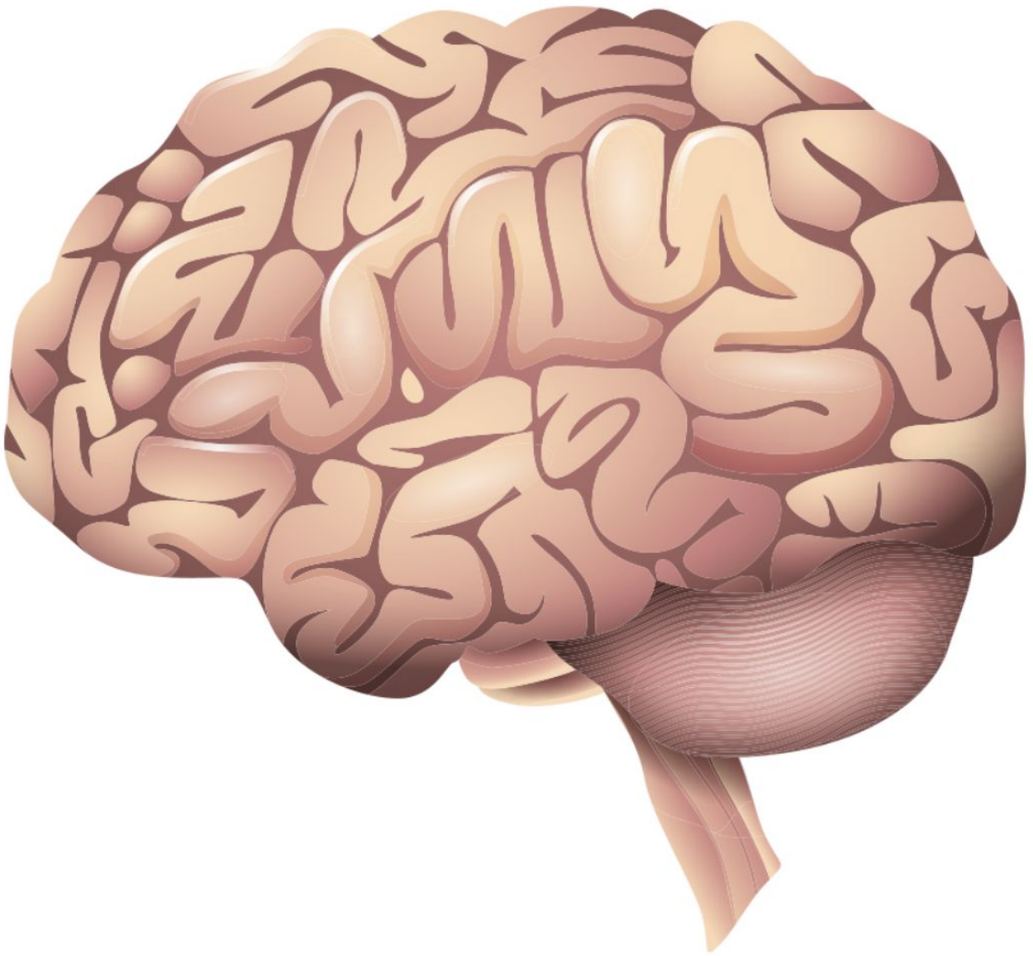
PLABABLE

GEMS

VERSION 1.2

NEUROLOGY



Normal Pressure Hydrocephalus

Dilation of the ventricles with normal CSF pressure

Classic triad

Wet

Urinary incontinence

Wobbly

Gait instability

Wacky

Neurocognitive changes - dementia

Investigations

- **CT or MRI brain** - dilation of the ventricles
- **Lumbar puncture** - CSF pressure either normal or mildly elevated

Management

- CSF shunt (definitive)
- Acetazolamide (decreases CSF pressure)
- Serial lumbar puncture (if unfit for surgery)

Intervertebral Disc Prolapse

Symptoms

- Unilateral leg pain which radiates through buttock, thighs to to the foot and toes
- Symptoms can be acute or gradual
- Leg pain more severe than the back pain
- Associated with numbness and paraesthesia
- Pain usually relieved by lying down
- Pain worsens when walking or prolonged sitting

Investigation

- MRI (only if red flags e.g. bowel/bladder dysfunction, saddle anesthesia)

Management

- Usually resolves spontaneously in 6 weeks but can last for months
- NSAIDS
- Amitriptyline

Vascular Dementia

Features

- **Stepwise cognitive decline** (dementia)
  - Difficulty in attention
  - Gait disturbance
  - Memory and mood disturbance
  - Urinary incontinence
- **Cerebrovascular disease** in the last 3 months before presentation (either signs of neurological deficit or on brain imaging)

Risk factors

- Previous H/o stroke or TIA
- Atrial fibrillation
- Hypertension
- Diabetes
- Smoking

Investigation

- **CT / MRI** - Multiple cortical / subcortical infarcts

Pseudodementia

- Acute onset of symptoms
- Constant depressed mood
- A major event in life occurring before the onset of symptoms such as losing a loved one
- Insight to their symptoms

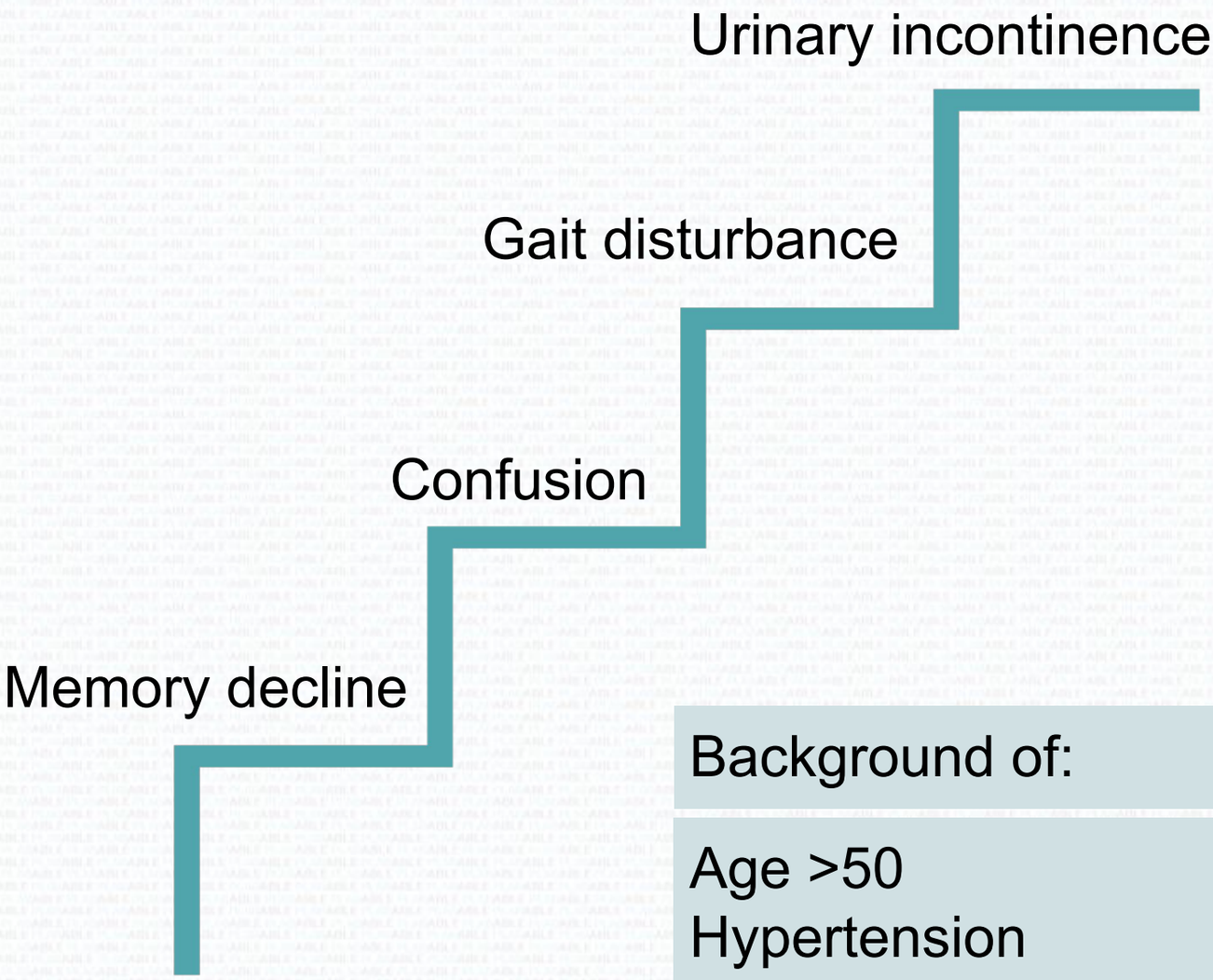
Vascular Dementia

Brain trainer:

A 66-year-old man, known case of uncontrolled **hypertension** presents to the clinic with his wife complaining of deterioration of his **memory** and **confusion**. He has a past **history** of transient ischaemic attack. Throughout the year, his wife has noticed a decline in his memory, along with **clumsy gate** which has made him prone to falls, as well as progressive **urinary incontinence**. He is a heavy smoker. His mini-mental state examination score is 19 on 30. MRI is suggestive of multiple subcortical macular old infarcts. What is the diagnosis?

➔ **Vascular dementia**

Vascular Dementia



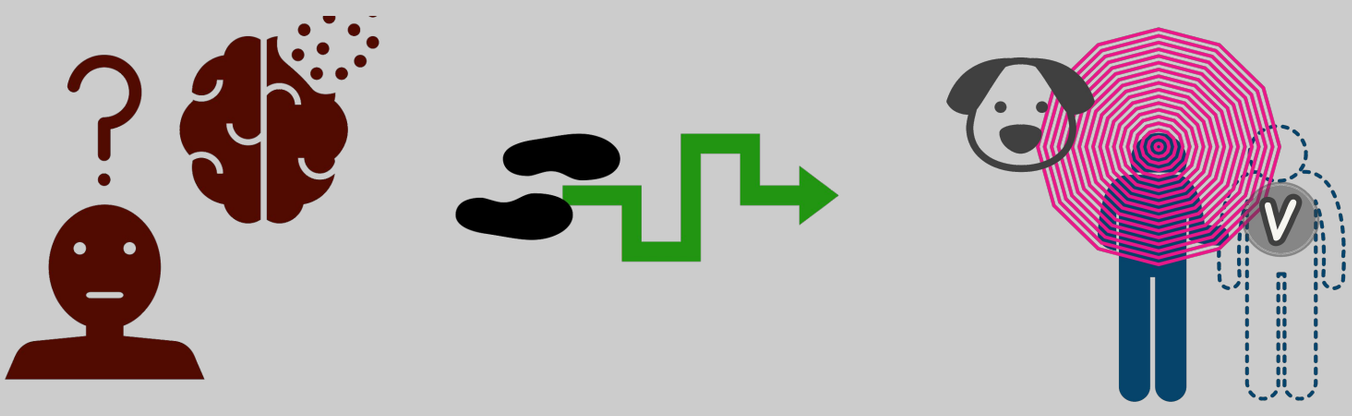
Background of:

Age >50
Hypertension
Smoking
TIA
Cardiovascular risk

Lewy Body Dementia

Features

- Fluctuating levels of awareness and attention (dementia)
- Visual hallucination (hallmark)
- Mild parkinsonism:
  - Tremor
  - Rigidity
  - Mask like face
  - Festinating gait



Lewy Body Dementia

Brain trainer:

A 67-year-old man is accompanied by his wife. You notice that he walks slowly and in a **shuffling** fashion. His wife tells you that he has become increasingly **forgetful** over the last year or so and tends to lose his concentration from time to time. A few days ago, he had asked her to give the **dog** some food when, in fact, they never had a dog. She claims that he has also been talking to **imaginary friend** who he calls Vincent. After careful evaluation, a diagnosis of Lewy body dementia is made. Which is the symptoms which helped in the diagnosis?

➔ **Visual hallucinations**

Frontotemporal Dementia or Pick's Disease

Features

- Predominantly affecting the frontal and temporal lobe
- **Behavioral changes > Cognitive deficits**
- Loss of inhibition
- Inappropriate social behavior
- Loss of empathy and sympathy
- Speech difficulties

Brain trainer:

A 79-year-old man was seen in the memory clinic as an outpatient. On his mental state examination, he was noted to be **disengaged** expressing boredom on as well as making **inappropriate comments** to the doctor of a sexual nature. What is the diagnosis?

❖ **Frontotemporal dementia**

Alzheimer's Disease

Features

- Most common form of Dementia
- Memory lapses
- Forgetting names and places
- Difficulty with language
- Easily getting lost
- Urinary incontinence

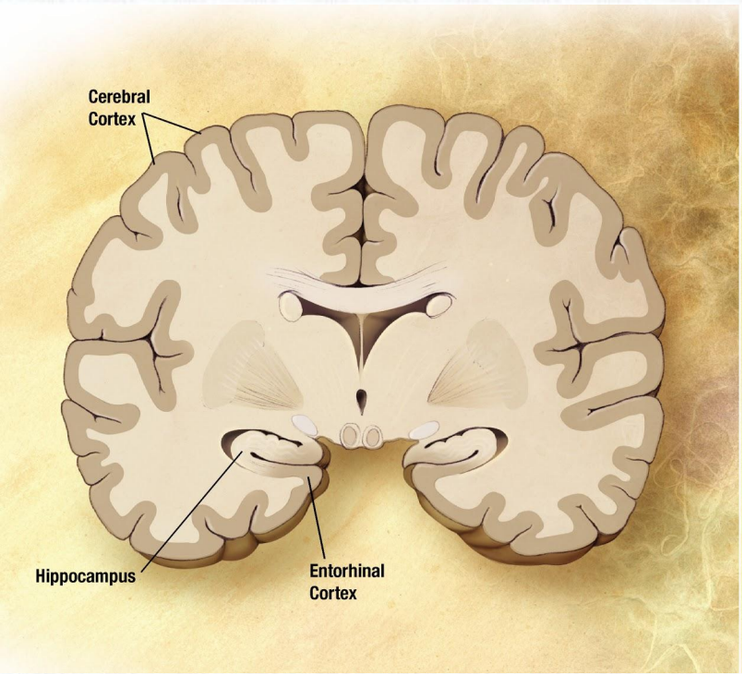
Risk factors

- Apolipoprotein E4 Inheritance
- Down’s syndrome
- Ageing

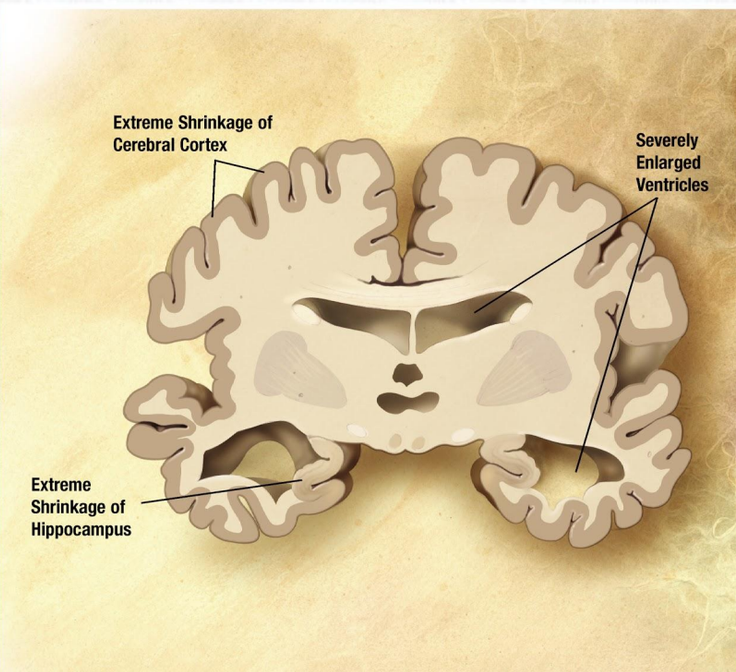
Treatment

- **Acetylcholinesterase inhibitors (first line):**
  - Donepezil
  - Galantamine
  - Rivastigmine
- Memantine - NMDA antagonist (second line)

Alzheimer's Disease



Normal



Alzheimer’s

Alzheimer's Disease

Brain trainer:

A 74-year-old woman was brought to the clinic by her daughter for confusion and memory impairment. The patient would periodically start a task and forget to finish them and has difficulty naming the objects. In the past few months, she has lost 5 kgs and does not sleep well at night. On examination, the patient was agitated and had decreased skin turgor, and not oriented to time or place. She repeatedly asks the same question during the interview. What is the most likely diagnosis?

➔ **Alzheimer’s disease**

Points to look for

- Memory changes before personality changes
- Not a stepwise progression
- Not related to cardiovascular event

Acute Delirium

Features

- Acute onset of abnormality in thought, perception, and level of awareness
- Agitation
- Hallucinations or illusions
- Fluctuating course
- Common in the elderly

Causes

- Acute infections (UTI, Pneumonia and sepsis)
- Drugs (Benzodiazepines and Morphine)
- Urinary retention
- Fecal impaction

Management

- Treatment of underlying cause such as infections
- Supportive management
- Antipsychotics (aggressive patients)

Acute Delirium

Brain trainer:

A 70 year old male was brought to the hospital by his son who says that his father has a drastic behavior and mood changes for the past 4 days. The patient claims that there were thieves who entered the flat at night and the son says that it is not true. Also, the patient has been taking medication for BPH and is having difficulty in urinating for the last few days. What is the most likely diagnosis?

➔ Likely diagnosis: **delirium**

➔ **UTI** or acute **urinary retention** due to **BPH** as the most probable cause

Parkinson's Disease

Presentation

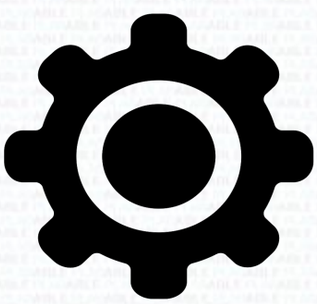
- Resting tremors
- Rigidity
- Bradykinesia
- Festinating gait
- Difficulty in balancing
- Mask-like face

Management

- **Levodopa + carbidopa** (first line)
- MAO-B Inhibitors - selegiline
- Dopamine agonist - pramipexole and ropinirole
- Amantadine

Resting tremors

Festinating gait



Cogwheel rigidity

Multiple System Atrophy or Shy-Drager Syndrome

Features

- Parkinsonism
- Cerebellar ataxia
- Autonomic dysfunction:
  - Urinary incontinence
  - Postural hypotension
  - Erectile dysfunction

Shy-Drager syndrome is as name suggests a multi system atrophy causing group of various symptoms. It is difficult to pinpoint one particular part of CNS involvement.

Multiple System Atrophy or Shy-Drager Syndrome

Brain trainer:

A 53-year-old with a neurological condition which initially started with symptoms of **urinary incontinence**, **erectile dysfunction** and **dizziness** when standing. He is seen to have **ataxia**, **rigidity**, **slow movements** and slight **tremors** of the hands. On examination, postural hypotension is seen. Which is the condition this man is having?

➔ **Shy-Drager syndrome**

Guillain-Barre Syndrome

Features

- History of URTI or gastroenteritis
- **Symmetrical** weakness **starting from the lower limbs**
- Dysphagia, dysarthria and respiratory failure in severe cases
- **Reduced reflexes**
- Paresthesia
- **Sensory loss** starting from the lower limbs
- Urinary retention

Investigations

- Lumbar puncture (for acute setting)
  - ↑ CSF protein, absent elevation of cell count
- Nerve conduction studies (gold standard)

Management

- Plasma exchange
- Intravenous Immunoglobulin
- Respiratory support

- Symmetrical
- Ascending
- Motor loss
- Sensory loss

Guillain-Barre Syndrome

Brain trainer:

A patient with an episode of gastroenteritis a few weeks ago experiences bilateral lower limb weakness that started over a few days and is seen to be ascending. What is the most appropriate test?

➔ **Nerve conduction studies**

Nerve conduction studies are the best test to perform for Guillain Barre syndrome.

Lumbar puncture is nonspecific for Guillain Barre syndrome.

Myasthenia Gravis

Autoantibodies towards acetylcholine receptors

Presentation

- Muscular fatigue on repeated usage (classically tiredness by the end of the day)
- Drooping eyelids
- Diplopia
- Dysphonia
- Dysphagia
- Associated with thymoma

Investigations

- Serum anti-acetylcholine receptor antibody (First line)
- Thymus CT / MRI scan
- Repetitive nerve stimulation test
- Edrophonium stimulation test

Management

- Pyridostigmine (first-line)
- Immunosuppression:
  - Corticosteroids
  - Azathioprine
- Thymectomy

Myasthenia Crisis

- **Presentation:** respiratory failure

- **Management**
  - Intubation and ventilation
  - Immunoglobulins
  - Plasma exchange
  - Steroids

Lambert-Eaton Myasthenic Syndrome

Autoantibodies towards presynaptic calcium channels

Presentation

- Weakness (usually proximal muscles of lower limb)
- Waddling gait
- Associated with small cell cancer of the lung

Investigations

- CT / MRI scan of the chest for malignancy
- Repetitive nerve stimulation test - improves strength momentarily
- Serum voltage-gated calcium-channel antibodies

Management

- Treating the underlying neoplasm
- Diaminopyridine

Epilepsy

A diagnosis requires **at least two** or more seizures more than 24 hours apart

Classification

1. **General** → loss of consciousness (e.g. clonic-tonic or absence)
2. **Focal** → no loss of consciousness (but may progress to generalised)

Presentation (generalised)

- Tongue-biting
- Incontinence
- Trauma
- Full body motor contractions
- Post-ictal confusion

Presentation (focal)

- Motor - automatism, lip-smacking
- Sensory - paresthesia
- Autonomic - increased HR, BP
- Psychiatric - fear, unrealism

Epilepsy vs Non-Epileptic Attack Disorder (NEAD)

	Epilepsy	NEAD
History	Genetic factor	History of childhood physical or sexual abuse
Triggers	Sleep deprivation, alcohol, flashing lights, sudden noises	Stress, panic
Occur in company	No association	Common
Onset	Sudden	Gradual
Duration	0.5 to 2 mins	Often > 2 mins (sometimes hours)
Pelvic thrusting	Rare	Occasional
Breathing	Apnoeic	Continuous

Epilepsy vs Non-Epileptic Attack Disorder (NEAD)

	Epilepsy	NEAD
Eyes/mouth	Open	Closed
Side-to-side head movement	Rare	Common
Asynchronous movements	Rare	Common
Tongue biting	Common	Rare
Incontinence	Common	Rare
Self-injury during attack	Common	Rare
Crying during attack	Rare	Common
Post-ictal EEG	Slow	Normal
Post-ictal confusion	Common	Rare
Medications	Responsive	Not responsive

Absence Seizure

Brain trainer:

A child is briefly observed staring blankly into space and up-rolling their eyes whilst maintaining balance sitting in a chair.
What is the diagnosis?

➔ **Absence seizure**

DVLA

Brain trainer:

A lorry driver has an epileptic seizure for the first time. What procedure must be followed?

➔ **Cease driving, inform DVLA, commence driving once certain conditions are met**

Suspension to license after seizure:

- Car driver → 1 year
- Lorry driver → 5 years

Epilepsy & Pregnancy

Brain trainer:

Which antiepileptic is the least desirable in pregnancy?

➔ **Sodium valproate**

If planning a pregnancy, advise changing to a different antiepileptic. If already pregnant, continue with sodium valproate.

High dose folic acid (5mg) is recommended preconceptually up to the end of the first trimester for those taking antiepileptics.

Status Epilepticus

Status epilepticus is a single epileptic seizure lasting more than 5 minutes or having at least two seizures within 5 minutes without full recovery in between.

Management

1. IV lorazepam (if IV access already established)
2. Buccal midazolam or rectal diazepam

If 2 doses of the above have failed, give::

1. IV phenytoin
2. ICU referral → IV phenobarbital → intubation

Cranial Nerve Nuclei

Brain trainer:

From which part of the brain do the respective cranial nerves originate?

- ➔ **Cortex → 1,2**
- ➔ **Midbrain → 3,4**
- ➔ **Pons → 5,6,7,8**
- ➔ **Medulla → 9,10,11,12**

Horner Syndrome

Brain trainer:

A patient presenting with pinpoint pupils, reduced sweating and a drooping eyelid.
What is the diagnosis?

➔ **Horner syndrome**

Remember: Horner's MAP:

- **M**iosis
- **A**nhidrosis
- **P**tosis

Amyotrophic Lateral Sclerosis

Degenerative condition affecting the motor neurons of the spinal cord and the motor cranial nuclei

Presentation

- Both **LMN** and **UMN** signs
- Limb weakness (usually upper limb)
- Foot drop
- Slurring of speech
- Dysphagia
- Fasciculations

Treatment

- Riluzole
- Non-invasive positive pressure ventilation
- Nutritional support

Amyotrophic Lateral Sclerosis

Brain trainer:

A 45 year old male known to have motor neuron disease with progressive difficulty in swallowing, drooling of saliva, inability to eat properly and choking of food. What is the best method for providing nutrition for this patient?

➔ **Percutaneous endoscopic gastrostomy**

Syringomyelia

Fluid filled tubular cyst (syrinx) in the spinal cord (usually cervical column) → nervous compression

Presentation

- Loss of pain and temperature sensation (Particularly hands)
- Progressive weakness of the arms and legs
- Headaches
- Bladder disturbances

Investigation

- MRI (gold standard)

Syringobulbia

Syrinx extends into the medulla of the brain stem. The cranial nerves become affected

Mechanical Lower Back Pain

Brain trainer:

A a patient presents with benign mechanical lower back pain (all other causes have been ruled out). What is the best advice?

➔ **Analgesia + maintain normal activities + avoid sitting / heavy lifting**

Bed rest is not recommended

Multiple Sclerosis

Autoimmune disorder causing demyelination of the neurons in the brain and spinal cord

Presentation

- Reduced vision or loss of vision (**optic neuritis**)
- Double vision
- Facial weakness
- Paresthesia and numbness of the extremities

Investigations

- **MRI** - **periventricular lesions** and white matter abnormalities
- Visually evoked potential studies
- **CSF:**
  - ↑ Protein
  - ↑ Immunoglobulins (o**ligoclonal bands**)

Management

Acute:

- Oral/IV methylprednisolone

Disease modifying therapy for relapses:

- Interferon beta
- Glatiramer
- Natalizumab (second-line)

Multiple sclerosis → MRI → Methylprednisolone

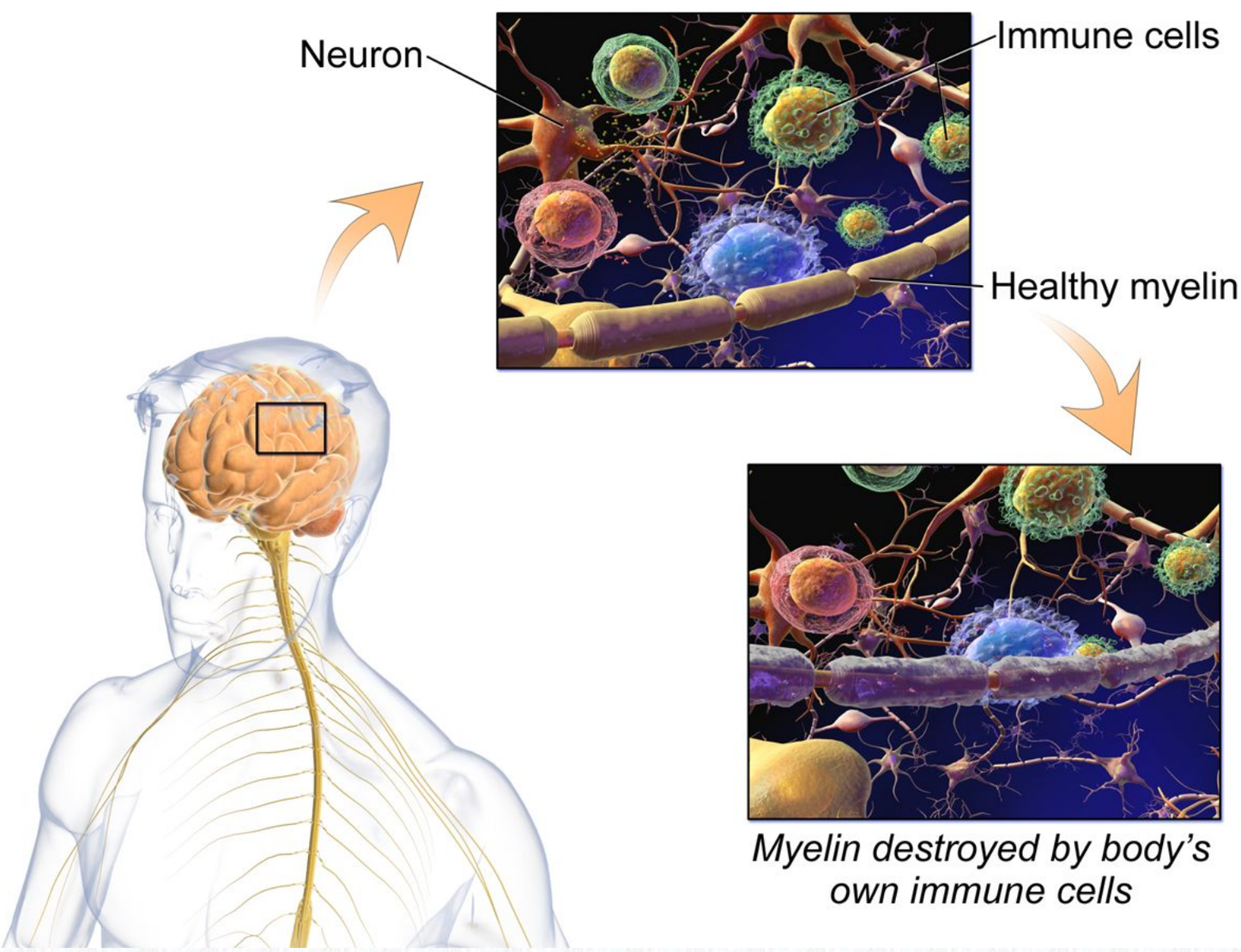
Multiple Sclerosis

Brain trainer:

A 40 year old female presented with blurred vision and intermittent clumsiness for the past 4 months. She had similar episodes 2 years back. On examination, the reflexes are brisk in her arm and the optic disk is pale.

➔ Likely diagnosis: **multiple sclerosis** (symptoms dispersed in time and location in brain + optic neuritis)
➔ Investigation of choice to confirm: **MRI brain**
➔ Acute management: **methylprednisolone**

Multiple Sclerosis



Stroke and TIA

Stroke: sudden focal neurological loss due to vascular origin either thrombosis or bleeding and is lasting **>24 hours**

TIA: Sudden focal neurological loss due to vascular origin lasting **<24 hours**

Immediate treatment for ischemic stroke

- Aspirin 300 mg for 2 weeks (after ruling out haemorrhagic stroke by CT scan)
- If presenting <4.5 hrs thrombolysis with alteplase

Long term treatment for ischemic stroke

- First line - clopidogrel 75 mg lifelong
- Second line - aspirin 75 mg + dipyridamole 200 mg lifelong

If the patient has atrial fibrillation - warfarin or NOAC should be given instead of clopidogrel

Stroke and TIA

Brain trainer:

A 71 year old woman has sudden onset speech disturbance and asymmetric weakness of face and arm which started 2 hours ago. A CT scan rules out a haemorrhagic stroke. She has atrial fibrillation on her ECG. What is the long term management of this patient?

➔ **Warfarin / DOAC + statins**

Remember:

Ischaemic stroke + atrial fibrillation
= Warfarin/DOAC + statin

Ischaemic stroke + No atrial fibrillation
= Clopidogrel + statin

Stroke Syndromes

Weber's syndrome (midbrain infarct)	• Branch of posterior cerebral artery occlusion • Ipsilateral oculomotor nerve palsy • Contralateral hemiparesis
Wallenberg syndrome (lateral medullary syndrome)	• PICA - Posterior inferior cerebellar artery occlusion • Ipsilateral Horner's syndrome • Contralateral loss of pain and temperature in the limbs
Medial medullary syndrome	• Anterior spinal artery occlusion • Ipsilateral tongue paresis • Contralateral hemiplegia with facial sparing
Cerebellar infarction	• Intention tremor • Ataxia • Dysarthria • Scanning speech
Posterior cerebral artery occlusion	• Occipital lobe infarction • Hemianopia with macular sparing

Bulbar and Pseudobulbar Palsy

Bulbar palsy	Pseudobulbar palsy
Lower motor neuron palsy involving cranial nerves	Upper motor neuron palsy involving corticobulbar tracts
Wasted tongue Fasciculations	Spastic tongue
Nasal speech	Spastic dysarthria

Bulbar and Pseudobulbar Palsy

Brain trainer:

A 55 year old male presents with difficulty in swallowing, bovine cough, tongue atrophy and fasciculations. He has difficulty in articulating certain words and have suffered from aspiration pneumonia in the past. What is the likely cause for his dysphagia?

➔ Most likely cause: **bulbar palsy**

Tremors

Essential tremors	• Absent at rest • Do not resolve with distraction
Psychogenic tremor	• Absent at rest • Resolves with distraction
Cerebellar tremor	• Intentional tremor - when voluntarily trying to pick something • Nystagmus • Ataxia • Dysarthria
Parkinson's tremor	• Resting tremor • Bradikinesia • Rigidity • Mask like face

Meningitis

	Bacterial	Viral	Tuberculous
Glucose	↓	Normal	Normal / ↓
Protein	↑	Normal / ↑	↑
WBC	Mainly Neutrophils	Mainly Lympho cyte	Neutrophils followed by Lymphocytes
Most common organism	**Neonates:** *GBS* *Listeria* *E.coli* **Adults:** *S.pneumoniae* *N.meningitidis* **Elderly:** *Listeria* *S.pneumoniae*	*Entero -virus* HSV	*M. tuberculosis*

Meningitis

Presentation

- Headache
- Fever
- Neck stiffness
- Non-blanching rash

Kernig's sign: Pain and resistance on passive knee extension with hips fully flexed

Brudzinski's sign: Hips flex on bending the head forward

Treatment

- **Bacterial:**
  - <60 yrs - IV ceftriaxone
  - >60 yrs - IV ceftriaxone + ampicillin
- **Viral:** IV aciclovir
- **TB:** anti-tuberculosis medications
- Follow up with hearing test in children as hearing loss is one of the complications in children

Prophylaxis for close contacts of meningococcal meningitis is usually with ciprofloxacin or rifampicin

Cerebral Abscess

Brain trainer:

A patient presents with fever, headache and focal neurological signs. CT head scan shows ring-enhancing lesions. What is the diagnosis?

➔ **Cerebral abscess**

Cervical Spondylosis

Brain trainer:

A 50 year old female patient presents with neck pain which is worsened on movement. She also complains of numbness in the arms. On examination there is limited range of movement in the neck. What is the most likely diagnosis?

➔ **Cervical spondylosis**

Encephalitis

Brain trainer:

A patient presents with fever, reduced consciousness, motor and sensory deficits and behavioral disturbance. There is no nuchal rigidity and Kernig’s and Brudzinski's signs are negative. What is the most likely diagnosis?

➔ **Encephalitis**

Headaches

Tension-type headache

- Bilateral
- Most common type
- Mild - moderate pain without nausea
- Short duration
- **Treatment:** Reassurance and NSAIDS

Migraine

- **Unilateral**
- Throbbing pain
- Visual disturbances - **aura** and flickering of light
- Nausea
- Common in females

Treatment

Mild cases:

- NSAIDS - ibuprofen

Moderate to severe:

- Triptans
- Ergotamine

Migraine prophylaxis

- **Beta blockers** - propranolol (first-line)
- Amitriptyline
- Topiramate and sodium valproate (second-line)

Headaches

Cluster headache

- **Unilateral** near the eye
- Severe pain **without aura**
- Associated with ipsilateral lacrimation, rhinorrhoea, nasal congestion, and conjunctival injection
- Common in males
- Occur in bouts lasting 6-12 weeks in 1-2 years

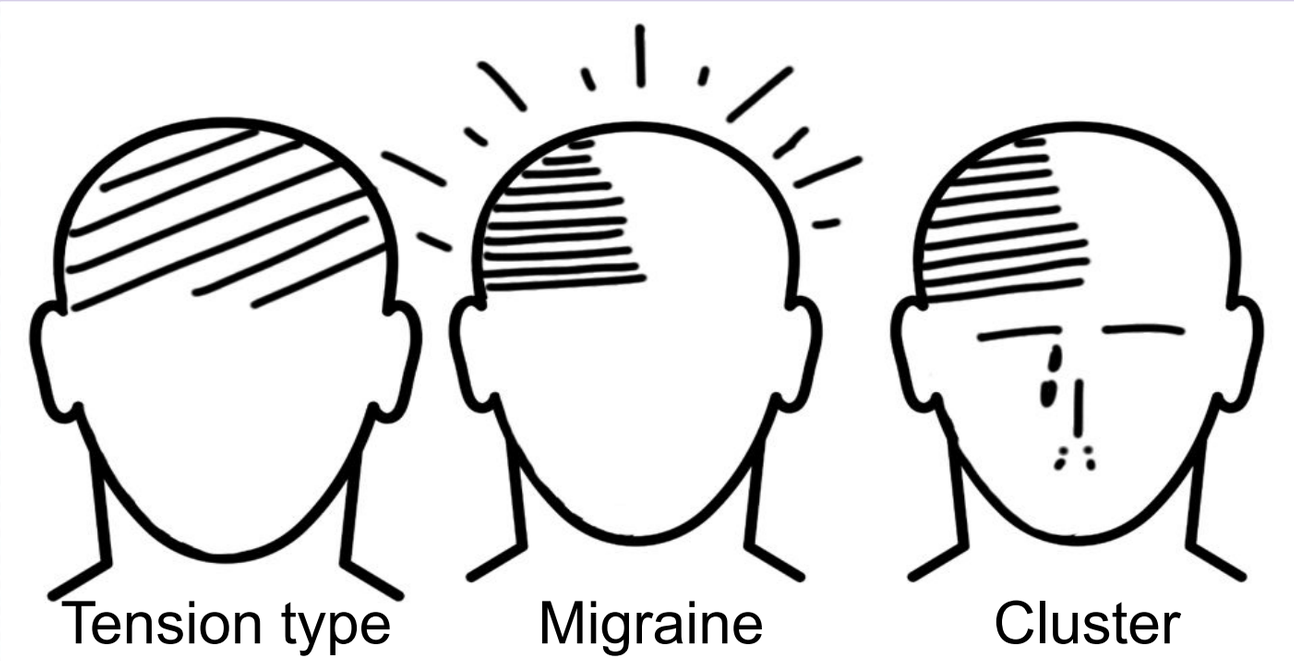
Treatment

Acute attack:

- Sumatriptan (subcutaneous injection)
- Oxygen

Prophylaxis:

- Verapamil (first-line)



Benign Paroxysmal Positional Vertigo

Common cause of vertigo due to otoliths

Presentation

- Vertigo brought out by change in head position
- Sudden in onset
- Lasts 20-30 seconds
- Nausea
- **Dix-Hallpike** test is used to confirm

Management

- Epley's manoeuvre (reposition the otoliths)

Vestibular Neuritis and Labyrinthitis

Presentation

- Sudden onset and severe vertigo brought out by change in head position
- Not precipitated by head movements
- Hearing loss and tinnitus in Labyrinthitis
- **H/o upper respiratory tract infection (URI)**

Management

- Prochlorperazine

Meniere's Disease

Presentation

- Vertigo
- Ear fullness
- Tinnitus
- Sensorineural hearing loss
- Episodic (6-11 clusters per year)

Investigations

- Audiometry
- MRI brain (to rule out vestibular neuroma)

Management

Acute attacks

- Prochlorperazine or cinnarizine

Prophylaxis

- Betahistine

Acoustic Neuroma

Presentation

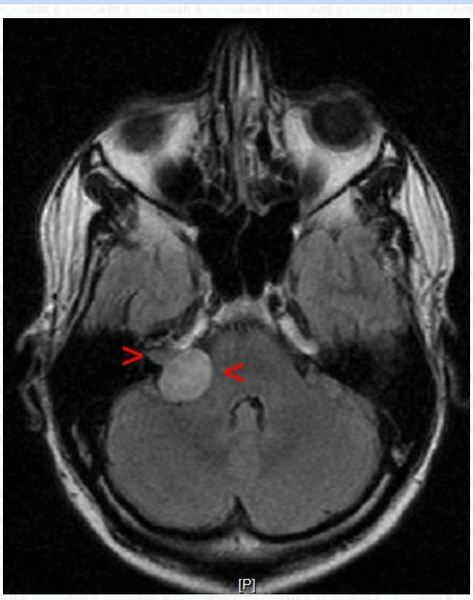
- Unilateral hearing loss
- Tinnitus
- Facial weakness (facial nerve compression)
- Facial pain or numbness (trigeminal nerve)
- Ataxia (cerebellar compression)
- **Bilateral** acoustic neuroma occurs in **neurofibromatosis-type 2**

Investigations

- MRI brain
- Audiometry

Management

- Microsurgery (most common)
- Stereotactic radiosurgery
- Watch and wait



Sudden Falls

Drop attacks

- Sudden fall without loss of consciousness
- **Causes:** transient vertebrobasilar insufficiency, knee instability and leg weakness

Stokes Adams syndrome

- Sudden fall with loss of consciousness (few secs)
- **Cause:** Intermittent complete heart block

Vasovagal syncope

- Transient loss of consciousness due to ↓ BP
- **Causes:** emotional trigger, pain or prolonged standing

Situational syncope

- Micturition syncope
- Defecation syncope

Seizures

- Sudden fall + unconsciousness + postictal state

Hypoglycemia

- Unconsciousness or ↓ level of unconsciousness
- **Causes:** diabetic on insulin or insulinoma
- **Presentation:** shaking, sweating & palpitations
- **Treatment:** glucagon IM/SC or oral glucose (at home) or 20% IV glucose (in hospital)

Cauda Equina Syndrome

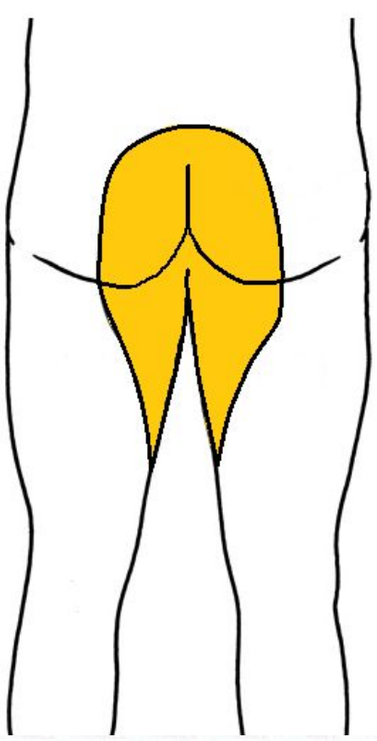
Compression of the cauda equina due to disk herniation, tumour or trauma

Presentation

- Back pain radiating to the legs
- Weakness of the legs
- Sensory disturbance of the legs
- Bowel / bladder dysfunction
- Saddle and perineal anaesthesia

Management

- Urgent surgical decompression
- Corticosteroids



Saddle anaesthesia

Aphasia

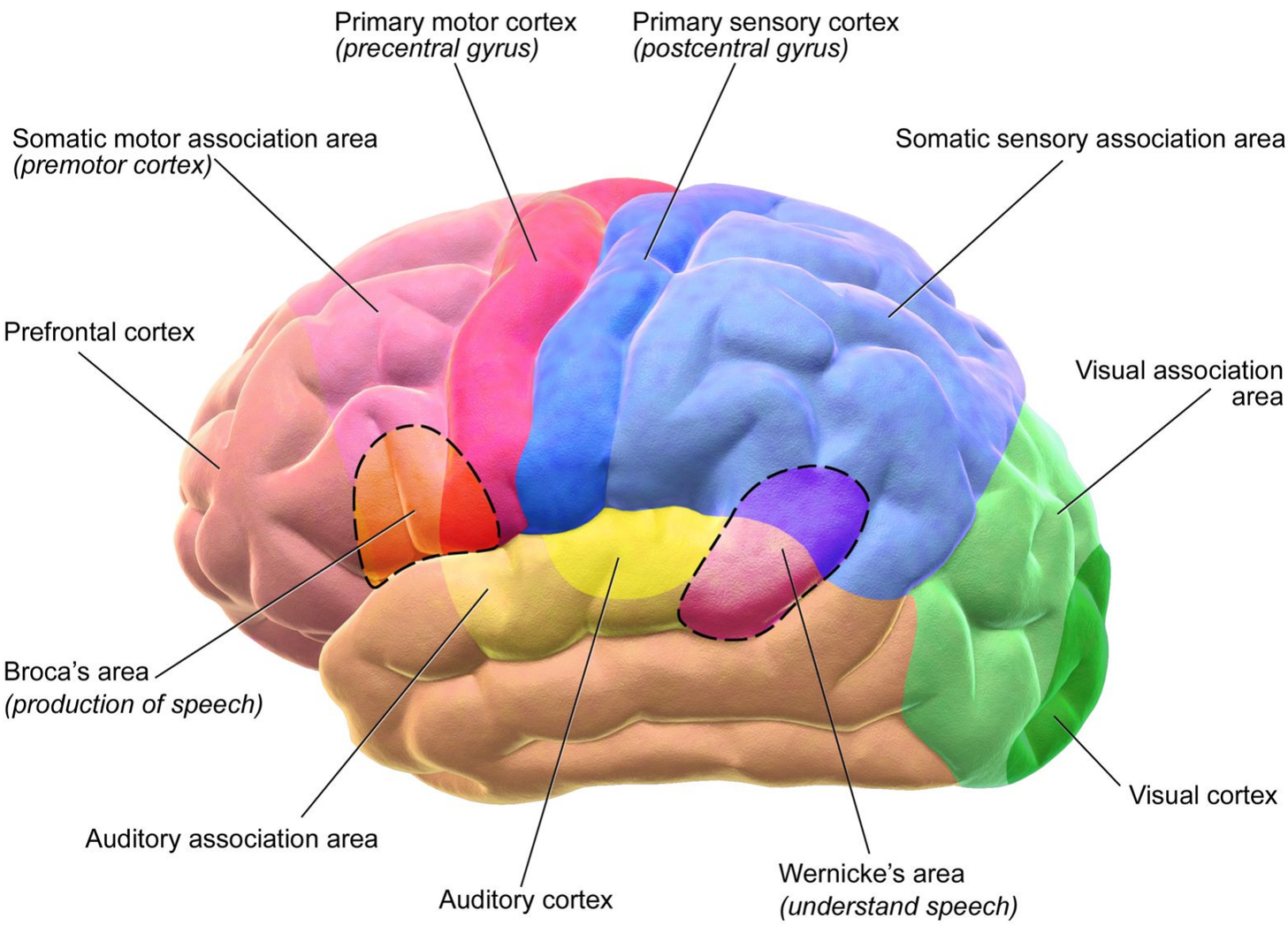
Broca's Aphasia (inferior frontal lobe of dominant hemisphere):

- Broken speech
- Patient can understand

Wernicke's Aphasia (superior temporal lobe of dominant hemisphere):

- Fluent but unmeaningful speech
- Patient does not understand

Motor and Sensory Regions of the Cerebral Cortex



Obstructive Sleep Apnoea Syndrome

Intermittent and repeated collapse of the upper airway during sleep

Features

- Daytime sleepiness and fatigue
- Common in males
- Snoring at night
- Associated with obesity and alcohol consumption

Investigation

- Polysomnography (gold standard)

Management

- Continuous positive airway pressure (gold standard)
- Weight reduction
- Cutting down alcohol consumption and smoking

Facial Palsy

Damage could be either UMN or LMN

Bell's palsy (LMN palsy)

- Weakness of the muscles of facial expression
- Absence of forehead wrinkles (present in UMN lesion)
- Difficulty in closing eye
- Deviation of angle of mouth to the normal side
- Difficulty in holding air in the mouth

Management

- Prednisolone
- Physiotherapy

Bell's Palsy

Absent wrinkles (affected side)

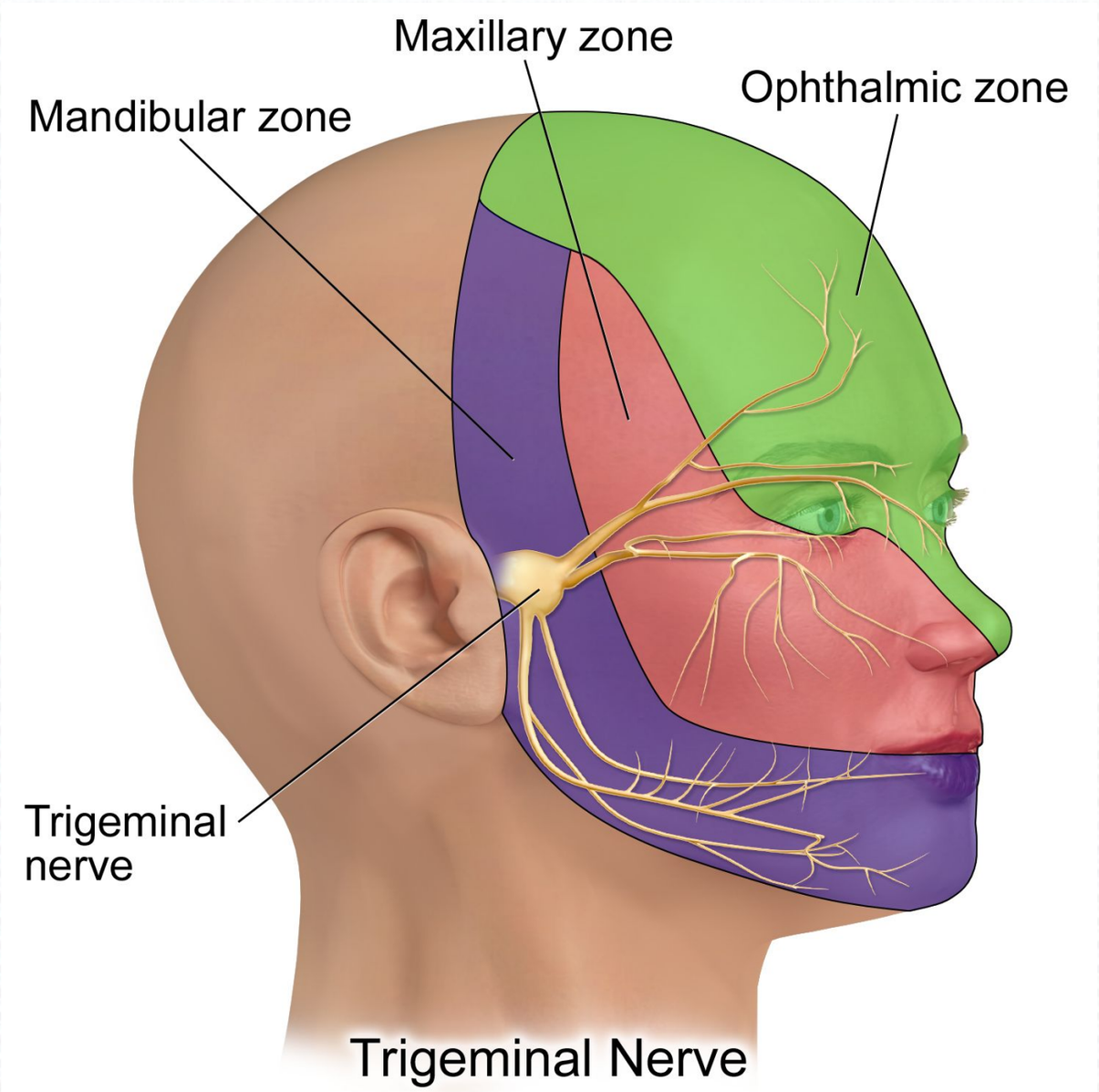
Trigeminal Neuralgia

Presentation

- Acute, unilateral sharp-stabbing pain in the distribution of the trigeminal nerve
- Pain lasts from few seconds to 2 minutes

Management

- Carbamazepine (first-line)



Cavernous Sinus Thrombosis

Presentation

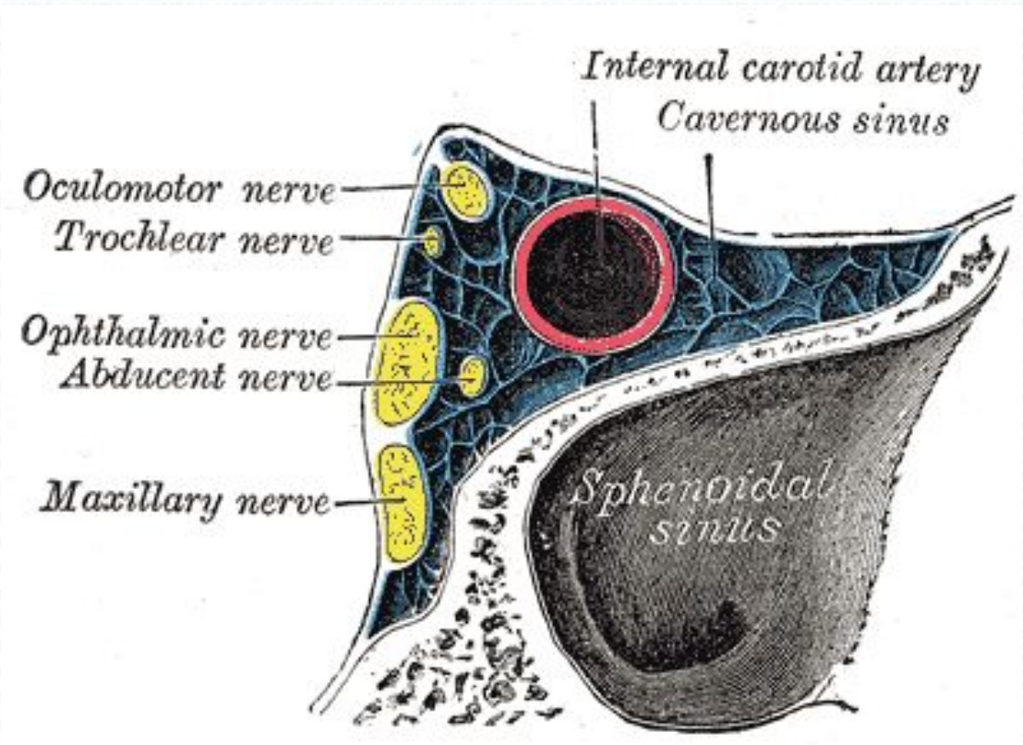
- Headache
- Unilateral periorbital oedema
- Photophobia
- Proptosis
- Paralysis of cranial nerves:
  - VI - Diplopia (Most common)
  - III - Ptosis, mydriasis & eye muscle weakness

Investigation

- CT scan

Treatment

- Broad-spectrum antibiotics
- Corticosteroids



Restless Leg Syndrome

Presentation

- An urge to move legs usually associated with creepy or crawling uncomfortable sensation in the legs
- Symptoms ↑ during inactivity and cause sleep disturbance

Investigations

- Serum ferritin
  (since RLS is associated with iron deficiency)

Treatment

- Pramipexole
- Ropinirole
- Iron supplements if serum ferritin is low

Intracranial Abscess

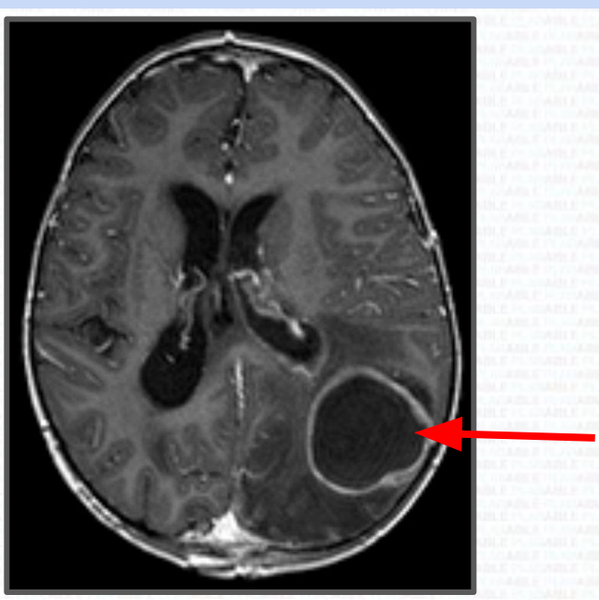
- Spread from local infections of ear, mastoid cavity, paranasal sinuses etc
- Fever
- Headache
- Confusion and drowsiness
- Focal neurological deficit
- ↑ intracranial pressure
- Most commonly caused by bacteria > fungal

Investigation

- CT scan with contrast (investigation of choice) - ring enhancing lesions
- Aspiration and culture of the abscess

Management

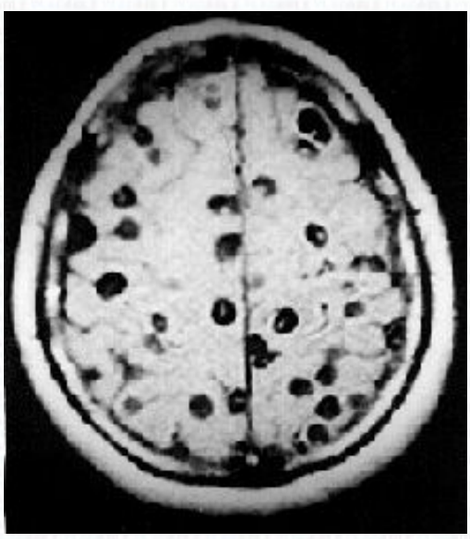
- Aspiration of the abscess
- Empirical IV antibiotics for bacterial
- IV antifungal for fungal



Other Conditions

Neurocysticercosis

- Seizures
- Caused by *Taenia solium* (Pork tapeworm)
- **CT brain:** Multiple calcified lesions
- Management:
  - Niclosamide
  - Praziquantel



Cerebral toxoplasmosis

- Encephalitis in immunocompromised host (HIV)
  - Seizures
  - Confusion
  - Focal neurological deficits
- MRI brain: multiple ring enhancing lesions
- **Treatment:** pyrimethamine/sulfadiazine and folinic acid

Antiepileptics in Pregnancy

- **Before getting pregnant** change sodium valproate to either **carbamazepine** or **lamotrigine**

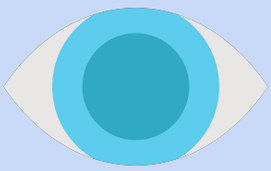
- Add **folic acid 5 mg** to any patient who is taking antiepileptic and wants to get pregnant and continue upto 12 weeks of pregnancy

- If patient is seizure free > 2 years consider stopping antiepileptics altogether

Pupillary reactions to light

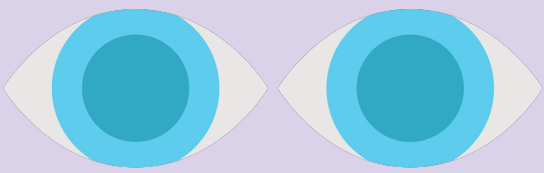
Unilateral dilated pupil

- Space occupying lesion
  - Tumour
  - Haematoma
  - Abscess



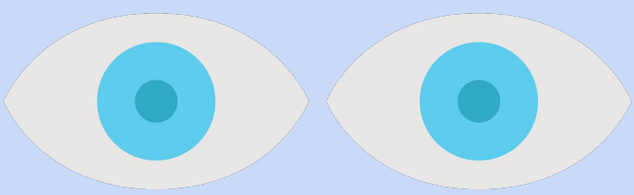
Bilateral dilated pupils

- Amitriptyline (TCA) overdose
- Cocaine overdose



Bilateral constricted pupils

- Opioid overdose
  - Morphine
  - Heroin
- CVA of the brainstem



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