Phase

- It is the first stage, which includes sexual urges, sexual wishes.
- A person who has difficulty in the desire phase may have hypoactive sexual desire disorder.

Excitement (Arousal) Phase

- It includes subjective feelings of sexual pleasure and accompanying physiological changes (like increase in heart rate, blood pressure, and sweating).
- It also includes important physiological changes which occur in males and females:
  - **Males:** penile erection, elevation and enlargement of testis
  - **Females:** vaginal lubrication, nipple erection, enlargement of labia minora, clitoris.
- Erectile dysfunction is a disorder of this phase in males.

Orgasm Phase

- It is the smallest stage and lasts for 3 to 15 seconds. It is basically the peak of sexual pleasure.
- In case of abnormality related to this stage, changes occur in
  - **Males:** ejaculation of semen occurs.
  - **Females:** involuntary contraction of lower 1/3rd of vagina and contraction of uterus.
- Premature ejaculation and anorgasmia are disorders of this phase.

Resolution (10-15 Min)

- The body goes back to the resting stage.
- In absence of orgasm, it may last for half to one day.

Refractory Period

- Following orgasm, men experience a refractory period during which they cannot be restimulated to further arousal.
- Women don't experience refractory periods and can experience multiple, successive orgasms.

Sexual Dysfunctions 00:05:10

i. In sexual dysfunction, there is inability to participate in a sexual relationship as one would wish to.
ii. Disorders include:

Sexual desire disorders

i. Hypoactive sexual desire disorder

- There is deficient or absent sexual desire for sexual activity.
- Sexual aversion disorder is generally active aversion and avoidance of sexual activity.
- In DSM-5, sexual aversion disorder is removed and clubbed with hypoactive sexual desire disorder.
- Flibanserin is the first drug approved by the FDA to treat hypoactive sexual disorder in females.

Disorders of excitement (arousal) phase

i. Male erectile disorder (Erectile dysfunction)

- There is a marked difficulty in obtaining or maintaining erection during sexual activity for sexual intercourse.
- It is seen in > 50% of all men treated for sexual disorders.
- It can be caused by:
  - **Psychogenic erectile dysfunction**
    → Caused by psychological factors such as anxiety, marital problems.
    → More common
  - **Organic erectile dysfunction**
    → Caused by medical causes such as diabetes mellitus, arteriosclerosis, neurological disorders.
    → More common in older age (especially in >60 age).

- **Psychogenic erectile dysfunction can be differentiated from organic erectile dysfunction by the following characteristics:**

Psychogenic erectile dysfunction experiences

- Early morning erections and nocturnal erections (experienced in the REM stage).
- If the person with psychogenic erectile dysfunction would experience these erections such as early morning erections and nocturnal erections because there is no problem in the anatomy while organic erectile the person would report of not experiencing or significantly decreased experience of such erections.

Certain investigations are also used to record nocturnal erections such as

- Nocturnal penile tumescence
- Penile plethysmography (which measures blood pressure in penis).

Treatment

- **Pharmacotherapy:**
  - Phosphodiesterase-5 inhibitors (PDE-5 inhibitors):
  - These are Nitric oxide enhancers and facilitates the blood flow into the penis and enhances erection.

- Sildenafil, tadalafil, and vardenafil are the drugs that fall under this category.
- These drugs should not be used along with organic nitrates, which can cause sudden fall in blood pressure that may lead to fatal for the patient.

Other medications include:

- Oral phentolamine: these may reduce sympathetic tone and relaxes muscles of corpora cavernosa and subsequently improve the erection.
- Alprostadil contains naturally occurring prostaglandin E1, which is a vasodilating agent.
- Alprostadil can be directly injected into corpora cavernosa or can also be given intraurethrally through a cannula as a pellet.

- **Psychotherapy**
- Dual sex therapy (sex therapy)
  - It was derived by Masters and Johnson.
  - It is also effective for other sexual disorders as well.
  - It means it treats the couple (not individual). Both the partners are involved in the treatment.
- Couples is taught:
  - To improve their communication.
  - Exercises to increase sensory awareness.
- **Exercises/sensate focus exercises**
  - It has two stages:
    - → Non genital sensate focus
    - → Couples should touch, rub, or kiss on each other body parts excluding breasts, and genitals. Hence the focus is on non-genital parts.
  - Genital sensate focus
    - → It is the II stage, where breasts and genitals are involved. Subsequently, the couple can engage in complete intercourse.
  - Purpose of exercises is to make the couple aware that pleasure can be given and received by methods other than sexual intercourse (penetration).
- Other psychotherapies which can be used in the management of sexual disorders are
  - Behavioral therapy
  - Hypnotherapy
  - Psychoanalysis

ii. Female arousal disorders

- It is characterized by inability to achieve adequate vaginal lubrication which is required for sexual intercourse.
- In females during the excitement phase, if vaginal lubrication is not properly achieved leads to female arousal disorders.
- **Management**
  - Use of lubricants during the intercourse.
  - DSM-5 has done one change by introducing one single term that is female sexual interest/arousal disorder. It has combined the interest (or desire) and arousal into one dysfunction category, as females may not necessarily move step wise from desire to arousal.

Disorders of orgasm phase

i. Premature ejaculation (PME)

- There is a pattern of persistent or recurrent ejaculation with minimal sexual stimulation before or immediately after vaginal penetration.
- DSM-5 impact also given a duration
  - Ejaculation occurs within < 1 minute following vaginal penetration; it is described as PME.
  - Cause of PME is usually psychogenic.

Treatment

Psychotherapy

- Two important behavioral techniques were found to be very effective treatment for PME.
  - **Squeeze technique**
    - → It is given by Masters and Johnson.
    - → In this technique, when male partner gets a feeling of impending ejaculation, he or his partner squeezes the coronal ridge of glans. Resulting in inhibition of ejaculation.
    - → If it is done 2 or 3 times and subsequently in the fourth time the person can indulge into complete intercourse.
    - → Basically, it raises the threshold of penile excitability.
  - **Stop-start technique**
    - → It is given by Semans and this technique is known as semans technique.
    - → When male partner gets a feeling of impending ejaculation, sexual activity is stopped for some time, and restarted once excitement has decreased.
  - **Dual sex therapy** is also effective for PME.

Pharmacotherapy

- Selective serotonin reuptake inhibitors (SSRI) are used.
- One of the side effects of SSRI is they can delay ejaculation. Due to these side effects, they are used for treatment for premature ejaculation.

ii. Female orgasmic disorder (Anorgasmia)

- There is recurrent delay or absence of orgasm in females.
- It is a common sexual disorder in females.

Treatment

- Psychotherapy
- Sometimes vibrators may be helpful to stimulate clitoris.

iii. Delayed Ejaculation

- It is a disorder of the orgasmic phase.
- It is a recurrent delay or absence of orgasm in males.
- It is less common than PME.

Treatment

- Psychotherapy: It was found effective

iv. Other disorders

- **Dyspareunia**
  There is recurrent or persistent genital pain in women, before/during/after sexual intercourse.
- **Vaginismus**
  It is involuntary muscle construction of the outer third of vagina which makes penile insertion difficult.

- **Treatment**
  - Dilating vagina (or) opening with fingers or with dilators.
  - Dilators may also help in dyspareunia.
  - As vaginismus and dyspareunia frequently coexist, DSM-5, has made a single entity that is genito-pelvic pain/penetration disorder.
  - So pain suggests dyspareunia and difficulty in penetration suggesting vaginismus. So it is clubbed into a single entity.
- **Nymphomania**
  - In nymphomania there is excessive sexual desire in females.
- **Satyriasis**
  - It is excessive sexual desire in males.

Disorders of Sexual Preference (Paraphilias/Perversions)

00:22:06

- These disorders are characterized by sexual stimuli or acts that deviate from normal sexual behaviors. But they are necessary for some persons to experience orgasm or arousal.
- Some important paraphilias are:

Fetishism

- Sexual focus or sexual arousal on objects (e.g., shoes, gloves) which are intimately associated with human body or non-genital body parts.
- Arousal by non-genital body parts is known as partialism.
- This is almost exclusively found in men.

Exhibitionism

There is a recurrent urge to expose genitals to strangers or an unsuspecting person.
Almost exclusively found in men.

Transvestism

Previously it was known as transvestic fetishism. Where trans means opposite and vest means clothes
Persons dressing in opposite gender clothes for sexual pleasure.
This is also known as eonism.

Frotteurism

Recurrent sexual arousal by a man's touching or rubbing against a non-consenting person in public.

Voyeurism

Recurrently observing, unaware people undressing or engaged in sexual or intimate behavior.
Voyeurism is also known as scopophilia.

Pedophilia

There is recurrent sexual urges towards children (age < or = 13 years).
Person with pedophilia are at least 16 years of age and at least 5 years older than the victim.
Pedophilia is the most common paraphilia.

Masochism

There is recurrent sexual arousal from being humiliated, beaten, bound, or made to suffer.

Sadism

There is recurrent sexual arousal from physical or psychological suffering of another person.

Other paraphilic disorder

i. **Necrophilia**
   It is obtaining sexual gratification from corpses/cadavers.
ii. **Zoophilia**
   Sexual arousal from animals.
iii. **Telephone and computer scatologia**
   Sexual arousal involving obscene phone calls or obscene messages/images to unsuspecting persons.
iv. **Coprophilia**
   The person is getting sexual pleasure associated with desire to defecate on a partner/to be defecated on/eat feces.
v. **Urophilia**
   The person is getting sexual pleasure associated with desire to urinate on a partner/ to be urinated on.
vi. **Klismaphilia**
   The person is getting sexual pleasure associated with the desire by use of enemas for sexual pleasure.

Treatment

Treatment of these paraphilic disorders is psychotherapy.

i. **Cognitive behavior therapy (CBT)**

- It is one of the important psychotherapy treatments.

Gender Identity Disorders 00:28:58

Different terms used in DSM-5 and ICD-11.
DSM-5 uses the term Gender Dysphoria.

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ICD-11 used the term Gender Incongruence.
Gender identity is a sense one has of being male/female, which corresponds most often to a person's anatomical sex.

Gender identity disorder of childhood

There is marked incongruence between expressed gender (anatomical gender which the person has, but the person ethe xperiences the expression of other gender) and assigned gender.
It occurs usually in prepubertal children.
There is a strong desire to be of the other gender.
Preference for cross dressing, for toys or games engaged by other gender.
May have a dislike of one's sexual anatomy.

Transsexualism

The person desires to live and be accepted as a member of the opposite sex.
Usually accompanied by a sense of discomfort with, or inappropriateness of one's own anatomical sex.
Usually develops in Adolescence/adulthood.
Persons wish to have hormonal treatment and surgery to make one's body as congruent as possible with preferred sex.
Patient may say "I am a man trapped in the body of a woman".
Transsexual identity should have been present for at least 2 years.

Dual role transvestism

In this case, a person temporarily wears clothes of the opposite gender, to feel the other gender but not desiring sex change.
It is also different from transvestism (which is a paraphilia), where there is sexual arousal with cross dressing. But in dual role transvestism no sexual arousal with cross dressing.

Treatment

Gender related issues in children:
Individual, family and group therapy is done to help children explore their gendered interests and identities.
Especially in adults, hormonal therapy is preferred.
Hormone treatment is preferred, to get their anatomic gender as close as possible to other gender.

- Testosterone therapy may be given in females, that increases muscle mass, there is cessation of menses, there is deepening of voice. (so anatomically females want to be as close as possible towards the male)
- Estrogen, progesterone therapy, and testosterone blockers are given in men, this may help to increase breast growth and decrease erection and ejaculation.
  In case of patients insisting for sex change, sex reassignment surgery can be done.

In anatomical male

- There is removal of penis, scrotum and testis, construction of clitoris, labia and vagina is done.

In anatomical female

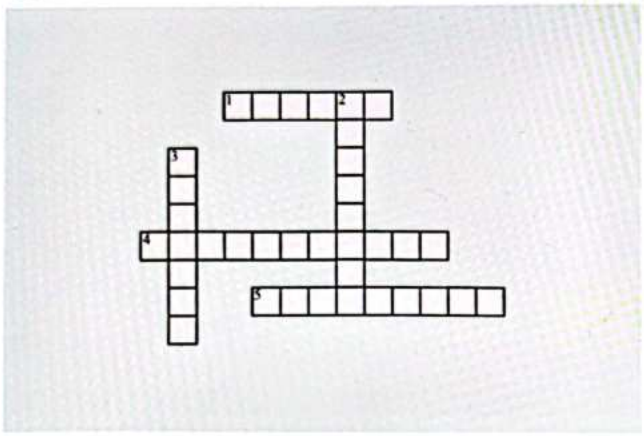
- There is bilateral mastectomy, hysterectomy, removal of ovaries, and construction of penis is done.

Hormonal therapy is also accompanied with this surgery.

ICD-11 has removed these sexual disorders and gender identity disorders from mental, behavioral or neurodevelopmental disorders and placed in a separate chapter 'Conditions Related To Sexual Health.'

CROSS WORD PUZZLES

Crossword Puzzles1



Across

1 .....phase is the peak of sexual pleasure.

4 .....is the first drug approved by FDA to treat hypoactive sexual disorder in females.

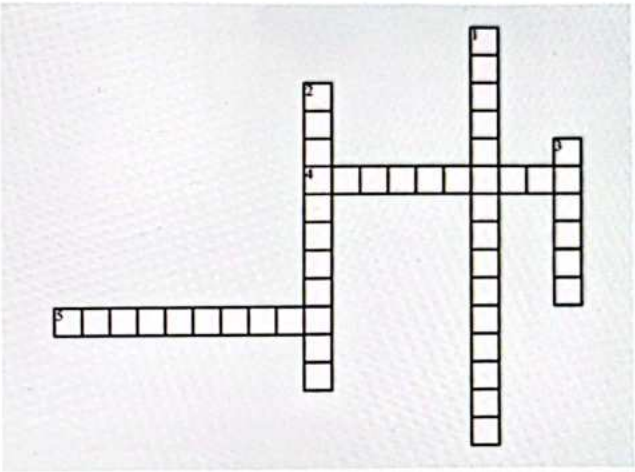
5 .....also known as Scopophilia.

Down

2 **.....technique raises the threshold of penile excitability.**

3 **..... therapy was derived by Masters and Johnson.**

Crossword Puzzles2



Down

1 .....should not be given in combination with PDE-5 inhibitors.

2 .....means excessive sexual desire in females.

3 .....means sexual arousal from suffering in the second person.

Across

4 .....means sexual urge towards children of age < or =13 years.

5 .....stage body goes back to resting stage.

12 EATING DISORDERS

Anorexia Nervosa

00:00:22

- Anorexia: Loss of appetite
- But this is a misnomer because usually, the appetite in these patients is normal.
- More common in females - Females : Male : 10:1.
- Age of onset: 14 to 18 years.

Clinical Features

- Restriction of energy intake resulting in low body weight than normal.
  - ICD-11, Body Mass Index (BMI)
    → <18.5 kg/m^3 in adults
    → Under 5th percentile in children and adolescents
- Intense fear of weight gain or obesity
- Disturbance of body image (under influence of body weight or shape on self-evaluation).
  - Inaccurately perceived to be normal or fat.
- Amenorrhea
  - Previously a necessary criteria to diagnose.
  - But it is removed from DSM-5 and ICD-11 as necessary criteria.
  - Anorexia Nervosa can be diagnosed in absence of amenorrhea.
- Peculiar behavior about food such as:
  - Hiding food
  - Trying to dispose of food in napkins.
  - Spending time rearranging the food plate.
  - Collecting recipes and preparing meals for others.
- Delayed sexual development.
- Adults may show decreased interest in sexual activities.

Medical Complications Secondary to Starvation

- **Major**
  - Hypothermia
  - Bradycardia
  - Hypotension
  - Lanugo hair (neonatal-like hair)
- **May have**
  - Peripheral edema
  - QT_c prolongation
  - Muscle atrophy
  - Brain atrophy
- **Other complications**
  - Delayed gastric emptying
  - Constipation
  - Decreased bone mineral density

Endocrine changes

- **Decrease:** LH, FSH, Estrogen, Testosterone, T_4, T_3.
- **Increase:** Reverse T_3, Cortisol.
- **Normal:** TSH.

Types of Anorexia Nervosa

- **Restricting type**
  - Seen in 50% of the patients
  - Restricting food intake
  - Do excessive exercises
- **Binge Eating/Purging subtype**
  - Alternate attempts at rigorous dieting along with intermittent binge eating and purging episodes.
  - Binge Eating/Purging is also seen in Bulimia Nervosa.

Binge Eating

- Intake of large amounts of food in a short duration.
- Associated with feeling of lack of self-control.

Purging

- Patients may perform compensatory methods for excess calorie intake.
- **Includes**
  - Vomiting
  - Use of Laxative, Diuretics, or Emetics
  - May do excessive exercises
- **If the patient performed repeated vomiting, it may lead to some complications:**
  - Dental caries
  - Parotitis or salary gland swelling
  - Hypokalemic alkalosis
  - Electrolyte imbalance
  - Russell sign (calius on knuckles)

Comorbid Psychiatric Disorders with Anorexia Nervosa

- **Most common:** Depression.
- **Others:** Social phobia, OCD (obsessive-compulsive disorder).

Course and Prognosis

- High mortality rate, as high as any psychiatric illness.
- Mortality is six times more than the general population.

- **Cause of Death**
  - Most common: Medical complications, low weight, and malnutrition.
  - Suicide is another cause of death.
- **Predictors of Good Outcome**
  - Shorter duration of illness in adolescents.
  - Full restoration of weight in inpatient treatment.
  - Maintaining weight in the first month after discharge (if a decrease in weight in the first month is seen, it is a bad predictor).
  - Consuming a high energy density diet prior to discharge.

Treatment

- Patients are often secretive.
- They may deny their symptoms and resist the treatment.
- Hospitalization may be needed in:
  - Restoring nutritional status.
  - Managing complications like
    → Dehydration
    → Electrolyte imbalances (↓Na, ↓K, ↓Cl).
- **Hospitalization criteria**
  - Short term: 20% below the normal weight for height.
  - Long-term psychiatric hospitalization: 30% below the normal weight for height.
- **Treatment goal**
  - Nutritional rehabilitation and weight restoration
    At start 1500-1800 Kcal/day (divided meals)
    ↓
    Gradually increased to 3500-4000 Kcal/day
  - **Monitoring the Patient**
    → To prevent self-induced vomiting - 2 hours after each meal.
    → For **Refeeding Syndrome**
    - As diet is increased, patients may be habituated to eating more.
    - Leads to refeeding syndrome.

Refeeding Syndrome (Signs and Symptoms)

If carbohydrates and sodium are reintroduced too rapidly.
↓
↑sed insulin secretion (Anti-natriuretic effect) and ↑ sodium leads to - ↑ECF volume

Carbohydrates
↓
Stimulates intracellular Glucose-6-phosphate and Glycogen synthesis
↓
↓ Phosphate

More intake of food than prior
↓
↑ Metabolism (↓ Phosphate, ↓K, ↓Mg)

- Thiamine deficiency and cardiac arrhythmias may occur.
- Cardiac arrythmias can occur.

Psychotherapy

- Behavioral management
  - Praise for healthy eating habits.
  - Restriction of self induced vomiting.
- Individual therapy
- Family education

Pharmacotherapy

- SSRIs may be beneficial.
- Antipsychotic: Olanzapine is showing promising results.
  - Promoting weight gain.
  - Reducing distressing psychological symptoms.

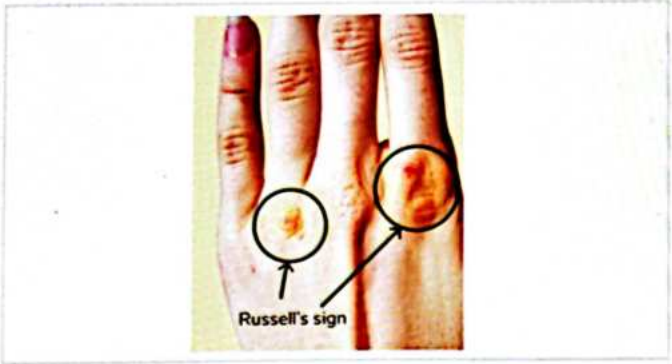
Bulimia Nervosa

00:16:48

- Bulimia (Greek word): Ox Hunger.
- More common in females - Females : Male::10:1.
- Age of Onset
  - Late adolescence and young adulthood.
  - Slightly later than Anorexia Nervosa.
  - 18-21 group.
- Episodes of binge eating combined with inappropriate ways of preventing weight gain.

Clinical Features

- Binge eating: Eating large amounts of food in a shorter time.
- Lack of control over eating.
- Followed by compensatory behavior to prevent weight gain, includes:
  - Purging behaviors
    → Vomiting
    → Use of Laxative, or Diuretics, or Emetics
    → May do excessive exercises
    → Fasting
- Occurrence: 1/week for 3 months.
- May have
  - Fear of weight gain or obesity
  - Desire to lose weight
- Normal weight or weight gain is seen.
- **Features Secondary to Purging**
  - Enamel erosion
  - Dental caries
  - Parotitis or salivary gland swelling
  - Russell's Sign: Callus on knuckles
    → This is usually due to the self-induced vomiting, the knuckles get injured by the teeth.



- Hypokalemia
- Hypochloremia
- Hyponatremia
- Alkalosis
- Rarely: Gastric and esophageal tears.

- All the secondary features to purging are also seen in Anorexia Nervosa (Binge Eating/Purging type).
- Most of the patients are sexually active as compared to Anorexia Nervosa.
- Some may have menstrual irregularities.
- Not secretive, open for treatment.
- Higher rates of recovery compared to anorexia nervosa.
- Mortality rate is also very low.

Treatment

- OPD treatment.
- **Psychotherapy**
  - First line treatment - Cognitive Behavioral Therapy (CBT).
- **Pharmacotherapy**
  - SSRIs - Fluoxetine showed better results.
  - Bupropion is contraindicated due to the increased risk of seizures.
    → Patients may have seizures due to loss of electrolytes.

Binge Eating Disorder (BED) 00:22:47

- Most common eating disorder.
- More common in females - Females (1.75): Male (1), lesser than Anorexia Nervosa and Bulimia Nervosa
- Episodes of binge eating but there is no compensatory behavior.
- There is a sense of lack of self-control.
- Behavioral evidence of lack of self-control
  - Patients may eat more rapidly.
  - Eat even when not hungry.
  - Feel embarrassed or guilty after overeating.
  - May eat alone to hide the behavior.
- Occurrence: 1/week for 3 months.
- Weight: Overweight or obese range.

Treatment

- **Psychotherapy**
  - First line treatment: Cognitive Behavioral Therapy (CBT).
- **Pharmacotherapy**
  - SSRIs - Maybe used.
  - Recently, Lisdexamphetamine is approved by the FDA for short term treatment.
    → Helps in reducing weight and binge eating episodes.
    → Long term safety and efficacy are yet to be proven.

Important Information

- BED was recently added in DSM-5 (most common).
- As per previous studies it was believed that Bulimia Nervosa is more prevalent than Anorexia Nervosa.
- But recent epidemiological studies have shown that Anorexia Nervosa has more prevalence.

Type of Eating Disorder	Lifetime Prevalence
Anorexia Nervosa	2-4%
Bulimia Nervosa	2%

Avoidant Restrictive Food Intake Disorder 00:26:28

- There is avoidant and restriction for food intake.
- Newly added in both DSM5 and ICD-11.
- **Characteristics**
  - Insufficient food intake due to:
    → Lack of interest in food
    → Avoiding based on sensory features of food
    → Perceived consequences of food.
  - Loss of weight or inability to gain weight
  - Nutritional deficiency
- There is no disturbance of body image, as in Anorexia Nervosa.
- **Age of Onset**
  - May develop in infancy or childhood
  - May persist in adulthood

Treatment

- **Psychotherapy**
  - Interaction with mother and infant
  - Educating and training the parents
- **Hospitalization required if there is:**
  - Failure to thrive
  - Nutritional deficiencies

13 PERSONALITY DISORDERS

Personality

- Personality is the dynamic organization within the individual that determines his/her unique adjustment to the environment.
- It is ways in which one deals with to day-to-day situations.

Theory on Personality

- **Theory of big five factors:** Divides personality into 5 traits **(Mnemonic: OCEAN)**
  - **Openness To Experience:** Reflects novelty seeking, sensation seeking, or desire to have new experiences.
  - **Conscientiousness:** Tendency to be organized, self-disciplined.
  - **Extraversion:** Sociable, Talkativeness, Enthusiastic, Easy with others.
  - **Agreeableness:** Cooperative, Trusting, helping nature.
  - **Neuroticism:** Emotional stability of a person, calm, composed.

Personality Disorders 00:03:22

- These are pattern of behaviour's and inner experiences that deviates significantly from individual's cultural standards.
- This disorder leads to clinically significant distress or impairment in functioning.
- The onset of a personality disorder usually starts in adolescence or early adulthood.
- The pattern is stable and for a long duration. Once the symptoms developed, symptoms remain stable.
- Some personality disorders (like antisocial and borderline) tend to become less evident or remit with age known as maturing process.
- Maturing occurs through the resolution of abnormal patterns or behaviour.
- Maturity occurs by 40 years of age.
- **Personality disorder symptoms are:**
- Ego syntonic - acceptable to the ego (symptoms accepted by the person).
- Alloplastic- Alloplastic is the ability to adapt by trying to alter the external environment rather than changing themselves.
- The person does not feel anxiety about their maladaptive behaviour.
- Often unwilling to take treatment.

Personality disorder (PD) is divided into three clusters:

Cluster A personality disorder	Cluster B personality disorder	Cluster C personality disorder
Paranoid PD	Antisocial PD	Avoidant PD
Schizoid PD	Borderline PD	Dependent PD
Schizotypal PD	Histrionic PD	Obsessive PD
	Narcissistic PD	
Odd/eccentric	Dramatic/impulsive	Anxious/fearful
Weird	Wild	Worried

Cluster A Personality Disorder 00:09:46

Paranoid personality disorder

- These persons have a long-standing pattern of suspiciousness or distrust, they don't trust anyone easily (but no hallucinations and no delusions).
- They suspect others without basis, that others are exploiting, and harming.
- Reads hidden threatening meanings and benign events.
- Bears grudges.

Schizoid personality disorder

- A long pattern of social withdrawal.
- Emotionally cold (if someone praises or criticizes these persons, they don't respond).
- Prefer solitary activities.
- Lacks close friends.
- Little interest in sexual activities.

Schizotypal personality disorder

- They have social difficulties and eccentric behaviour.
- They often exhibits odd beliefs and magical thinking e.g., superstitiousness, belief in sixth sense, telepathy.
- Speech may be vague and over-elaborated reflecting odd thinking.
- They may have illusion or ideas of reference.

- Under stress, patients may decompensate and have psychotic symptoms but these are usually brief.
- In ICD 11, schizotypal disorder is classified as a psychotic disorder and not a personality disorder.

Important Information

Cluster A personality disorders are more common in biological relatives of patients with schizophrenia, especially schizotypal personality disorder (less correlation between paranoid and schizoid personality disorder and schizophrenia).

Treatment

- **Psychotherapy** - Psychotherapy is the mainstay of treatment.
- Individual psychotherapy is usually preferred. When a person belongs to cluster A personality disorder, the therapist should be straightforward to deal with these patients.
- **Pharmacotherapy** may be used occasionally for certain symptoms.
- For example- the patient may have brief psychotic symptoms, so antipsychotics and antidepressants may be used for anxiety and depression symptoms.

Cluster B Personality Disorder 00:15:50

Antisocial personality disorder (Dissocial personality disorder)

- They don't have regard for the rights of others and often violate them.
- They frequently gets involved in unlawful activities (theft, lying, conning).
- They may show irritability and aggressiveness (physical fights or assaults).
- These patients do not have guilt or remote for their actions or may even blame others for their actions.
- Substance use disorder may be frequently present.

Treatment

- Mainstay is psychotherapy.
- Behaviour therapy is used for the management of symptoms.
- Pharmacotherapy- Carbamazepine, antipsychotics, beta-blockers.

Borderline personality disorder

- More common in females than in males.
- Unstable interpersonal relationships (idealization/devaluation).
- Identity disturbance: Unstable self-image (sudden shift of goals, values, sexual identity, etc).
- Impulsivity: They may have potentially self-damaging behaviour (spending, reckless driving, substance abuse).
- Recurrent suicidal behaviour, gestures, threats (such as wrist slash).
- Mood instability: Intense episodic anger outbursts.
- Chronic feeling of emptiness.
- These patients almost always appear in the state of crisis.
- They may have short lived psychotic episodes (micro-psychotic episodes).
- Fleeting, doubtful.
- The defense mechanism of splitting (Black or White/All or None Phenomenon) is often seen.
  The person sees either everything as good or everything as bad.
- In ICD-10: Subtype of emotionally unstable personality disorder.

Treatment

- Dialectical Behaviour Therapy (DBT):
  - Developed by Marsha Linehan.
  - Aim to improve interpersonal skills and decrease self-destructive behaviour.
  - Help in dealing with ambivalent feelings.
- Other therapies:
  - Mentalization based therapy (MBT)
    → Helps patients to be attentive to their mental states of themselves and of others.
  - Tansference-Focussed Therapy- It aims to focus on psychoanalysis.
- **Pharmacotherapies**: Antipsychotics, antidepressants, and mood stabilizers like carbamazepine.

Histrionic personality disorder

- These patients show a high degree of attention seeking behaviour.
- Speech and emotions are exaggerated.
- Behave in a colourful, dramatic, extroverted way.
- They want to be the centre of attention.
- Inappropriate sexual seductive behaviour, flirtatious.
- Uses physical appearance to draw attention.

Treatment

- Psychotherapy is the mainstay of treatment.
- Psychoanalytically Oriented Psychotherapy may be used (often are unaware of their real feelings so clarification of their inner feelings).
- Pharmacotherapy- Antidepressants, antipsychotics depending on the symptoms.

Narcissistic personality disorder

- These patients have a heightened sense of self-importance.
- Expects to be recognized as superior without any achievements.
- Preoccupied with fantasies of power of success.
- Requires excessive admiration.
- Exploitative.
- May lack empathy.

Treatment

- Psychotherapy
- Pharmacotherapy: Antidepressants, lithium

Cluster C Personality Disorders 00:24:54

Avoidant or Anxious personality disorder

- They are extremely sensitive to rejection.
- Fear of criticism, disapproval, or rejection.
- Unwilling to get involved with people unless certain of being liked by them.
- They view self as socially inept or inferior.

Dependent personality disorder

- They have difficulty in making everyday decisions.
- They are dependant on others for advice and reassurance.
- They need others to assume responsibility for most areas.
- They have difficulty expressing disagreement because of fear of loss of support.
- They lack confidence and cannot initiate new things.

Obsessive Compulsive Personality Disorder

- In OCD 10, it is known as Anankastic PD.
- There is no obsessions or compulsions.
- They are preoccupied with details, rules, organisation.
- They show perfectionism that interferes with task completion and significant delays in tasks.
- They show rigidity and stubbornness and often they are inflexible.
- They are excessively devoted to work and may not have time for leisure activities and friendships.

Treatment

- Cognitive Behavioural Therapy (CBT) is the main therapy.
- Pharmacotherapy - Antidepressants and benzodiazepines.

In ICD-11, older classification of personality disorder is removed.

- **Personality disorders are classified now based on severity:** ICD-11
  - Mild personality disorder
  - Moderate personality disorder
  - Severe personality disorder
- Specifier of 'Prominent personality trait or patterns' can be added based on specific symptoms present.
  E.g., Negative affectivity, Dissociality, Disinhibition (Tendency to act rashly)
- Personality is divided into three types- Type A, Type B, and Type D personalities.

Type A Personality:

- Competitive
- Time urgency
- Hostility
- Ambitious
- Impatient
- Type A personality disorder people have a two-fold risk of Myocardial infarction and CAD-related mortality.

Type B personality

- Easy going
- Relaxed
- Non-competitive
- Focus more on enjoyment than on winning

Type D personality

- Negative affectivity (Tendency to experience negative emotions)
- Social inhibitions (Tendency to not express emotions)

Predisposed to development of coronary heart disease

Impulse Control Disorders 00:31:13

- Impulse is a feeling of increasing tension and arousal that leads to the performance of a certain act.
- In impulse control disorders, there is an irresistible impulse or urge to perform an act (gives a sense of relief and gratification in short term) which is harmful to self or others (may cause marked distress about the behaviour).

Pyromania

- Pyromania is the recurrent purposeful setting of fires in absence of a clear motive (for example - monetary gain, or revenge).

Kleptomania

- Kleptomania is the recurrent stealing objects that are not needed for personal use or for their monetary use.

Intermittent Explosive Disorder

- Characterized by recurrent brief episodes of verbal or physical aggression or destruction of property.
- Magnitude of aggressiveness is out of proportion to the provocation or precipitating psychosocial stressors.

Compulsive Sexual Behaviour Disorder

- In ICD-11: Included under impulse control disorders.
- Characterized by persistent failure to control intense, repetitive, sexual impulses resulting in repetitive sexual behaviours.
- The repetitive sexual activity becomes the focus of life and results in adverse life consequences.

Others

Oniomania or Compulsive buying

- Recurrent episodes of buying despite the buying behavior causing significant monetary loss and socio-occupational distress.

Treatment

- Cognitive Behavioural Therapy
- Pharmacotherapy- Antidepressants like SSRIs (Valproate, Carbamazepine, Lithium).

Important Questions

Q. Identify the clinical feature
They have a heightened sense of self-importance (expect to be recognized as superior without achievements).
Preoccupied with fantasies of power and success.
Requires excessive admiration.
Exploitative, may lack empathy.
Ans: Class A, Narcissistic Personality Disorder

Q. A long pattern of social withdrawal, emotionally cold (if someone praises or criticizes these persons they don't respond). These are the clinical features of
Ans: Class A, Schizoid Personality Disorder

Q. What is the most common main-line treatment of personality disorders
Ans: Psychotherapy

Q. Impulse control disorders include
Ans:Pyromania, Kleptomania, Obsessive Compulsive Personality Disorder

Q. Paranoid personality disorder comes under which cluster of personality disorder
Ans: Cluster A Personality Disorder

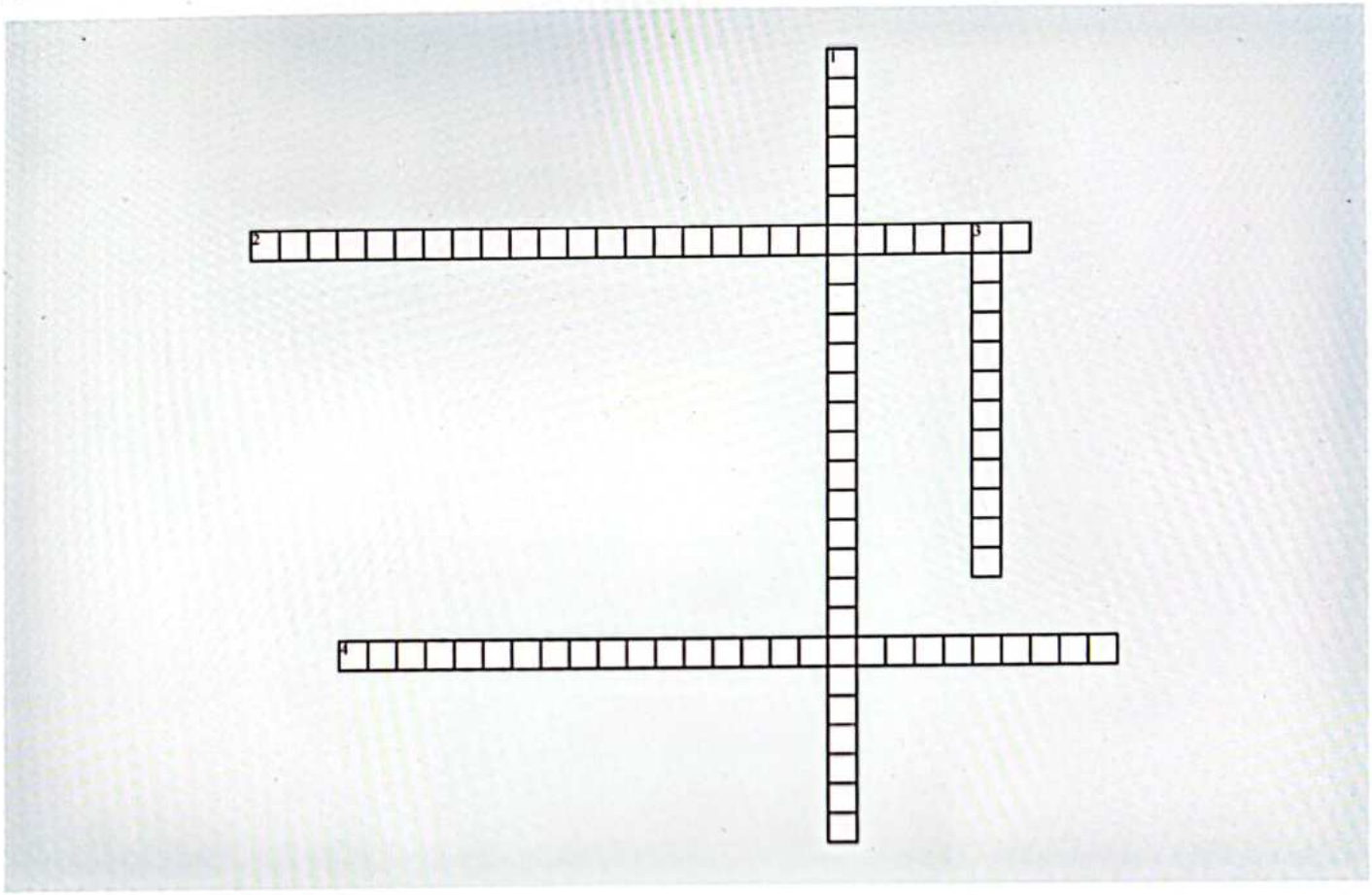
Q. This characteristic shows which personality disorder
Shows rigidity and stubbornness, often are inflexible.
Excessively devoted to work and may not have time for leisure activities and friendships.
Ans: Class C, Obsessive Compulsive Personality Disorder

Q. The onset of a personality disorder usually starts in
Ans: adolescence or early adulthood.

Q. Recurrent episode of stealing objects that are not needed for personal use or for their monetary use is called
Ans: Kleptomania

CROSS WORD PUZZLES

Crossword Puzzle1



Across

2. In _____, long-term social withdrawal is seen.
4. _____ is cluster C, personality disorder.

Down

1. In ___ person reads hidden threatening meanings and bears grudges.
3. _____ is one of the theories of personality traits.

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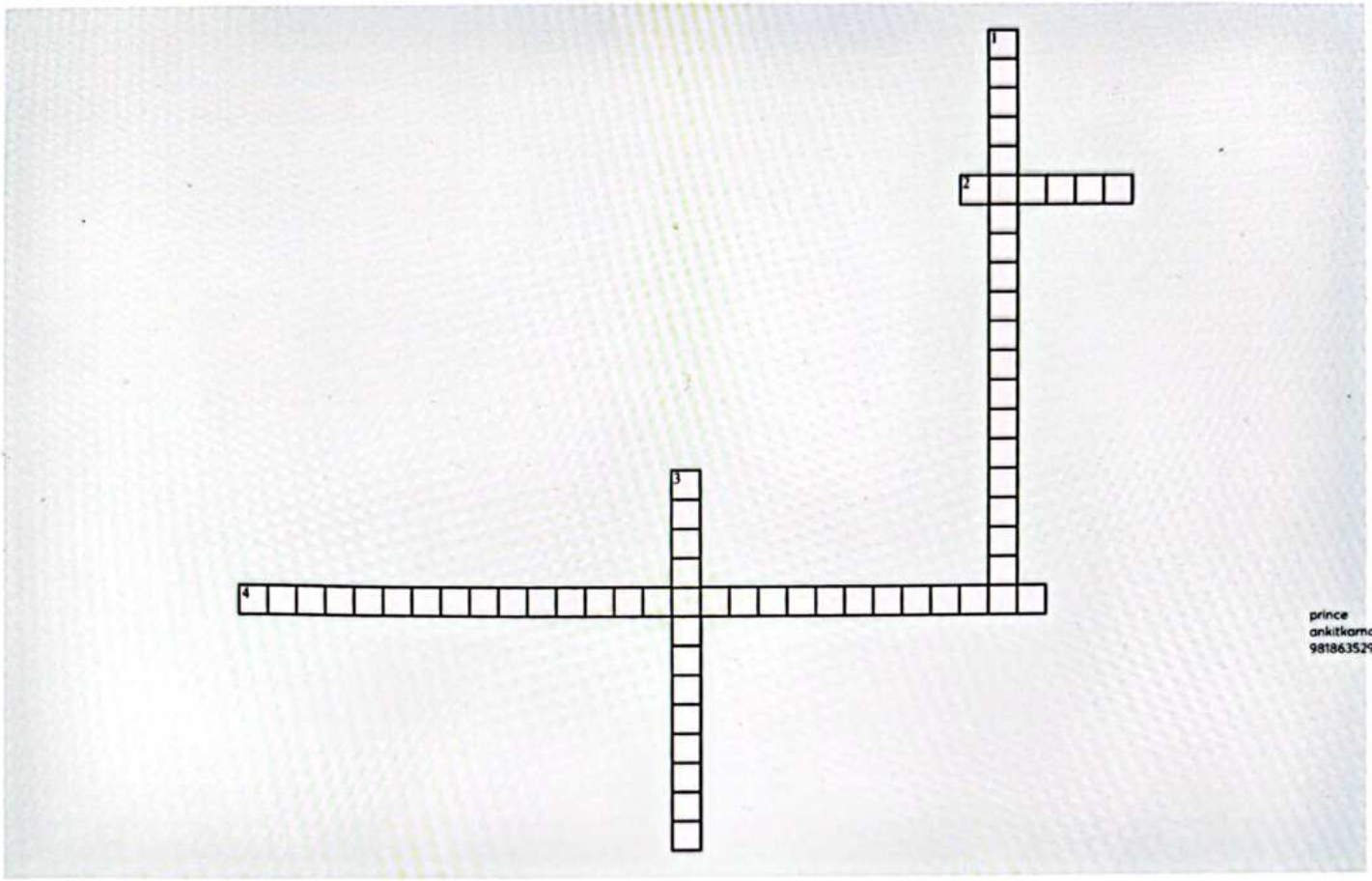
Crossword Puzzle2



Across

2. _____ defines obsessive sexual behavior disorder.
4. ___ people provide unnecessary details.

Down

1. _____ is given for borderline personality disorder.
3. _____ belongs to the class of anticonvulsant drugs.

14 FORENSIC PSYCHIATRY

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Mental Health Care Act - MHCA 2017

- A new legislation that deals with treatment and rights of patients with mental illness
- Replace older act MHCA- 1987

Important Terms related to the act

Mental health establishments 00:00:41

- Hospitals where patients with mental illness are treated are now called mental health establishments.

Capacity - capacity to make mental health care or treatment related decisions 00:00:59

- If patient is able to understand the information relevant to take decision related to treatment
- Understand the consequences of decision or lack of decision.
- To be able to communicate decisions-verbally or through writing.

Advance directive 00:02:15

- Every person who is not a minor can make an advanced directive.
- He can mention
  - The way he wishes to be treated for a mental illness or
  - The way he wishes not to be treated for a mental illness
  - Can also mention whom he wants to appoint as a nominated representative
- For example,
  - A 20-year-old male, not suffering from any mental illness, can make advance directive, mentioning the way he wishes to be treated or not to be treated when he acquires mental illness any time in the future.
  - He can also appoint his nominated representative in advance.
- Advance directive applicable only when loses the capacity to take decision.

- It is the duty of the psychiatrist in charge of treatment (Or medical officer incharge of mental establishment) to ensure that treatment is being given according to the advance directive made by the patient.
- However it is the responsibility of patient / caregiver/ nominated representative to give access to advanced directive
- If due to following a valid advanced directive, there are some unforseen consequences then the doctor can not be held liable for the same.
- It should not apply in emergency treatment.

Nominated representative 00:05:14

- Any person can appoint a nominated representative who
  - Should not be minor
  - Competent in discharging the duties as nominated representative
  - Can remove if he wishes to
- If person lose capacity to make mental health care or treatment related decisions, his nominated representative will help (or will take) in taking decisions related to treatment of the person
- For minors-legal guardians shall be the nominated representative

Admission of person with mental illness 00:06:27

- **Independent admissions**
  - If he wishes to get admitted
  - When he has capacity to make mental health care or treatment related decisions
  - Section 86- deals with Independent admission and treatment
  - Section 87- admission of minor

- **Supported admission** 00:07:00
  - A person who needs admission because of threatened/ attempted bodily harm to himself or other or Unable to take care of himself or loses capacity to make mental healthcare or treatment decisions, Nominated representative can give consent for admission.
  - Section 89-admission and treatment of person with mental illness with high support needs up to 30 days
  - Section 90-admission and treatment of person with mental illness with high support needs beyond 30 days

Prohibited procedures 00:08:33

- ECT without use of anesthesia and muscle relaxants
  - Direct ECT banned
- ECT for minors
  - If psychiatrist considers the need of ECT then -
    → Take informed consent from guardian
    → Permission from mental health review board
- Sterilization of men and women
  - If intended as treatment to mental illness
- Chained in any manner whatsoever
- **Restriction of psycho surgery for persons with mental illness**
  - In OCD-if psychiatrist considers psychosurgery is required for treateament then he will have to:
    → Take informed consent from patient
    → Approval from mental health review board

Restraints and Seclusions 00:10:16

- Physical restraint may only be used:
  - If it is the only means to prevent harm to patient or others
  - Authorized by psychiatrist in charge of patient and mental health establishment

Decriminalization of suicide 00:10:44

- Any person who attempt to commit suicide shall be presumed to have severe stress and shall not tried or punished under section 309 of IPC

Protection of children from sexual offenses act-POCSO 2012 00:11:22

- Legal framework for protection of children against sexual offenses.
- Both male and female child
- Protect children from offenses of
  - Sexual harassment
  - Sexual Assault
  - Penetrative Sexual harassment - Vaginal /anal / oral
  - Child pornography

Aggravated (Penetrative) Sexual Assault 00:12:07

- If sexual assault on a child is done by person in position of authority (armed force, police, public servant management of remand room, hospital)
- When gang is involved
- Use of deadly weapons
- Caused grievous hurt
- Inflicted life threatening disease like HIV
- Attempt of murder
- Caused child to become mentally ill
- Make female child pregnant,
- Done repeatedly
- <12 years
- Done during communal or sectarian violence

Reporting of Cases 00:13:27

- Any person who has knowledge that offence under POCSO Act is committed or likely to be committed shall inform special juvenile police unit - SJPU / local police.

Criminal Responsibility 00:13:40

- A socially harmful act is not the sole criteria of whether crime is committed.
- **The Act must have 2 components**
  1. Voluntary conduct - Actus reus
  2. Evil intent - Mens rea
     → Cannot exist if offender's mental status is so deficient or diseased that he lacks capacity for rational intent
  3. Section 84 IPC - embodies Mc Naughton's rule
- Nothing is an offense which is done by person who at the time of doing it
  - By reason of unsoundness of his mind
  - That he is incapable of knowing the nature of act
  - Or that he is doing what is either wrong or contrary to the law

Eg:

- If a patient has a delusion of persecution that his neighbor is trying to kill him, if he kills the neighbor before he kills him then he may not be held responsible for the act

Durham Rule 00:15:49

- An accused person is not criminally responsible if his or her unlawful act was product of mental illness or mental defect
- Later this rule was discarded in USA as it created confusion in terms - product / mental defect

Curren's Rule 00:16:12

- An accused person will not be criminally responsible for his act if at the time of committing the act:
  - He did not have the capacity to regulate his conduct
  - To the requirement of law
  - Or as a result of mental disease or defect

Section 85 IPC - Criminal responsibility of intoxicated person 00:16:44

- If person is so much intoxicated at the time of committing the act that he was incapable of judging the nature of act or that he is doing wrong or contrary to the the law, then he has not committed an offense, Provided that he was administered the substance against his will or without his knowledge

Section 86 IPC 00:17:40

- An intoxicated person - voluntary drunkenness is criminally responsible, if he had the intention or knowledge of committing a crime.

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15 PSYCHOLOGY

Need to know two important people.

Sigmund Freud and Psychoanalysis 00:00:21

- **Timeline:** 1856-1939
- **Birth place:** Freiburg, Moravia (Now in Czech Republic)
- **Living place:** Vienna
- **Death place:** London
- **Coined:** Psychoanalysis (means analysis of the mind)
- He is called the 'Father of Psychoanalysis'.

Psychoanalysis: Childhood experiences and unconscious mind play important role in human behavior and even in psychiatric disorders.

Anna O (Important Patient) 00:01:03

- **Real name:** Bertha Pappenheim.
- She is an important patient who led Sigmund Freud to propose the Psychoanalysis.
- She had some Hysterical symptoms
  - Paralysis of limbs
  - Visual disturbances
  - Speech disturbances
- **Findings**
  - Symptoms are in connection with the illness and death of her father.
  - Symptoms disappeared as she recollected her memory about 'when the symptoms started'.
- Whenever she would recollect the memories of her development of symptoms, her symptoms would disappear
- **Scenario**
  - Sitting at her father's bed Anna O had a dream that 'a snake was crawling towards her father and was about to bite him, and her arm had gone to sleep and she was unable to move.
- **Outcome**
  - Demonstrated the power of unconscious memories and suppressed emotions.
  - And these were significant in producing the hysterical symptoms.
- **Interpretation of Dreams**
  - Sigmund Freud viewed dreams as conscious expressions of unconscious wishes.
  - Dream is the 'Royal Road to Unconsciousness'.

Transference 00:03:00

- Patient's feelings towards the therapist.
- Can be both conscious or unconscious.
- Based on past relationships with a significant figure in the patient's life.
- Can be both -ve and +ve.
- **Example Scenarios**
  - **Negative feelings:** A 30 year old female went to a 50 year old therapist and says you are very rude just like my stepfather.
  - **Positive feelings:** A 30 year old female went to a 50 year old therapist and says you are very kind just like my father.
- Transference can be used in therapy to know the unconscious feelings the patient is having.

Counter transference 00:04:29

- Therapist's feelings towards the patient.
- Can be both conscious or unconscious.
- Can be both -ve and +ve.
- **Example Scenarios**
  - Therapist is missing appointments.
  - During the interview the therapist is sleeping.

Sigmund Freud's Theories

1. Topographical Model of Mind 00:05:11

- One of the theories given by Sigmund Freud.
- Mind is divided into three parts:
  - **Conscious**
    → Content are in our awareness.
  - **Preconscious**
    → May not be in awareness but can be brought into conscious awareness by focused attention.
    → **Ex:** What were you doing on this particular day last year? You may not know the answer for this, but if you concentrate and go back in time you may find the answer.
  - **Unconscious**
    → Content is kept away from the conscious awareness.
    → **Ex:** People may do few things unaware.

Repressive Barrier or Censor 00:06:40

- Content from the unconscious mind, is kept away from the conscious mind, by the preconscious mind due to a Repressive Barrier or Censor.
- But this barrier is crossed via dreams and other such phenomena.

a. Analysis of Dreams (Dream work) 00:07:10

- **Dream work:** Latent dreams are converted to Manifest dreams.
- **Latent dream:** Unconscious thoughts (threaten to awaken the dreamer)
- **Manifest dream:** Dreams recalled by the dreamer.

- **Mechanisms involved in Dream Work**
  - **Condensation**
    - → Several unconscious wishes combined into a single image.
    - → **Ex:** Monster in a child's dream may represent his father/ mother/ teacher.
  - **Displacement**
    - → Transfer from original object to substitute object (neutral).
    - → **Ex:** Unknown female in a child's dream may represent his mother.
  - **Symbolic representation**
    - → Substitution of highly charged objects into innocent images.
    - → Few symbols may have universal meaning.
    - → **Ex:** Snake in a widow's dream may represent penis (strong impulse).

b. Other Ways by Which Content Might Cross Repression Barrier 00:09:30

- **Free association**
  - Therapist (Sigmund Freud) sits nearby the couch without being visible to the patient.
  - Patient is allowed to speak uninterrupted.
  - Advised to say whatever comes in the mind.
  - That too without censoring any thoughts.
  - **Outcome:** Patient may speak a few thoughts from the unconscious mind.
- **Slip of the tongue (Parapraxis)**
  - Sigmund Freud says that slip of the tongue is not a simple mistake.
  - It may be important information about the unconscious mind.

2. Structural Theory of Mind 00:11:00

- Mind is divided into three parts
  a. Id
  b. Ego
  c. Superego

a. Id Part

- Consist of instructive drive.
- Based on the pleasure principle (like in animals).
- Operates under primary process, lacks capacity to delay urges.
- It lies in the unconscious part of mind.

b. Ego Part

- Executive organ of the mind
- Works on reality principle (in reality)
- Creates a balance between id and superego, as well as the real world.
- It lies in all unconscious, conscious, and preconscious parts of the mind.
- Defense mechanism of ego resides in the unconscious part.

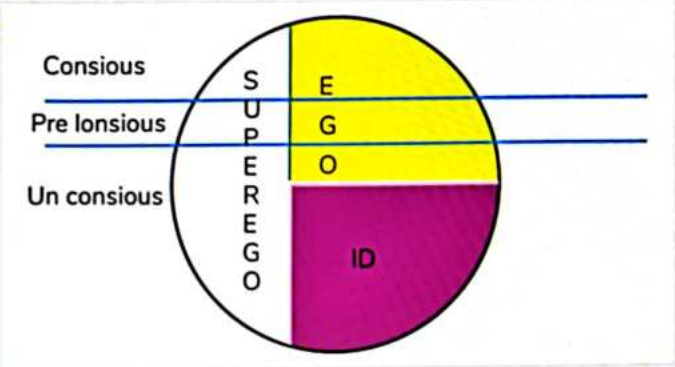
c. Superego Part

- Moral compass
- Insist on socially acceptable behavior.
- **Development:** Between 5-6 years (after the resolution of the oedipus complex).
- Mostly present in the unconscious part, but also has some unconscious components.

Example by a Case scenario:

Id is saying Let's Go out and Party
Super Ego is saying Study for exams
Ego is saying Let's study half a day and then let's go out

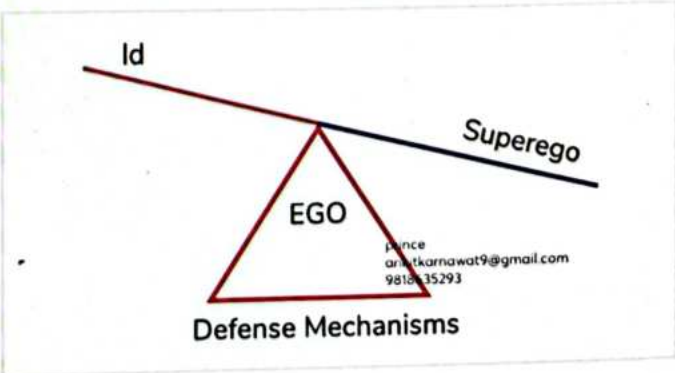
3. Combination of Topographical and Structural Theories of Mind 00:14:30



- Pink part is **Id**
  - In the unconscious part only.
- Yellow is **Ego**
  - In all 3 parts.
  - Unconscious part of Ego has defense mechanisms.
- The rest at left is **Superego**
  - In all 3 parts.
  - Mostly in the unconscious part.

What are Defense Mechanisms? 00:15:29

- These are the tools used by Ego to overcome the friction between Id and Ego.
- Helps in prevention of excessive anxiety.



Important Information

- Most defense mechanisms are in the unconscious mind.

- **Defense mechanisms are of 4 groups.**
  - Narcissistic
  - Immature
  - Neurotic
  - Mature

1. Narcissistic Defenses 00:16:00

- Mnemonic: PD

a. Projection

- Person projects his own desires onto someone else.
- **Ex:** Mr.P is having an affair but is convinced that his wife is having an affair.
- Seen in psychosis.

b. Denial

- Refusing to accept reality.
- Usually used to avoid some painful stimuli.
- **Ex:** Wife was cooking, and heard news of her soldier husband who died in war, but continues to cook as if nothing happened.
- There was so much anxiety after listening to this, but the unconscious mind used the defense mechanism for denial.

2. Immature Defenses 00:18:05

- Mnemonic: **B A R In** Police Station
  - **B** - Blocking
  - **A** - Acting out
  - **R** - Regression
  - **In** - Introjection
  - **Police** - Passive aggressive
  - **Station** - Somatization

a. Blocking

- Inhibition of thinking (temporary)
- There is also a component of tension (inability to remember)
- **Ex:** Student unable to recall the answer in exam (temporary), but recalls as he comes out of the exam.

b. Acting out

- Unconscious wishes enacted in behavior to avoid being aware of them.
- **Ex:** Student is angry with his friend, Rather than telling him he throws a book at him (not intentionally).
- Seen in impulse control disorders (ICD).

c. Regression

- Return to an earlier stage of development (to avoid anxiety of later stages).
- People may act childish/ younger.
- **Ex**
  - Husband returns after a stressful day, converse with wife in baby talks.
  - Bedwetting scene in an 8 year old child, due to some stress at school.

d. Introjection

- Opposite to projection.
- Features of the external world/people are taken in and made a part of self, which solves emotional difficulty.
- **Ex:** People often treat their children the same way their parents treated them.
- **Stockholm syndrome** (Identification with the aggressor), hostages get sympathetic at their captors.

Projective identification

- Patient projects some aspect of self in someone else.
- Tries to coerce another person into identifying that he/she is projected.
- Both feel the same sense of oneness.
- **Ex:** Wife is aggressive at husband, then husband also shows his aggressiveness.
- Seen in Borderline personality disorder.

e. Passive aggressive

- Passive/indirect expression of feelings.
- Feelings are unconscious.
- **Ex:** A student said that he will share the book, but went home without sharing it.

f. Somatization

- Unconscious moments are converted to bodily/ physical moments.
- **Ex:** Getting a headache while giving exams. Due to more stress the body converted the stress into bodily feeling.

3. Neurotic Defenses 00:24:10

- **3 Idiots**
  - Inhibition
  - Intellectualization
  - Isolation of affect
- **3D**
  - Displacement
  - Dissociation
  - Undoing
- **3rd row**
  - Rationalization

- Reaction formation
- Repression

a. Inhibition 00:24:41

- Unconsciously limiting an aim, and accepting partial fulfillment of desire.
- **Ex:** A person is unable to clear the entrance exam for MBBS, he becomes a veterinary doctor.

b. Intellectualization 00:25:11

- Excessive use of intellect to escape painful emotions.
- **Ex:** After getting diagnosed with a metastatic tumor, a person starts discussing a great deal about its technical aspects.

c. Isolation of affect

- Separation of emotions related to a stressful event, but reality is accepted.
- **Ex:** A man comes home and tells his family of his lung cancer without any emotions.

d. Displacement

- Unconscious shifting of impulses from one object to another, to solve a conflict.
- **Ex:** A man gets angry with his boss, shouts at his wife, wife shouts at her son, and son punches his toy.

e. Dissociation

- Separation of one or more mental functions from remaining functions to avoid distress.
- **Ex:** A person was kidnapped and tortured, he says it was as if he was floating on the ceiling and watching it.

f. Undoing

- An act to nullify a previous act.
- **Ex:** A man is sexually provoked by a woman he sees, leaves and buys flowers for his wife.
- Most of the people do Touchwood (nullify the bad thoughts).

g. Rationalization

- Giving logical explanations for unacceptable behaviors.
- **Ex:** A person says he drinks alcohol because it kills all the germs in his body.
- It is seen in Substance use disorders.

h. Reaction formation

- Unacceptable impulse transformed into its opposite.
- **Ex:** A boy is fascinated by porn, organizes anti-pornography campaign.

i. Repression

- Idea/ feeling eliminated from consciousness which you cannot access.
- You forget, then you forget that you forgot.
- **Ex:** A child has been abused by his mother, now has no memory of that abuse.

4. Mature Defenses (ASH) 00:30:05

- **A3**
  - Altruism
  - Anticipation
  - Asceticism
- **S2**
  - Sublimation
  - Suppression
- **H1**
  - Humor

a. Altruism

- Constructive gratifying service to others, to deal with their own feelings.
- It may be harmful to the person.
- **Ex:** After the death of the husband, due to smoking, the wife starts a 'No smoking' campaign. She does not look after her health.

b. Anticipation

- Realistically anticipating and planning for future discomforts.
- **Ex:** After failing in the exam, the student plans to argue while going home.

c. Asceticism

- Ascetic: Monk like
- Eradicating pleasurable effects of experiences, gratification is derived from renunciation.
- **Ex:** Ms M refuses to eat till her company project gets completed.

d. Sublimation

- Transformation of unacceptable impulse into socially acceptable behavior.
- **Ex:** A child gets angry at being scolded at home, scores 100 runs in a school cricket match.

e. Suppression

- Conscious decision to postpone attention to a conflict.
- **Ex:** A student decides to forget about the upcoming exam, take a day's break.

Important Information

- All the mechanisms are unconscious, except suppression.

f. Humor

- Using humor to deal with unpleasant situations.

- **Ex:** A man comes out and laughs after getting scolded by the boss.

Defense mechanisms in various psychiatric disorders

00:34:00

1. Defense mechanisms in OCD

- **I2**
  - Inhibition
  - Isolation of affect
- **2D**
  - Displacement
  - Undoing
- **1st row**
  - Reaction formations

2. Defense mechanisms in phobias

- Displacement
- Repression
- Inhibition

3. Defense mechanisms in Substance use disorders

- Rationalization
- Denial (patient denies about their addiction)

4. Defense mechanisms in Neurosis

- Repression

Stages of Psychosexual Stages

00:35:35

- Freud proposed 5 stages of Psychosexual development.
- He proposed that development may get arrested at a particular stage (Fixation).
- This may result in Psychiatric disorder.

1. Oral stage

- **Age:** Birth-1.5 years.
- **Site of pleasure:** oral cavity/ oral gratification.
- Child bites tongue, cheeks.
- Fixation: schizophrenia, substance dependence.

2. Anal stage

- **Age:** 1.5-3 years.
- **Major site of gratification:** Anal.
- Child derives pleasure through excretion.
- Fixation: OCD (Obsessive Compulsive Disorder).

3. Phallic stage

- **Age:** 3-5 years.
- **Site of pleasure:** Genital area.
- Child derives pleasure by stimulating genital areas.

a. Male children develop Oedipus complex & Castration anxiety.

00:37:56

- **The Oedipus complex is an attraction towards mother.**
  - MOM (M-Male child, O-Oedipus complex, M-Mother).

Important Information

- Oedipus is a Greek character, who killed his father and married his mother.

- **Castration anxiety is the fear of castration by the father.**
  - If he finds out the child's attraction towards the mother.
  - It gets resolved by identification with the father, attempting to adopt the father's characteristics.

b. Female children develop Electra complex & Penis envy.

00:39:00

- **Electra complex** is the attraction of a daughter towards the father.

Important Information

- Electra is a Greek character, who killed her mother and married her brother.

- **Penis envy** is the discontent with female genitalia following a fantasy that is resulted from loss of penis.
  - They have a desire to bear a penis.
  - It gets resolved by identification with the mother.
- **Fixation:** Hysteria, Sexual deviations.

4. Latent stage

- Age: 5/6-11/13 years
- There is relative sexual quiescence (inactivity).
- The Oedipus Electra complex is usually resolved at the beginning of this stage.
- Superego is formed.
- Mastery of skills (child learns new skills).
- Fixation: Neurotic disorders.

5. Genital stage

- Age: 11/13 years-Young adulthood.
- Maturation of genital functioning, development of adult sexuality & adult identity.
- Fixation: Neurotic disorders.

Cognitive Development Stages

00:41:45

- Jean Piaget, described 4 stages in the development of the thinking process.

1. Sensorimotor stage

- Age: Birth-2 years
- Children learn through sensory observations and gain control of their motor functions.
- Out of sight, out of mind thinking.

- Here & now thinking.
  - **Ex:** If a pen is placed in front of the child and then removed. The child is able to recognize that the pen no longer exists.
- Symbolization develops at 18 months.
- Child is able to create a mental image of a real object.
  - **Ex:** If you say ball to the child, he creates an image of the ball in the mind.
- Object permanence develops during the end of this stage.
  Children behave as though the object has a reality outside themselves.
  Children think the object is still in existence, even if it is removed.
  It marks transition from sensorimotor stage to the Preoperational stage.

2. Stage of Preoperational thought

- **Age:** 2-7 years
- Children use symbols & languages more extensively.
- Children at this stage show Intuitive, Egocentric & Animistic thinking.
  - **Intuitive thinking:** without any logic or reasoning.
  - **Egocentric thinking:** They see themselves as the center of the universe and cannot understand others' perspectives.
  - **Animistic thinking:** Objects have feelings and intentions.

3. Stage of Concrete operations

- **Age:** 7-11 years
- Egocentric thought is replaced by Operational thought.
- Children can now see things from someone's perspective.
- Children begin to use Logical thinking.
- They can group objects into classes, act on concrete (non-hypothetical objects), and real objects.
- They can understand and follow rules and regulations.
- Two important phenomenon seen in this stage are:

a. Conservation

- Ability to understand that the shape of an object may change, the object remains the same.
- **Ex:** If a ball of clay is rolled in the shape of a rope, the child recognizes both have the same amount of clay.

b. Reversibility

- Ability to understand that one thing can change into another, and back again to normal.
- **Ex:** Children can understand that ice is converted to water and water is converted to ice.

4. Stage of Formal operations

- **Age:** 11 years-End of adolescence
- Development of Abstract thinking (deeper thinking).
- Child understands concepts of permutations, proverbs, probabilities and combinations.
- Hypothetico deductive thinking, ability to make a hypothesis and to test it against reality.
- **Ex:** Balancing heavier and lighter objects.

Learning Theories 00:48:17

- Learning is change in behavior by practice or experience

1. Classical conditioning 00:48:43

- Respondent/ Pavlovian conditioning.
- Experiments are done by a Russian physiologist 'Ivan Pavlov'.
- Repeated pairing of a neutral stimulus with one that naturally produces a response, the neutral stimulus also starts to produce a response.
- Pavlov showed food to a dog, it resulted in natural salivation.
- Food is an UCS (unconditioned stimulus).
- Salivation is an UCR (unconditioned response), natural response to an UCS.
- Stimulus is a naturally produced response without any learning.
- If the bell rings, there is no response from the dog.
- Bell is a NS (Neutral Stimulus).
- During conditioning, the bell is rung and the food is given.
- It is an UCS and the dog shows UCR.
- This was done multiple times.
- After conditioning, the bell rang and the dog started salivating.
- Bell is a CS (conditioned stimulus), stimulus which is paired with an UCS produces a response.
- Salivation without food is a CR (conditioned response), response which results from pairing of CS to UCS.
- The following phenomena are seen:

a. Extinction

- If the CS is presented repeatedly without the UCS, the response will decrease and eventually disappear.
- **Ex:** If the bell is rung without food, the dog may stop salivating.

b. Stimulus generalization

- A CR gets transferred from one stimulus to another.
- **Ex:** Other than bell, sound a buzzer which may produce salivation.

2. Operant conditioning 00:53:06

- Instrumental/ Skinnerian conditioning
- It was described by B F Skinner, an American Psychologist.
- A behavior is determined by its consequences.
- Behavior can be learned or unlearned and its frequency can be changed, by modifying the consequences of that behavior.

a. Reinforcement 00:53:53

- The frequency of the behavior is increased.
  - **Positive reinforcement**

→ If a behavior is followed by pleasant consequences (reward), its frequency increases.
→ **Ex:** If a child studies and you give a pizza party, they study more.

- **Negative reinforcement**
  → If a behavior is to avoid negative consequences, its frequency increases.
  → **Ex:** A child studies more to avoid being scolded.

b. Punishment

- If a behavior is to avoid negative consequences, its frequency decreases.
- **Ex:** A child sits silent in the class to avoid being scolded.

c. Extinction

- Due to lack of reinforcement, the behavior is decreased.
- **Ex:** If a child studies hard, but they don't get any reward.

Permack's principle 00:55:55

- It is based on operant conditioning.
- A behavior engaged in with high frequency can be used to reinforce a low frequency behavior.
- Permack observed that playing pinball is high, but candy eating is low.
- He said that playing pinball is allowed only after eating candy. This increased the frequency of candy eating.

Important Information

- Permack's principle is also known as Grandma's rule.
- If you eat spinach, you can have dessert. This increased the frequency of spinach eating.

Biofeedback 00:57:39

- It is based on operant conditioning.
- Involuntary ANS (Autonomic nervous system) can come under voluntary control by operant conditioning.
- By instruments the patient acquires information about the status of involuntary biological functions (BP, HR, temperature).
- Then the patient learns to regulate their biological status that affects symptoms
- **Ex:** EMG (Electro Myogram) measures muscle tension in Bruxism treatment. EMG is attached to the Masseter muscle, emits high tone when muscle is contracted and low tone when muscle is at rest.
- Patients can learn to alter the tone to indicate relaxation.

Neuropsychological Tests 00:59:00

- Branch of psychology, that examines the relationship between the behavior and brain functioning (cognitive, sensory, motor and emotional functioning).
- It tries to locate the areas of disturbances in the brain.

1. Personality assessment

a. Objective tests 01:00:00

- Standardized tests which give numerical scores and can be analyzed using standard result tables.
- Minnesota Multiphasic Personality Inventory (MMPI), a patient is asked a set of questions and should answer true or false.
- Personality Assessment Inventory (PAI).

b. Projective tests 01:01:05

- Patients are provided with ambiguous stimuli (non specific) and it is believed that the patient's response to such stimuli reflects his internal 'Unconscious thought'.
- The patient projects his internal conflicts on the test.
- Based on the answers his personality is assessed.

i. Rorschach Inkblot test 01:01:41

- Developed by Herman Rorschach.
- Most frequently used projective personality test.
- Consists of 10 Inkblot cards (ambiguous, symmetrical).
- Patient is asked what he sees in the cards.

- The answers are not objective, there may be endless answers.

ii. Thematic Apperception Test (TAT) 01:03:04

- Consists of 20 pictures depicting individuals involved in a variety of activities.
- Patient is asked to make stories about them.
- The stories said by the patient helps in assessing their internal conflicts.

- **Ex:** Image of a person who is very sad, lack of attention.

iii. Children Apperception Test (CAT) 01:03:51

- 2 versions, Animals and Human pictures.
- Younger children may relate to animal pictures.

iv. Sentence completion test 01:04:10

- Person is given incomplete sentences and asked to complete them with the first response that comes to their mind.
- **Ex**
  - When I was a child, I.....
  - My father seldom .....
- The answers said by the patient helps in assessing their internal conflicts.

v. Figure drawing 01:04:31

- Person is asked to draw any person.
- It may involve humans or houses or other forms.
- Person is asked to draw any person.

vi. Draw a person test (DAPT) 01:04:42

- Person is asked to draw any person.
- The answers said by the patient helps in assessing their internal conflicts.

2. Intelligence testing 01:05:00

- It was test by Intelligent Quotient (IQ)

$$IQ = \frac{Mental\ age\ (MA)}{Chronological\ age\ (CA)} \times 100$$

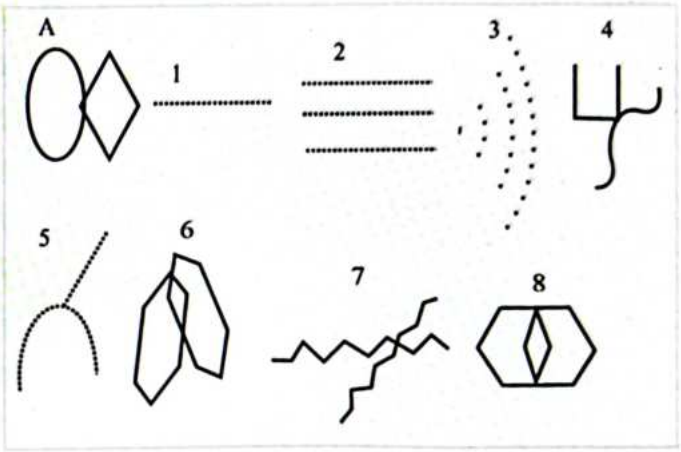
- Denominator should not be >15.

Scales

- **Wechsler intelligence scales**
  - Wechsler adult intelligence scales (WAIS-iii: latest version).
  - Verbal IQ
  - Performance IQ
  - Full scale IQ
- **Others**
  - Malin's Intelligence scale for Indian Children (MISIC)
  - Bhatia's Battery of Performance Tests of Intelligence

3. Organic Mental Disorders 01:06:03

- Assess various cognitive functions (memory, sensory, motor, language, executive functions, arithmetic, visual, spacial functions)
- Bender Gestalt test (Bender visual motor Gestalt test), is used as a screening tool for organic brain disorders. For eg: The image that is given below, such kind of picture is being shown to the person and is being asked to draw them.



- Luria Nebraska Neuropsychological Battery
- Halstead Reitan Battery of Neuropsychological tests.

16 MISCELLANEOUS

Death and Dying 00:00:23

- Elisabeth Kubler - Ross proposed stages of death and dying
- When an individual is informed about his impending death, he usually goes through a series of responses.

Mnemonic - DABDA

1. D - Denial and shock
   - Refusal to accept the diagnosis and reaction of shock.
2. A - Anger
   - Feels very angry towards family members, doctor, or even god
   - Questions 'why me??'
3. B - Bargain
   - Patients tries to bargain for more time to family members, doctor, or even god
4. D - Depression
   - Signs:
     - Sadness
     - Withdrawn
     - Suicidal thoughts
5. A - Acceptance
   - Accepts that death is inevitable
   - May change to neutral or happy

Bereavement, Grief and Mourning 00:03:00

- **Grief reaction** - Subjective feeling precipitated by death of loved one
- **Bereavement** - State of being deprived of someone due to death
- **Mourning** - Process through which grief is resolved
  - Involves practices like funeral, burials, prayers

Phases of grief

- **Denial and shock** - Disbelief, searching behavior
- **Anguish** - Anger, withdrawal
- **Conduct problems** - Restless, aimless
- **Resolution** - Return to work, acquire new roles

Complicated bereavement 00:04:46

1. **Chronic Grief**
   - Prolonged grief
   - Bitterness and idolisation of dead person
2. **Hypertrophic grief**
   - Extraordinarily intense grief reaction
   - Mostly with sudden or unexpected death
3. **Traumatic bereavement**
   - Grief that is both chronic and hypertrophic
   - Longing for deceased, recurrent image of death

Bereavement vs depression 00:05:55

Bereavement	Depression
• Both positive emotions as well as negative emotions coexist	• Negative emotions predominate
• Guilt, suicidal thoughts, worthlessness - rare	• Guilt, worthlessness, suicidal tendencies
• Onset- Within 2 months of death	• Occur anytime
• Functional impairment is mild and transient	• Clinically significant

Spikes Protocol 00:07:21

- Protocol for breaking bad news to patient about their illness
- Involves 6 steps
  1. S - Setting
     - Private and comfortable, involve significant others
  2. P - Perception
     - What patient perceive / knows about the condition
  3. I - Invitation
     - Finding out how much patient wants to know
  4. K - Knowledge
     - Explain the disease and care options
  5. E - Emotion
     - Ask how patient feel and respond with empathy
  6. S - Strategy and Summary
     - Plan a strategy and explain

Electroconvulsive Therapy - Ect 00:09:10

Cereleti and Bini -

- First to conduct electrical induction of seizures in patient to produce successful treatment response

Types of ECT 00:09:47

- **Direct ECT**
  - Done without anesthesia / muscle relaxants
  - Prohibited in India
  - More complications or side effects- fractures, teeth dislocation
  - Not used now
- **Modified / indirect ECT**
  - After giving anesthetic agents and muscle relaxants
  - Anesthetic agents
    - → Methohexital (Most commonly used)
    - → Thiopental
    - → Etomidate
    - → Ketamine
    - → Propofol
  - Muscle relaxants
    - → Succinylcholine

Mechanism of action

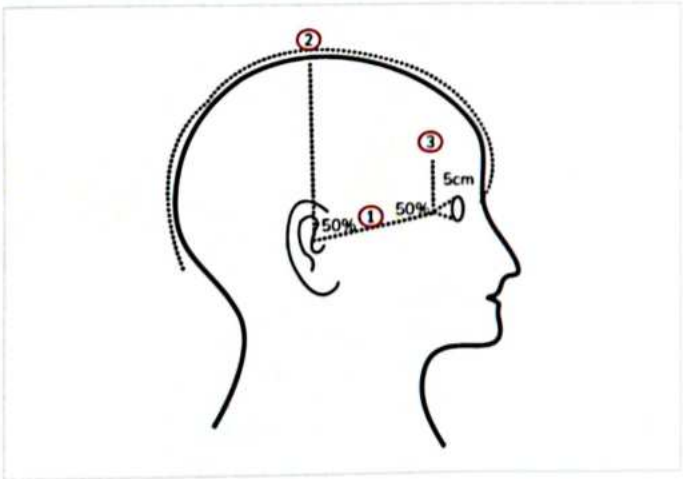
- The induction of **bilateral generalized seizure** is necessary for beneficial effects of ECT

Proposed hypothesis

- **Changes in neurotransmitters**
  - Downregulation of postsynaptic beta adrenergic receptors
- **Changes in BDNF**
  - Increase in BDNF - Brain derived neurotrophic factor
- **Structural changes**
  - Neurogenesis in hippocampus
- **Neurophysiological changes**
  - During generalised seizure there is increase in cerebral blood flow, cerebral metabolism, brain permeability to blood
  - Post ictal period- decrease in cerebral blood flow, cerebral metabolism
    → Correlates with treatment outcome

Electrode placement 00:12:33

Various configurations have been developed:



1. **Bilateral ECT**
   - Placed on both the sides of scalp
   - Bifrontotemporal electrode placement
     - Midway between outer canthus to external auditory meatus on both sides (Placed at position 1 in above image)
     - More cognitive side effects
   - Bifrontal
     - Electrodes placed 5 cm above outer canthus both sides (Placed at position 3 in above image)
2. **Unilateral ECT**
   - Right unilateral ECT **(d'ELIA placement)**
   - Electrodes placed on vertex and right side (Placed at position 1 and 3 in above image)
   - Has better cognitive side effects profile
   - Is increasingly used nowadays

Monitoring seizures 00:14:39

- Observe tonic clonic movement
- Evidence of seizure activity on EEG or EMG
- For seizure to be effective in the course of ECT, it should be for at least 25 sec

Prolonged seizure 00:15:22

- Seizure > 180 sec or status epilepticus
- Terminate the session in such cases

Frequency of ECT

- 2-3 times a week

Indications 00:15:50

1. **MDD - Major Depressive Disorder**
   - Most common indication
   - Depression with suicidal risk - treatment of choice
     - Onset of action is early
   - Depression with stupor/ severe agitation
   - Depression with psychotic symptoms
   - Failed medication trials/ intolerance to medications
   - Treatment of choice in pregnant woman with depression and suicidal tendencies who cannot take medicines
2. **Manic episodes**
   - When unresponsive /intolerant to medications
   - Or Manic behavior has produced dangerous levels of exhaustion
   - Lithium lowers seizure threshold
     - Confusion and delirium may occur post ECT
     - Discontinue lithium 2 days before ECT
3. **Schizophrenia**
   - Catatonic Schizophrenia
   - Schizophrenia with positive / affective/ marked symptoms
   - Antipsychotics given initially
   - ECT not used for chronic schizophrenia
   - Used for intolerant / unresponsive patients to medications
4. **Other indications**
   - OCD
   - Neuroleptic malignant syndrome
   - Hypopituitarism
   - Intractable seizure disorder
   - On and off phenomenon of parkinsonism

Contraindication 00:19:11

- No absolute contraindications
- Pregnancy is not a contraindication
- **Relative contraindications:**

- Space occupying CNS lesions
  → May cause - Edema, brain herniation after ECT
- Raise intracerebral pressure (CSF increases during ECT)
- Cerebrovascular disease
  → May cause cerebral bleeding
- Recent Myocardial Infarctions
- Severe pulmonary disease
- Retinal detachment

Adverse effects 00:20:10

- Memory impairment
  - Significant concern associated with ECT
  - Usually mild
  - Recovers within 6 months
  - Both Retrograde / anterograde amnesia seen
  - Retrograde amnesia is more common
- Headache
- Confusion
- Delirium
- Nausea/Vomiting
- Muscle pain
- Fractures
  - Less with modified ECT