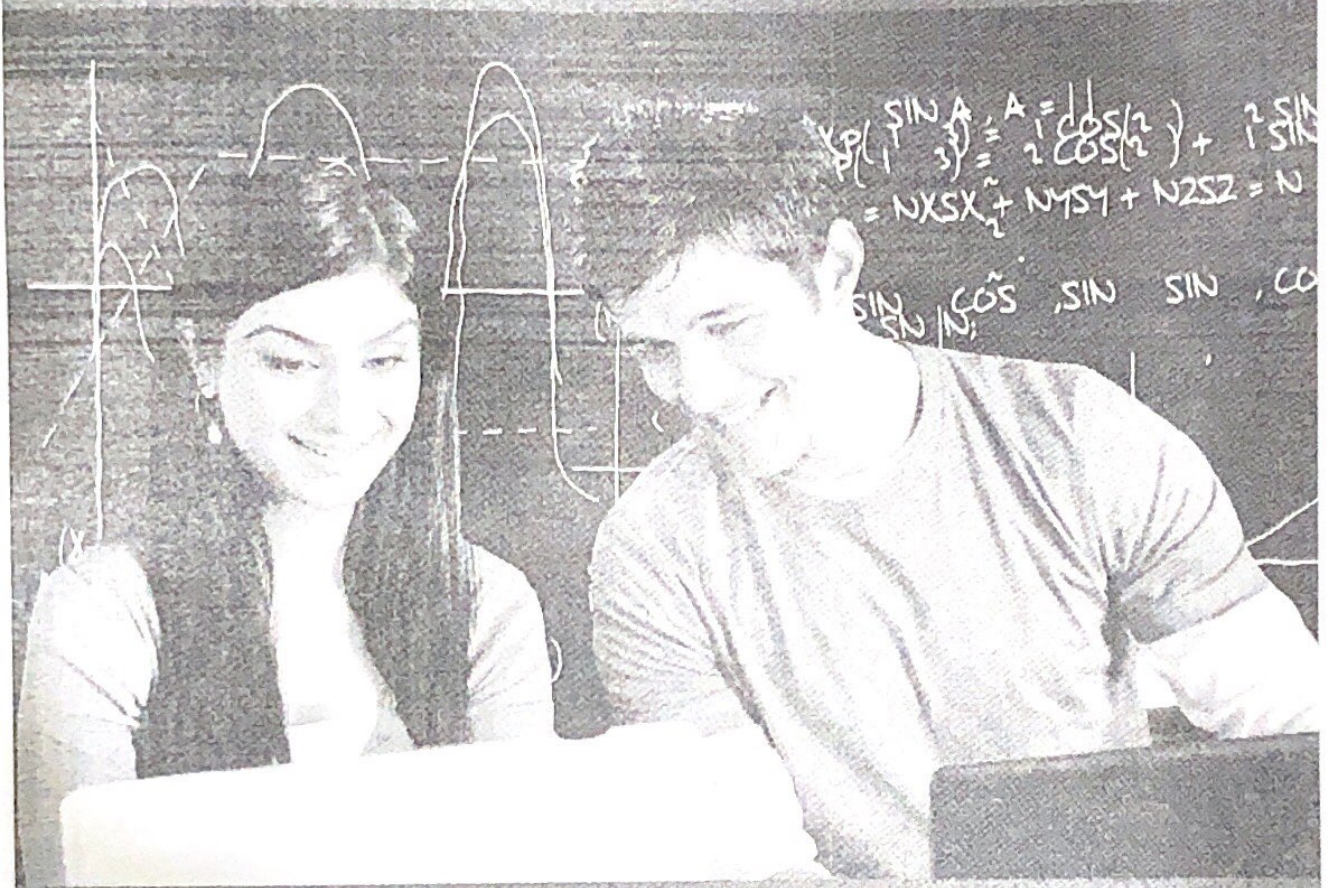


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## Forensic Medicine Short Notes

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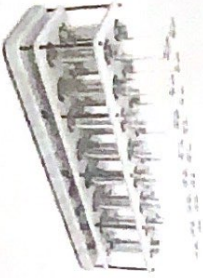
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## SHORT NOTES

ON

## FORENSIC MEDICINE



Proactive Students' Club 2010

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Death Declaration: verbal  
Death Certificate: written

**Death Investigation**

Death

↓  
Police → Inquest (Praktin: Murchuka)

↓  
Doctor → Postmortem examination → Autopsy report

↓  
Public Prosecutor and Defense Lawyer

↓  
Court

↓  
Judge → Verdict  
↳ Cases in legal system: court, Supreme Court, Appeal Court, Special Court

**Autopsy**  
- is the scientific and systematic examination of dead body

a) Pathological  
by Médico-Legal

**Importance**

- To know the cause of death

- To know time, manner, and mode of death

- To identify person

- To take sample for further investigation, for statistical purpose

- To write report

<Biopsy examination of living tissue sample>  
Mortuary – Temporary place where dead bodies are kept  
<Casket has no height but length>

**Medico-Legal Examination**

i) Preamble – Authorization

- Identification: Name, Age, Sex, Occupation, Scar mark, etc.  
- Consent: > 16 yrs – Self  
< 16 yrs – parents, legal guardians  
Female – attendant/ chaperon

ii) Body – Examination (external and internal)

iii) Report – conclusion

**Consent:** voluntary agreement, compliance or permission  
i) Express – stated by patient, may be verbal or written  
ii) Implied – understood from behavior

**Identification: Establishing of individuality of the person**

**Importance:**

- To know who dead person is

- To inform relatives

- To inherit property

- To claim insurance

- For statistical purpose

**How to identify? (try to get whatever possible)**

- Personal belonging

- Hand writing

- walking

- Blood group

- fingerprints

- Tattoos, scars, moles

- Any deformity

- Dentition

**In Decomposed:**

- Personal belonging

- Teeth

- Scar, tattoo

- DNA sample

- Male: Prostate

- Female: non-gravid uterus



**Postmortem Changes (Sign of Death): Immediate, Early, Late**

**A) Immediate – signily somatic death**

- Sensibility and loss of movement

- Cessation of respiration – must be complete and continuous

- Stoppage for > 45 minutes cause death

- Cessation of circulation – Stoppage for 35 min cause death

**B) Early – signily cellular death**

**Changes in skin:** pallor, loses elasticity, lips becomes brownish, dry and hard

**Change in eye:** - loss of corneal reflex, - Tachentaur: brownish patches seen in sclera, -

Traking/Shunting/Kerorokian sign – Fragmentation of blood column in retinal vessels, - Pupil slightly dilates immediate to death but later constricts with onset of rigor mortis.

#### Algor Mortis:

- is cooling of body after death
- after 2-3 hrs of death, body temp gradually falls
- Heat is lost by conduction, convection and radiation
- cooling is affected by difference in temperature between body and medium, body built of cadaver, environment, covering on or around the body etc.

#### Livor Mortis / PM Staining or PM Hypostasis:

- is the purplish-bluish discoloration of dependent part of body after death due to postmortem settling of blood secondary to gravity
- Mechanism: Death → Cessation of circulation → Stagnation of blood with reduced Hb in toneless capillaries and venule of dependent part → stains adjacent tissue
- Appear after 3-6 hrs of death as blanched patches of 1-2 cm diameter which then unite gradually and become fixed after 8-10 hrs of death
- Clearly seen in occipital scalp, shoulder blade, buttock, posterior aspect of thigh in supine position
- Bright cherry red lividity → CO asphyxia
- Pink red lividity → cyanide poisoning

- If suspect: give incision → flush with water, if washable – it is PM staining, if not – it is contusion (red dom)

**Rigor mortis:** is the stiffness of body after death and becomes complete in 6 – 12 hrs

- Order: - begins in the eyelids, neck and lower jaw → muscles of face → muscle of chest, upper limb → Abdomen → lower limb
- Test: Trying to lift eye lid, depressing jaw, bending joints etc

#### Condition altering onset and duration of Rigor mortis:

1. Age:
  - foetus < 7 months: RM does not set
  - Healthy adult: develops slowly and is well marked and lasts longer
  - Child and old: feeble and rapid
2. Nature of diseases:
  - Cholera, Typhoid, TB, cancer → early onset and short duration
  - Strychnine poisoning → appears rapidly and persists longer
  - OP poisoning → appears early
3. Muscular state:
  - Healthy and rest muscle before death → slow and longer
  - Fatigue before death → rapid and short
4. Atmospheric condition:
  - Cold weather → slow and longer
  - Hot → rapid and shorter

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#### Condition simulating Rigor Mortis:

##### 1. Cadaveric spasm:

Rigor mortis	Cadaveric spasm
- occurs in all muscles	- in a group of muscle
- seen after few hr	- seen instantaneous after death
- mechanism: 1 ATP	- not known
- occurs in all dead bodies	- seen in only certain cases of death where death is unexpected and sudden
- 2 <sup>nd</sup> flaccidity present	- No 1 <sup>st</sup> and 2 <sup>nd</sup> flaccidity

##### 2. Heat stiffness:

- Heat injury (> 65° C) → coagulation of muscle protein → rigidity
- no 1<sup>st</sup> and 2<sup>nd</sup> flaccidity
- sign of burn seen
- immediately seen
- knee and elbow flexed- seen like boxer (pugilistic attitude)

##### 3. Cold stiffness:

- Temperature ≤ 0° → freezing of body fluid → stiffness
- no decomposition
- if brought to normal temperature: fluid melts → flaccidity → rigor mortis

##### 4. Gas Stiffness:

- During body decomposition → increased gaseous distension → stiffness

#### C) Late Changes:

1. **Decomposition** – involves two processes:

1. **Autolysis** - is a chemical process brought about by intracellular enzymes:

- proteolytic, glycolytic and lipolytic action of ferments cause autolysis and disintegration of organs.
- is increased by heat and is stopped by freezing

2. **Putrefaction** – occurs due to bacterial fermentation of the tissue

- due to intestinal bacteria: Clostridium welchii, Streptococci, Proteus, E. coli, etc.
- Cause hemolysis, liquefaction of PM clots, disintegration of tissue and gas formation

#### Character:

- Change in color of tissues – greenish
- H<sub>2</sub>S (formed in large intestine) + Hb → Sulphamethoglobin → escape into surrounding tissue → gives greenish color
- Network of blood vessels appears purplish red → marbling

(8)

**- Evolution of gas in the tissues:**

- Proteins and carbohydrates → (splits) → amino acids, ammonia, CO<sub>2</sub>, H<sub>2</sub>S, Methane.
- Mercaptans formations → distension of abdomen, eyeball scrotum etc.
- Increased abdominothoracic pressure → Blood stained froth exudes from mouth and nostrils called **purging**
- Tongue protrudes out, eye bulge, organ soften and liquefy
- Takes about 3 months to decompose soft tissue and ligament up to 1 year.

**b) Adipocere** – is modification of putrefaction in which fatty tissues of body undergo saponification and waxy coating occurs over the skin which prevent decomposition in moist and cold environment

- Hydrolysis and Hydrogenation of fat → + Ca<sup>++</sup>, NH<sub>4</sub><sup>+</sup> → Insoluble soaps → Inhibition of putrefactive bacteria
- Produce sweetish smell
- Noted max<sup>m</sup> in fatty area – face, buttock, breast etc.
- preserves face and injuries

**c) Mummification** – is modification of putrefaction in which body dries in hot environment

- Fluid evaporates, muscles shrinks, and body remains preserved
- Begins from exposed part of body then involves internal organs
- Tissues become dry, brownish and odorless
- They gradually break, become powdery and disintegrate

**Conditions needed:**

- a) Absence of moisture in air
- b) Continuous action of dry warm air

**Hanging and Strangulation**

**-1. Hanging** – is a form of asphyxia caused by suspension of the body by a ligature which encircles the neck, the constricting force being the weight of the body.

**- Type-**

- A- (1) Judicial (Sional fracture C<sub>2</sub>-3) (2) Non-judicial
- B- (1) Partial – body partially suspended, toe/feet touch ground, weight of head acts as constricting force
- (2) Complete – body is completely suspended without touching ground, body weight acts as constricting force

*Quoting Post-mortem study 1 shaped midline incision is given from submentum to symphysis pubis. In case of hanging 7 shaped incision is made.*

**Causes of Death:**

- i) Asphyxia, ii) Venous congestion, iii) Cerebral anoxia, iv) Reflex vagal irritation, v) Fracture or dislocation of cervical vertebrae
- may die within 3-5 minutes
- ii) **Strangulation**- is a form of asphyxia which is caused from constriction of neck by a ligature or any other means without suspending the body.

**Types:**

- a) Strangulation → by ligature
- b) Throttling → manual strangulation
- c) Bandola → pressing neck by bathi, bamboo, iron rods etc.
- d) Carotting → victim is attacked from behind and neck is grasped or tightened with ligature
- e) Mugging → Strangulation is caused by holding the neck of victim in the bend of the elbow

**Differences between Hanging and Strangulation:**

S.N.	Traits	Hanging	Strangulation
1	ligature mark	-oblique, high up around neck, base is pale, hard and parchment like	Transverse, circular and low down around neck
2	Abrasion and ecchymoses	not common	common
3	Subcutaneous tissue	white, hard, glistening	ecchymosed under mark
4	Face	usually pale and patchial hemorrhage are not common	congested marked patchiae
5	Eye	usually closed	open and staring
6	Tongue	swelling and protrusion less marked	swelling and protrusion more marked
7	saliva	runs out of mouth	absent
8	signs of struggle and resistance	absent	present except in children and old
9	Fracture of hyoid bone and thyroid cartilage	not common	may occur
10	muscle of neck	bruising or tear not common	bruise with rupture of muscle are common

**Drowning** – is a form of asphyxia due to aspiration of fluid into air passage by submersion in water or other fluid.

**Types – 4**

- 1) **Wet drowning/Primary drowning:** water is inhaled into lungs
  - dies from cardiac arrest or ventricular fibrillation
- 2) **Dry Drowning** – Water does not enter into lungs
  - dies from laryngeal spasm due to in rush of water into nasopharynx or larynx
  - thick mucus foam and froth may develop producing a plug
- 3) **Secondary drowning** (Post-immersion syndrome)- victims resuscitated and dies from complication of drowning e.g. pulmonary oedema, pulmonary infection, electrolyte imbalance

4) **Immersion syndrome**- death results from cardiac arrest due to vagal inhibition as a result of contact with cold or fright of fall in water

**Cause of Death**

- a) Asphyxia, b) Vertebral fibrillation, c) Laryngeal spasms, d) Vagal inhibition, e) Injuries
- May die within 4-8 mins of complete submersion

**Signs and Symptoms:**

1) **External features:**

- a) Body wearing clothes → **wet, stained with mud, sand, and dirt**
- b) Face → pale, cyanosed
- c) Eye → Closed or partly opened, pupil dilated
- d) Tongue → swollen and protruded
- e) Shaving lather froth over mouth and nostrils
- f) Presence of goose skin or cuts anserine on the skin of **extremities**
- g) Cadaveric spasm with mud, plants e.g. in hands
- h) Washes man's hands and feet
- i) Injuries during falling

2) **Internal features:**

- a) Changes in lungs- voluminous, oedematous and distended and completely fill up the thoracic cavity
  - Surface show marks of indentation of ribs
  - cut section excludes copious blood stained frothy fluids
- b) Larynx and Trachea – reddish congested
  - mud, stone, air, algae commonly found ( shows ante-mortem drowning)
- c) Stomach and intestine- Presence of water containing mud, sand, algae

**Injury**

Injury is defined as a break of the natural continuity of any tissues of the living body. In forensic medicine, it is broadly defined as any harm illegally caused to any person in body, mind, reputation or property.

**Classification of Injury-**

a) **Mechanical:**

- 1- Due to blunt force- Abrasion, Contusion, Laceration, Fracture and Dislocation
- 2- Due to sharp force- Incised wound, Chop wound, Stab wound, Fire arm wound

b) **Thermal Injuries:**

- 1- Due to cold- Frost bite, Trench foot, Immersion foot
- 2- Due to heat- Burns, Scalds

- c) **Chemical Injuries:** corrosive acids, corrosive alkalis
- d) **Physical**- electricity, lightning, x-ray radioactive substance, etc. <Electricity entry wound and exit wounds>
- e) **Explosives**

**Abrasion (Chithoriyeko ghau)**- is a destruction of the skin which usually involves superficial layer of epidermis only

- are simple injuries, bleed slightly, heal rapidly, and scar is not formed.

<Abrasion: 2 dimension, Laceration: 3 dimensions>

**Contusion (Bruises - Neeldam):**

- is an effusion of blood in the tissues due to rupture of blood vessel caused by blunt trauma.

- occurs in skin as well as internal organs

- caused by blunt force like fist, stick, stone, boot etc.

Painful swelling occur with crushing or tearing of subcutaneous tissues without destruction of skin

**Laceration (Chythyeko ghau):**

- are tears or splits of skin, mucus membrane or muscle of internal organ produced by application of blunt force to the broad body are of body

**RTA - road traffic accident**

**Accident**- events which are unpredictable

*chromatoma* swelling or mass of blood or blood clot confined to tissue/s due to seeping away of blood from ruptured vessels

**Causes:**

- 1) Man- Pedestrian, passenger, driver (unskilled, drunken), motorcyclist, pillion rider, pedal cyclist etc
- 2) Machine- poor engine condition
- 3) Environment- difficult road, attention to opposite sex

**Pedestrians:**

- a) 1<sup>st</sup> Impact injury- hit directly by a vehicle, if speed > 30 km/hr may fly to roof
- b) 2<sup>nd</sup> Impact injury- injury by the same vehicle second time
- c) 2<sup>nd</sup> injury- injury due to falling on road
- d) 3<sup>rd</sup> Run over injury- injury from next vehicle ?

**Driver**

- 1) Unrestrained- driver without seatbelt
- a) sparrow feet laceration on face, head, - whiplash injury (due to hyperextension of neck)
- b) chest and abdominal injury
- c) rib fracture

2) **Restrained- driver wearing seat belt**

- a) not ejected from bus
- b) rib fracture
- c) internal organ injury

**Passengers:**

- Front seat → seat of death
- Sunmering → goes underneath of front seat

**Motorcyclist: (helmet of strong type is essential)**

- most unstable vehicle
- die due to head injury
- Pillion rider gets more injuries

- **Tailgating:** motorcyclist collide with tail edge of heavy vehicle and gets injury in head and chest

- *Elaborate the causes of RTAs*

**Head injury / Cerebral Injuries - Coup, Contra coup**

**Infantlode:**

- Is the deliberate killing of a child under the age of 1 year by his / her mother or caretaker.
- a) Live birth- child shows the sign of life after birth i.e. full term baby
- b) Still birth- who is born after 28 wks of pregnancy and is living in uterus and dies in passage during the delivery.
- c) Dead birth- who died in uterus. It shows rigor mortis at delivery, maceration (aseptic autolysis) and mummification

**Hydrostatic Test**

- a) Prior to respiration → whole of lung sink in water
  - b) After respiration → float in water
- (SIDS- Sudden Infant death Syndrome )

**Sexual Assault/Offense:**

Type: 2

- a) Natural – rape, incest
- b) Unnatural – anal intercourse, oral intercourse, Lesbianism, Bestiality

**Inactive partner-**

**Un-habituated partner:** Anal sphincter is swollen, tender, lacerated, some lubricant can be found, fecal matter present.

**Habituated partner:** Anal sphincter looks open, healed scar, fecal matter, lubricants may be present.

(13)

**Active Partner:** lacerated frenulum of penis may be present

**Oral Intercourse:** Sudden death may occur due to sudden ejaculation of semen causing laryngeal spasm

**Oral Swab-** spermatozoa in passive partner

**Penis-** epithelial cells of oral mucosa

**Lesbianism:** sexual gratification between two females

**Bestialism:** sexual act with beast or animals

**Natural**

**Rape:** (Judge- rape, medical person- sexual assault)

**Rape** is illegal sexual intercourse by a man on a woman without her consent, against her will, with or without her consent if she is less than 16 years old, with putting her on threat or by impersonation.

**Consent implied:** expressed- Verbal or written

Injuries can be produced by – restrain or resistance.

-1- Contusion on the arm of male

-2- Nail marks scratches around the mouth

-3- laceration on mouth

-4- Male may have bite marks on chest, etc

-5- Contusion on the body

-6- Female- defense injuries: -injuries on the vulva/genitalia, small inner circular contusion in the thigh region,

**Note:** in more than 70 % of the cases the females are sexually assaulted by her known friends or relatives

**Procedure of examination of victim and collection of evidences:**

**Preamble:** These four constitute Preamble

a) Authorization letter- must

b) Identity- Name, Age, Sex, Address, Occupation etc

c) Consent- From victim if more than 16 years, from parents if less than 16 years, if no parents from legal guardian.

d) One female attendant

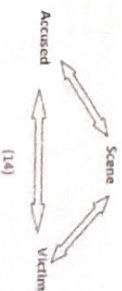
**Clinical Examination**

1- History

1) When did the incident take place? (Why she did any late if any late)

2) Where the incidents take place?

**Lanquard's Principle:** Every contact traces the evidences.



(14)





### Questions:

**Foetal development** when does cranium develop?

# Which age group usually come for Age Estimation?

1) 10 – 12 to 18 – 20 yrs → generally street child  
(12 – 18 yrs) (Juvenile Delinquency)

(To begin Age Estimation letter from Women Cell is also required, in case of female.)

### Report:

#### I. Preamble (passport part)

- Name, Age, Sex, Date, Time, Occupation, Place of examination etc.
- Brought by
- Exam requested by
- Identification marks, birth marks, traumatic marks, operational scars

#### II. Examination/findings:

(must be in descriptive form)

##### a) Consent – should be taken

- should be written expressed (< 16 yrs – from guardian)

##### b) 4 groups of developmental features should be looked:

- 1. General physique: Wt., Ht.
  - Features of general development – mostly muscular development
- 2. Development of secondary sex character:
  - Voice: hoarseness of voice in male from > 13 years
  - Adam's apple: prominent and triangular in male
  - Hair: must, beard in male
  - Axillary/pubic hairs in both sexes
  - Development of genital organs – Male: scrotum pendular in puberty
  - Female: (during/after puberty) breast development, nipple dark and prominent

#### Dental development:

- 6 months- lower central incisor erupts
- up to 6 years – only temporary dentition
- 6 – 11 years – mixed dentition
- only II and III molar are helpful
- II molar – 12- 14 years – erupts
- if just erupting → at least crossed 12 years
- if both II molar → crossed 14 years
- III molar – 17-25 years
  - if 3<sup>rd</sup> molar erupted > 14 years
  - if all four 3<sup>rd</sup> molar erupted > 20 years

**Gustafson's method of estimating age by Dental examination – 6 features related**

### Radiological evidences

Most of the bone start ossifying (ossification centre) in intrauterine life and complete in early childhood (up to 2 years)

#### # How bone develops?

- Epiphyseal union
- epiphysis, diaphysis, metaphysis, development centre,  
(development centre may be one or more)
- # variation of 1-2 years in radiological findings,
- # variation of 6 months in dental finding
- if 12- 14 years, elbow joint is examined, x-rayed
- if > 14-15 years to 18 years wrist joint x-rayed
- if > 18 years → pelvis (AP view), iliac crest is completed at 20-21 years
- bone which fuses last is the lateral end of clavicle ≥ 25 years
- Females are 16 months to 1 year earlier in development (dental, osteological)

#### III. Conclusion

(simple and clear language should be used)

- The age of the XYZ is > 14 years / 14-15 years at the time of examination

# Pissiform starts to ossify in 11 years and completely ossifies in 18 years.

#### # Useful:

- 16-18 years: elbow joint
- 14, 15, 16, 17 years: wrist joint and phalanges
- > 18-21 years: pelvic bone x-ray

#### Dentition:

##### A. Deciduous Teeth

	Eruption
1. Central incisor	
lower	6-8 months
upper	7-9 month
2. Lateral incisor	
upper	7-9 month
lower	10-12 month
3. First molar	12-14 month
4. Canine	17-18 month
5. Second molar	20-30 month

##### B. Permanent Teeth

1. First molar	6-7 years
2. Central incisor	6-8 years
3. Lateral incisor	7-9 years
4. First premolar	9-11 years
5. Second premolar	10-12 years
6. Canine	11-12 years
7. Second molar	12-14 years
8. Third molar	17-25 years

Temporary teeth - 20 in no. 2102 | 2102 X 4  
Permanent teeth - 32 in no. 2123 | 2123 X 4

Mixed dentition seen upto 12 years.  
Mixed age of dentition 6-12 years.

#### Gustauson's method

##### A Short Sample of Age Estimation:

Name: XYZ Sex: Male  
Stated Allied age - 13 years  
Address- ABC  
Identification mark - small mole of 5 mm diameter in lateral end of left eye brow  
Consent- taken from his brother.

##### Examination:

Average development (related to the normal)

- Height: 55 inches
- Weight: 32 kg
- secondary sex characters:
  - voice: subjective, childish
  - Adam's apple: not very much prominent
  - mustache: fine row, not long
  - beard: - no
  - axillary hair: no
  - pubic hair: brownish, not thick, scanty, < 1 cm long

##### Dentition:

- 28 (p)

$$\frac{s+7}{s+7} \quad | \quad \frac{s+7}{s+7}$$

Radiological examination:

x-ray right elbow - AP, Lateral view  
right wrist - AP view  
(s+ : space present, P: permanent)

[Blackish bone - still there is cartilage, Whitish bone - bone formed (calcium)]  
# Reference for Elbow joint: Epiphysis fusion starts - 12 years and completes at 14 years.  
For wrist with hand: last carpal is distinct (i.e. pisiform) → 12 years is earlier achieved.  
# Lower border of radius fusion starts - 16 years, completes at 18 years

##### Conclusion:

On the basis of General developmental, radiological findings the age of XYZ is 12-14 years esp. he is running in 13 years.

(19)

## BURN

Burn is injury caused by application of heat or chemical substance to the external or internal surface of the body which causes destruction of tissues

### Types:

A. Based on type of object producing heat: flame, radiant, chemical, electric, scald with boiling fluid

B. Based on thickness of burn - shows severity

a) I° / Superficial burn: Due to prolong exposure to heat, - erythematous, no blister, heals 2-5 days

b) II° / Partial thickness burn:

1. Superficial II°: epidermis may be destroyed up to stratum granulosum, red in color, red in color and painful; blister or bulla formation; heals without scar.

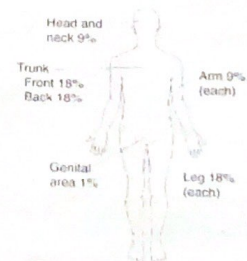
2. Deep II° Burn: Epidermis is destroyed up to stratum basale; erythematous ring seen in periphery; heals in > 21 days

c) III° / Full thickness burn: whole of dermis is destroyed; hard and leathery; heals from margin, no pain (due to nerve ending destruction); skin grafting needed.

d) IV° Burn: involves muscle; bone and deep tissues.

### Area of Burn - Wallace's Rule of Nine: (in an adult body) Whole body - 100%

- 1) Front and back aspects of head - 9%
- 2) Front aspect of trunk - 18%
- 3) Back aspect of trunk - 18%
- 4) Front and back aspect of right upper limb - 9%
- 5) Front and back aspect of left upper limb - 9%
- 6) Front and back aspect of right lower limb - 18%
- 7) Front and back aspect of left lower limb - 18%
- 8) Perineum - 1%



(20)

**Fluid Resuscitation:**

IV fluid needed if burn > 10% TBSA in children and > 15% TBSA in adult.

**Parkinson's Formula:** Volume of IV fluid required (ml): % TBSA burnt x weight (kg) x 4. (Half of the fluid is given in the first 8 hrs and remaining half is given over next 16 hr)

	Ante-mortem Burn	Post-mortem Burn
Line of redness	+nt [Present]	-nt [Absent]
Blester	contains inflammatory cells	No
Trachea	contains shoot particles	No

**Accelerated Burn:** - with kerosene, petrol etc; - usually patches of burn seen; blackens body; eschar seen.

[Burn Management in Short- Fluid (RL, NS), Topical Hygiene (Soframycin, Silver Sulfadiazine), Systemic Antibiotics (Ceftriaxone, Metronidazole, Ampicillin, Clavacillin), Analgesic (NSAID or Opioid), PPI(Pantoprazole), Physiotherapy, Nursing Care etc.]

**TOXICOLOGY**

**General principle of Treatment of poisoning:**

1. Prevention of further exposure to the poison.
2. Removal of unabsorbed poison - emesis, gastric lavage etc.
3. Use of an antidote.
4. Removal of absorbed poison- purgation, Dialysis
5. Symptomatic treatment

**Principle of Management**

**ABCDEA-**

- Airway
- Breathing
- Circulation
- Decontamination
- Elimination
- Antidote

**MAJOR TOXIDROMES (next page)**

**ANTIDOTES (next page)**

**Sample** of following is sent to laboratory for poisoning investigation: a) Lung -1, b) Liver- 500 gm, c) 1/2 of each kidney, d) 5-10 ml blood, e) 200 ml urine, f) 1/2 cerebral hemisphere, g) femur 10 cm in case of heavy metal poisoning, h) whole stomach with full content.

**Preservatives:** Saturated NaCl sol<sup>n</sup> for specimens; For blood Pot. Oxalate, and Na fluoride

**MAJOR TOXIDROMES**

Toxidrome	Toxin	Symptoms
Opioid / Sedative	Opioids (heroin, morphine, codeine), Barbiturates, Benzodiazepines, ethanol	CNS/respiratory depression, miosis (opioids), Hypotension, Bradycardia, Hypothermia, Decreased GI motility
Sympatho mimetics	Cocaine, Amphetamines, Decongestants (Phenylpropanolamine, ephedrine, pseudoephedrine), theophylline	Tachycardia, Hypertension, hyperpyrexia, diaphoresis, mydriasis, Delirium, seizures, tachyarrhythmia
Cholinergic	Insecticides, Sain nerve gas, physostigmine, endophonium, acetylcholine	"SLUDGE" (salivation, lacrimation, urination, diarrhea, GI cramping, emesis), also diaphoresis, miosis, bradycardia, seizure
Anticholinergic	Antihistamines, Tricyclic antidepressants, phenothiazines, belladonna alkaloids (atropine, scopolamine), anti parkinsonian agents	Delirium, tachycardia, dry flushed skin, mydriasis, hyperpyrexia, decreased GI motility, urinary retention, seizure, dysrhythmias

**ANTIDOTES**

S.N.	Poisoning	Antidote
1	Atropine	Neostigmine/Physostigmine
2	Benzodiazepines	Flumazenil
3	Carbon monoxide	100% O <sub>2</sub>
4	Copper	Penicillamine
5	Cyanide	Sodium thiosulphate, Sodium nitrite
6	Heparin	Protamine sulphate
7	Iron	Desferrioxamine
8	Isoniazid	Pyridoxine
9	Lead	CaNa <sub>2</sub> EDTA, Dimercaprol (BAL), D-penicillamine
10	Mercury/Arsenic	Dimercaprol
11	Methanol, Ethylene glycol	Ethanol, Fomepizole, Dialysis
12	Mushroom	Atropine
13	Opioid analgesics	Naloxone
14	Oral anticoagulant	Vitamin K
15	Insecticides (Organophosphate)	Atropine/Pralidoxime
16	Paracetamol (acetaminophen)	N-acetylcystine
17	Salicylate	Bicarbonate, Dialysis
18	Anticholinergics	Physostigmine
19	Tricyclic antidepressants	Bicarbonate
20	B-blocker	Glucagon
21	Ca <sup>2+</sup> Channel blocker	CaCl <sub>2</sub> , Glucagon
22	Digoxin	Digoxin-specific fab fragments (Digibind)
23	Universal antidote	Activated charcoal (i.e. in fact, there is not such universal antidote.)

**(AUTOPSY REPORT)**

अनुसूची - ५, नियम २ को उपनिबन्ध १५) नाम सम्बन्धित, एवं अधिकृत अधीकृत

प्राणी कार्यलयको भन्ति  
मृदा दतां न .....  
दिना .....  
प्राणी कार्यलयको नाम .....  
मृतको नाम, उमेर, श्रेणी, उमेर र लिंग .....  
नाम सम्बन्धित मृतको व्यक्तिगत नाम, उमेर, पेशा .....  
नाम लिई अहिले प्राणी कार्यलयको नाम देउनु .....  
मृतको मृत्यु हुनुको कारण .....  
सम्बन्धित प्राणी कार्यलयको रूप र वर्गीकरणको वर्णन .....

**RELEVANT DETAILS: -**

**EXTERNAL EXAMINATION: -**

**FULL BODY - ANTERIOR AND POSTERIOR VIEWS (VENTRAL AND DORSAL)**  
*(figures of body: anterior, posterior, left lateral, right lateral)*

**GUIDELINES:  
RELEVANT DETAILS:**  
*Mention short history of circumstances of death*

**EXTERNAL EXAMINATION:**

**WITH CLOTHES ON: -**  
*List & describe clothing and ornaments etc. (Note if any marks present)*

**AFTER CLOTHES ARE REMOVED:** *Take height, estimate weight, describe stature, hair, and estimate age.*  
*See the body from all sides*  
*- Appearance of cornea, rigor mortis, PM staining, if anything found in natural orifices, findings related to decomposition*  
*Record old scars, tattoo, deformity in unidentified body.*  
*Record details of injury (type, size, site).*  
*Record bleeding, semen, urine if present.*

**INTERNAL EXAMINATION: -  
LARYNX, TRACHEA, PHARYNX, LUNGS -**  
*Note any injury abnormality or change in physical character*

**STOMACH: -**  
*See what is inside, describe smell if present.*