

5 MEDICAL ETHICS



- Set of moral principle given by MCI.
- Violation of which is punishable.
- Infamous conduct professional misconduct.
- Unethical act by doctor.
- It is punishable which is given by state medical council.

Punishment by SMC (State Medical Council)

- SMC appeal to Central health ministry + MCI
1. Warning
 2. Penal Erasure of Name
 - Temporary
 - Permanent - For serious offences is called as professional death sentence

List of unethical acts

- 6A's.
 - A - Adultery
 - A - Inappropriate Advertisement
 - A - Criminal Abortion
 - A - Association with any pharmaceutical company
 - A - Addiction
 - A - Alcohol
- } Treating the patient under the influence of these.
- Covering: Employing unqualified person
 - Dichotomy: Fee spitting.
 - Accepting gifts
 - Issuing false certificate.

MEDICAL NEGLIGENCE / PROFESSIONAL MALPRACTICES

- Commission of wrong things and omission of right things causing damage to the patient.
- 4D's
 - Duty owed to patient
 - Dereliction of duty
 - Damage
 - Direct causation
- Types:
 - Civil negligence
 - Criminal negligence
 - Contributory negligence

	Civil	Criminal	Contributory
Act	Due to simple lack of care / skill	Gross negligence sometimes causing death	Doctor negligent but patient also negligent
Burden of proof	Patient	Prosecution	Doctor
Court	Consumer court	Criminal court	Civil charges
Punishment	Fine	Fine, imprisonment	Amount of fine is reduced

DOCTRINES

Res Ipsa Loquitur (Facts speaks for itself)

- Negligent factor is so obvious that the thing (Act) speaks for itself.
- No needs of expert evidence.
- Burden of proof lies on the Doctor e.g. Surgery on wrong side of the body.

MEDICAL Maloccurrence

- Accidental damage to the patient - Doctor is not liable for this

Vicarious Liability

- Let the master answer / Respondent Superior
- Senior who is in charge of the junior should be answerable.
- Applicable only if
 - Employee - Employer relationship
 - Employee's conduct should be within the scope of employment
 - Act should occur when he was on job

RES INDICATA (LIMITATION PERIOD)

- It describe the time duration till which one can file a case against negligence of the doctor. It is 2 Years from the date of discovery of the negligence.

These two doctrine are used for Contributory Negligence

Last clear chance doctrine rule

- If the doctor fails to avoid the damage in the last clear chance.
- Doctor is liable
- **Avoidable consequences rule**
 - Patient could have avoided the damage but fails to do so
 - Patient is liable

CONSENT

- For physical examination: min age 12 yrs.
- For surgery: 18 yrs.
- **Doctrine of full disclosure:** Complete info given to the patient
- **Doctrine of extended consent**
 - In an unanticipated situation where doctor has to respond considering the risks associated with it for the benefit of the patient
 - Doctor is not liable for it
- **Doctrine of informed refusal**
 - Pt. has right to refuse and doctor has to document it in writing. Seen usually in examination (sexual assault examination)

- **Therapeutic privilege** - Doctor can decide how much info needed to be given. Usually applicable in psychiatry disease
- **Emergency Doctrine** - 92 IPC, consent is not needed for emergency cases to save the life of patient.
- **Locoparentis:** On vacation, if child get ill, the consent for treatment given by teacher. Person incharge will give consent.
- **Therapeutic waiver:** Patient waived his right to give consent
- **Consent Invalid (under section 90 IPC) in cases of**
 - Child <12 yrs
 - Insanity
 - Under the influence of someone
 - Intoxication



Extra Edge

- **No need of consent**
 - In emergency condition: 92 IPC
 - Therapeutic waiver
 - Medicolegal autopsy

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HUMAN IDENTIFICATION



For Presumptive Identification: We have 4 important parameters.

00:00:10

- Race
- Age
- Sex
- Stature

For Complete Identification, we have

1. **Dactylography:** Most absolute/precise method for identification. We can differentiate even identical twins
2. **DNA Fingerprinting**

IDENTIFICATION OF RACE

3 Types of races

1. Negroid
 2. Caucasoid
 3. Mongoloids
- Race can be determined from:
 - a. Bones
 - b. Teeth

Teeth

- Race from dentition
 - Mongoloid (Mnemonic - SET)
 - S : Shovel incisor
 - E : Enamel pearl
 - T : Taurodontism (bull tooth) - Increased pulp cavity, bigger cusp
 - Caucasoid tooth
 - Carabelli's cusp - Additional nodule in the molar 1.
 - Negroid tooth
 - They have a greater number of cusps in molars and premolars

Bones

- Mainly from "SKULL"

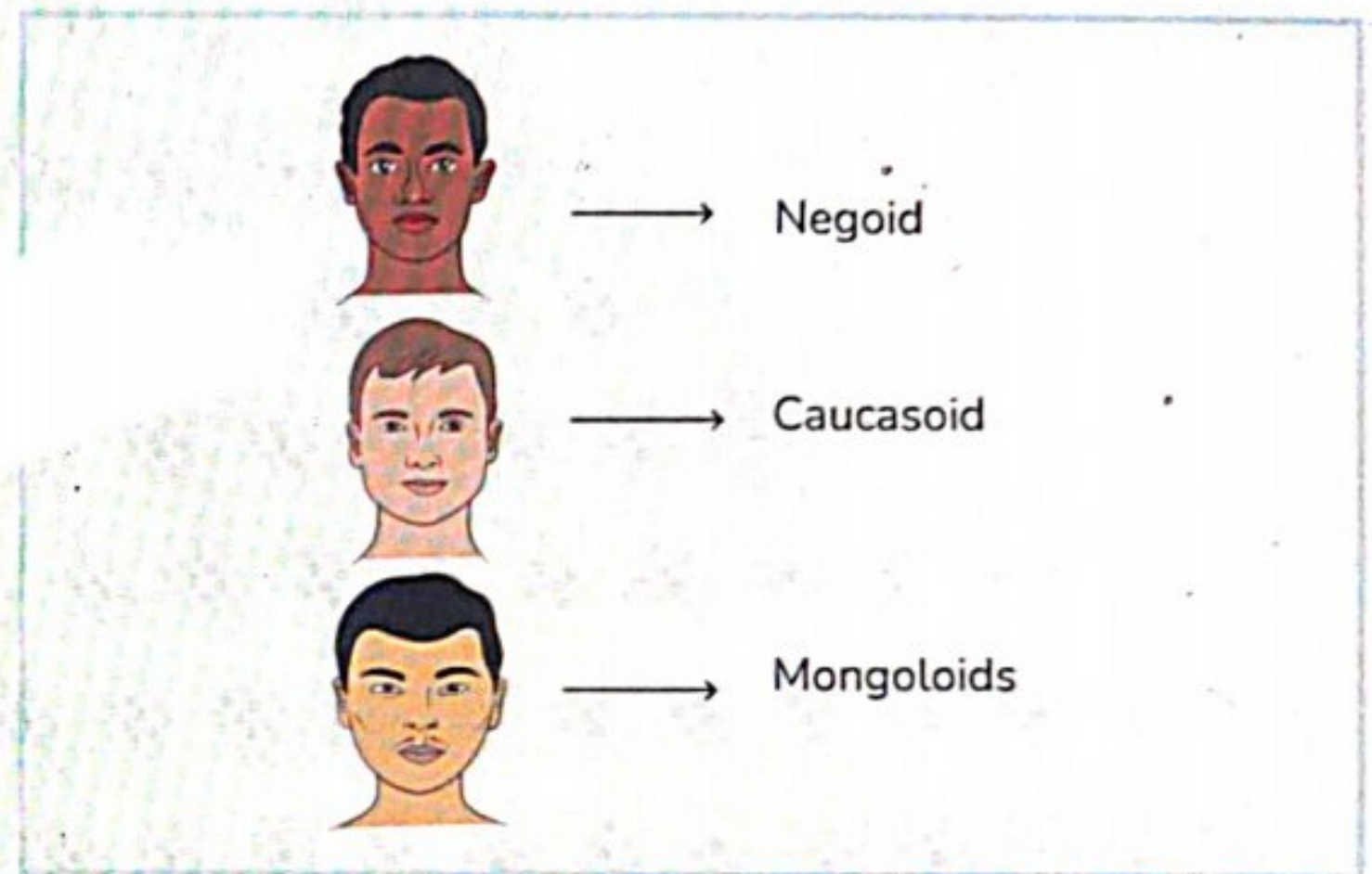
Indices for race determination:

- Cephalic index
- Crural index
- Brachial index
- Intermembral index
- Humero femoral index

CEPHALIC INDEX

• **Cephalic Index (CI)** = $\frac{\text{Maximum breadth of skull}}{\text{Maximum length of skull}} \times 100$

- 70 - 75: Dolichol - Cephalic (Long Headed)
 - **Negroid** (Africans, Aryans)
- 75 - 80: Mesaticephalic (Medium Headed)
 - **Caucasoid** (Europeans and Chinese), **Indians**
- 80 - 85: Brachycephalic (Short Headed)
 - **Mongoloids** (Japanese)



AGE ESTIMATION

Rule of Hasse	Rule of Morrison
<ul style="list-style-type: none"> ○ Gestational age of fetus in the first 5 months ○ Gestational age = $\sqrt{\text{CHL}}$ (CHL = Crown to heel length) CRL = 2/3 CHL 	<ul style="list-style-type: none"> ○ Gestational age of fetus in the second 5 months (6-10 months) ○ Gestational age = $\frac{\text{CHL}}{5}$

By Ossification Center

- 5 month IUL = Calcaneum appears
- 7 month IUL = Talus
- 36th week = Lower end of femur
- 38th week = Upper end of tibia
- Birth = Cuboid appears

Sacrum

- All 5 center fuses to form the single bone at age of 25 years

Sternum

MANUBRIUM	5 months	
Body		} 60 yrs fuse at 25 yrs
1	5 months	
2	7 months	
3	7 months	
4	10 months	
Xiphoid process	3 yrs	} 40 yrs

Elbow Joint

Mnemonic - CRITOE

- Capitulum - 1 yr
- Radial head - 5yr
- Inner epicondyle - 6yr
- Trochlea - 9yr
- Olecranon - 9yr
- Ext. epicondyle - 11yr

All of them fuse to form elbow joint at 16 yr

Carpal Bones

- Capitate - 2month
- Hamate - 3 m - 1 year
- Triquetral - 3 yr
- Lunate - 4 years
- Scaphoid - 5 years
- Trapezium, Trapezoid - 6 years
- Pisiform - 9-12 yr

Skull Sutures

- Posterior fontanelle (lambda) - 3 m - 6m
- Anterior fontanelle (Bregma) - 18 m
- Metopic suture - 9m - 2yr
- Basisphenoid and Basisphenoid junction fuses around 18-21-year

FOR AGE > 30 yr best bone to identify is Pubic symphysial surface

Stature

- Femur : 27% of entire stature height is contributed by femur
- Tibia : 22%
- Humerus : 20%



Important Information

BEST BONE TO FIND RACE - SKULL

BEST BONE TO FIND STATURE - FEMUR

AGE ESTIMATION BY DENTITION

- Primary/Temporary/Deciduous = 20
 - M_2, M_1, C, I, C, I
 - Each quadrant = 5 teeth
- Secondary/Permanent = 32
 - $M_3, M_2, M_1, PM_2, PM_1, C, I, C, I$
 - Superadded teeth (are added extra) - 12
 - Successional teeth - 20
- All Permanent Molars = Superadded
- Each quadrant = 8 teeth

Sequence of eruption	
Temporary	Permanent
I - 6 months	M1 - 6 yrs.
M1 - 12 month	CI - 7 to 8 years
C - 18 month	LI - 8 to 9 years
M - 24 months	PM1 - 9 to 10 years
	PM2 - 10 to 11 years
	C - 11 to 12 years
	M2 - 12 to 14 years
	M3 - 17 to 25 years (Wisdom tooth)

Eruption	
Temporary	Permanent
○ First Tooth to erupt - Lower Central	○ First tooth to erupt - Molar 1 Incisor

- Period of mixed dentition - both permanent and temporary teeth can be seen together. Total number of teeth remains the same = 24.
- Total number of Permanent teeth = $(Age - 5) * 4$. During this period

Gustafson's Criteria

- Used in more than 25 years of Age
- 6 Criteria (APSRTC)
 - Attrition
 - Parodontosis
 - Secondary dentin: 2nd Best Criteria
 - Root resorption
 - Transparency of root: Best criteria
 - Cementum apposition

Boyde's Method

- Counting the number of incremental lines
- Used in dead infants
- 1st line: Neonatal line appears on 2nd - 3rd day of birth. seen by electron Microscope

Stack's Formulae

- Used in infancy and it based on height and weight of tooth.

Lamendin's Method

- Modification of Gustafson's Criteria
- Transparency of root & Parodontosis - Only uses these two criteria.

Dental Charting

Palmer notation

Permanent Teeth															
Upper right								Upper left							
8J	7J	6J	5J	4J	3J	2J	1J	L1	L2	L3	L4	L5	L6	L7	L8
8j	7j	6j	5j	4j	3j	2j	1j	r1	r2	r3	r4	r5	r6	r7	r8
Lower right								Lower left							
Deciduous teeth (baby teeth)															
Upper right								Upper left							
			EJ	DJ	CJ	BJ	AJ	LA	LB	LC	LD	LE			
			Ej	Dj	Cj	Bj	Aj	lA	lB	lC	lD	lE			
Lower right								Lower left							

Haderups system

Permanent	
R	L
8+7+6+5+4+3+2+1+	+1+2+3+4+5+6+7+8
8-7-6-5-4-3-2-1-	-1-2-3-4-5-6-7-8

FDI method / 2-digit system (MOST IMPORTANT)

PREFIX (CLOCKWISE)	
1 2	4 3
18 17 16 15 14 13 12 11	21 22 23 24 25 26 27 28
48 47 46 45 44 43 42 41	31 32 33 34 35 36 37 38
PREFIX (CLOCKWISE)	
5 6	8 7
55 54 53 52 51	61 62 63 64 65
85 84 83 82 81	71 72 73 74 75

IDENTIFICATION OF SEX

Refer Table 9.1

- **Sciatic Index = Best Index for Identification of Sex.**
- Pelvis is the one bone with which we can find the sex even before the puberty

Ashley's Rule of 149

- Sex Differentiation from sternal length.
 - Measuring of Sternal length (Body + Manubrium)
 - If > 149 mm then - Male
 - If < 149 mm then - Female

KROGMAN'S Index

- Pelvis - 95 % (single best),
 - Skull - 90%,
 - Long Bones - 80%
 - To increase Accuracy
 - Pelvis + Skull
 - Pelvis + Long bone
- } 98%

100% Accuracy is only possible with complete skeleton

DACTYLOGRAPHY

- Based on finger printing - **Best Method of identification**
- 12 - 24 weeks Intra Uterine Life
- Better than DNA fingerprinting because it is **different among twins also.**
- Permanent alterations of fingerprints is seen in
 - Leprosy
 - Electrocution
 - Radiation
 - Charring
- Different Type of Patterns
 - Loops: **Most common**
 - Whorls
 - Arch
 - Composite: **Least common**
- Loops (60-70%) Whorls (25-35 %) Arches (6-7 %) Composite (1-2%)



Table 9.1

Character	Male	Female	Exception
Skull Muscle markings, prominences and ridges	More prominent	Less prominent	Frontal Eminence and Parietal Eminence
Pelvis <ul style="list-style-type: none"> ○ All Prominence including muscle markings and ridges Shape of bone ○ Shape of Obturator Foramen ○ Ischial tuberosity ○ Grater sciatic notch (single best criteria) 	More prominent	Less prominent	Preauricular sulcus - more prominent in females
	Oval	Triangle	
	Inverted	Everted	
	Deep and narrow	Wide and shallow	
Angles of mandible	Less obtuse < 120	More obtuse >120	
Indices	Corpora Basal Index (more in male) Breadth of S ₁ vertebrae/ breadth of whole sacrum *100	<ul style="list-style-type: none"> ○ Sciatic Index (Single best index) ○ Ischiopubic Index ○ Sacral Index ○ Sternal index 	



Previous Year Questions

Q. Superimposition technique is used for?

(AIIMS May 2018)

- A. Skull
- B. Pelvis
- C. Femur
- D. Ribs

Q. A 14-year-old female was claimed to be kidnapped, on interrogation she claims that she is not a minor and left home with the person on her own well. Count ordered for her age estimation. Given below are the X-ray of pelvis, wrist and bilateral elbow. What is her most probable age based as these?

(AIIMS May 2018)



- A. 14 yrs.
 - B. 16-17 yrs.
 - C. 17-19 yrs.
 - D. 21-22 yrs.
- D. Indicate defense by victim antemortem death

Q. Pure Aryans have which type of skull? (FMGE May 2018)

- A. Brachycephalic
- B. Mesocephalic
- C. Dolichocephalic
- D. All of the above

Q. Total number of teeth at the age of 12 years?

(FMGE May 2018)

- A. 12
- B. 20
- C. 28
- D. 30

Q. X-ray showing fusion of sternal body segments and fusion of medial end of clavicle. The approximate age is?

(INICET NOV 2020)

- A. More than 15 years
- B. More than 18 years
- C. More than 22 years
- D. More than 25 years

Q. Identical twins can be differentiated by?

(NEET Jan 2018)

- A. Fingerprint
- B. DNA fingerprinting
- C. Blood grouping
- D. Age

Q. Locard's principle is famous for?

(NEET Jan 2018)

- A. Theory of exchange
- B. Fingerprint study
- C. Formula for estimation of stature
- D. System of personal identification using the body measurement

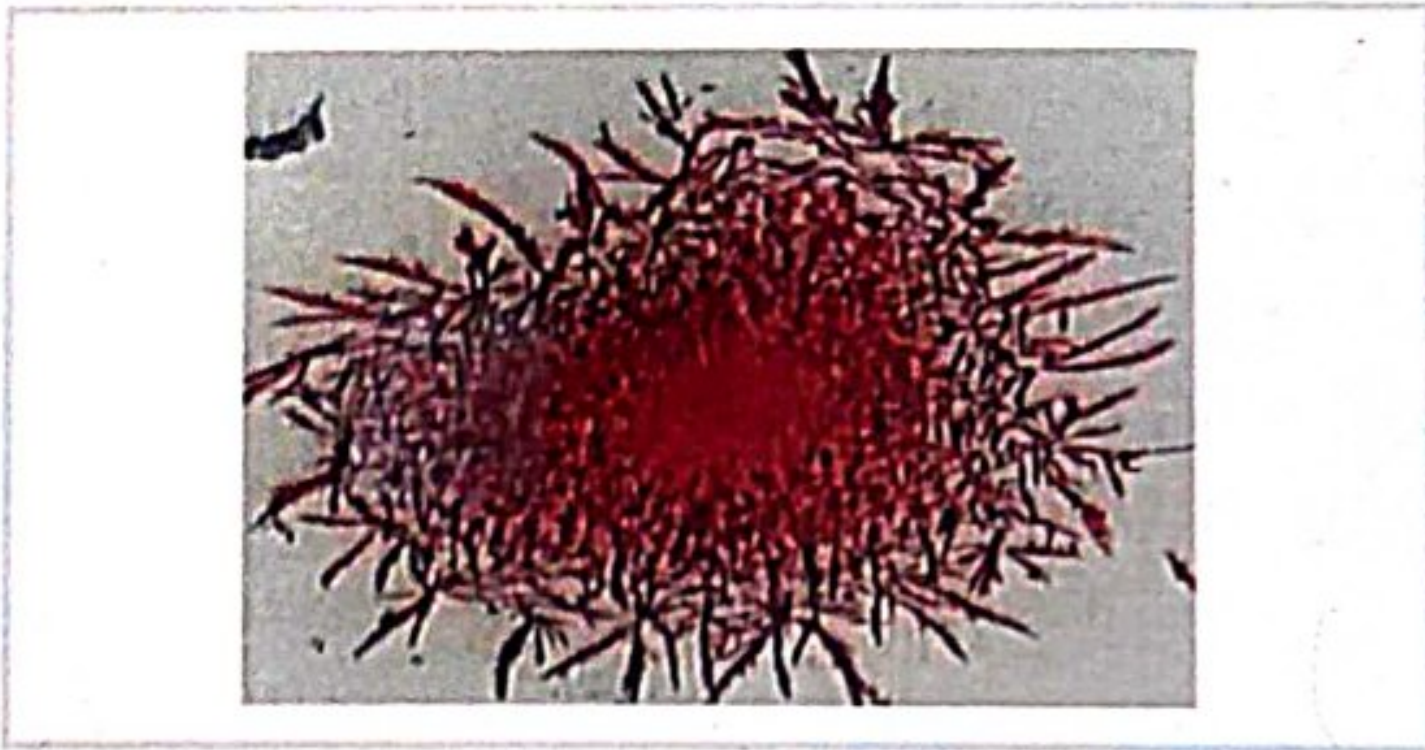
Q. Fingerprint ridges appear by?

(INI CET 2022)

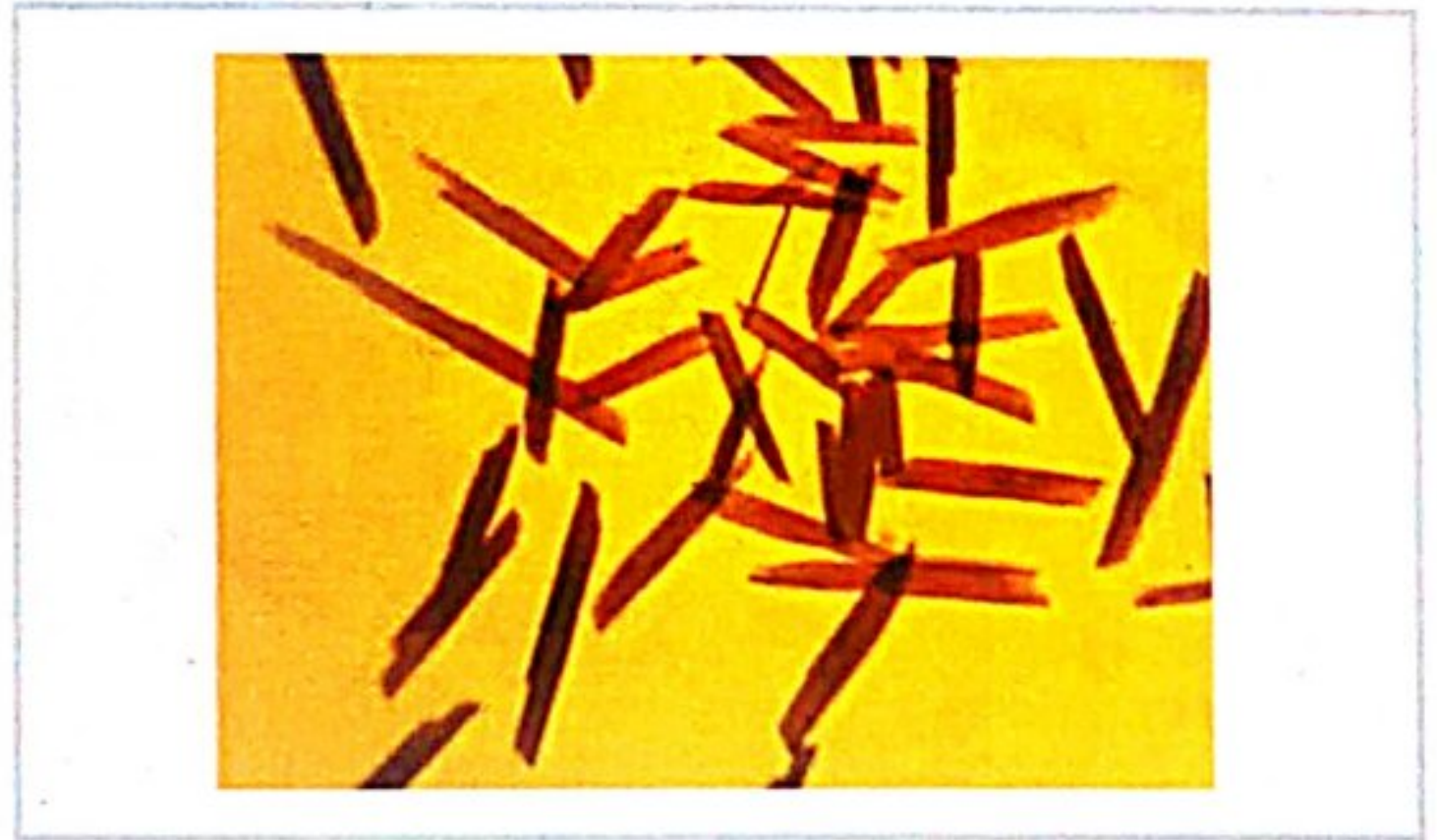
- A. 26 to 28 weeks of intrauterine life
- B. 12 to 16 weeks of intrauterine life
- C. 24 to 28 weeks intrauterine life
- D. 32 to 36 weeks of intrauterine life

TEST FOR BLOOD STAINS

- Takayama's test - Pink feathery crystals



- Teichman test - Brown rhombic crystals



- Absorption Spectrometry - Best test for blood stain.