INTERSEX…..

Intermingling of sexual characters of either sex in one individual to a varying degree

Gonadal Agenesis (Nuclear sex negative)

Sexual organs has never developed

Gonadal Dysgenesis

1. Klinefelter's syndrome
2. Turner's syndrome

1. Klinefelter Syndrome

- XXY Chromosomes
- Low grade musculine phenotype
- Person is thin, tall and often shy
- Azoospermia
- Underdeveloped male secondary sexual characterstics
- Axillary and pubic hair absent
- Testicular dysgenesis

2. Turner Syndrome

- XO chromosomes
- History of Amenorrhea
- Women of short stature
- Lymphoedema, short forth metatarsal, shield chest and pin point nipples
- Slow growth and failure to develop secondary sexual characters
- Refractive errors, colour blindness and webbed neck with low posterior hairline
- Septal defects, spina bifida, horse shoe kidney, cushing syndrome and Diabetes
- Sterile

Concealed sex

- Motives
- Detection

Accuracy in determination of sex from bones

- Entire skeleton - 100 %
- Skull + Pelvis - 98 %
- Pelvis + Long bones - 98 %
- Skull + Long bones - 95 %
- Pelvis alone - 95 %
- Skull alone - 93 %
- Long bones alone - 85 %

Skull - Frontal view

	Male	Female
Capacity	More 1500-1550	Less 1350-1400
Surface	Rough	Smooth
Glabella	Prominent	Less prominent
Fronto-nasal junction	Marked	Less marked
Supra-orbital ridges	Prominent	Less prominent
Shape of the orbits	Rectangular & Small	Rounded & Large
Frontal eminence	Less prominent	Prominent

Skull – Lateral view

	Male	Female
Parietal prominence	Less prominent	Prominent
Zygomatic arch	Prominent	Less prominent
Mastoid process	Large & blunt	Small & pointed

Skull – Base view

	Male	Female
Base	Site for muscular insertion more marked	Less marked
Digastric groove	Deep	Shallow
Condylar facet	Long and narrow	Small & Broad
Foramen magnum	Large & long	Small & round
Palate	Large & U shaped	Small & Parabolic

Differences

	Male	Female
General appearance	Larger & thicker	Smaller & thin
Chin	Square or U shaped	Rounded or V shaped
Anatomical angle	Less obtuse	More obtuse
Angle of mandible	Everted large	Not so
Condyles	Larger	Smaller

Hip Bone - Differences

	Male	Female
General appearance	Heavy & Rough	Light & Smooth
Pre-auricular sulcus	Infrequent/shallow	Broad & deep
Obturator foramen	Larger & Oval	Smaller & Triangular
Greater Sciatic notch	Narrow &Deep	Broad and shallow
Ischial tuberosity	Inverted	Everted
Acetabulum	Large	Small

Pelvic Girdle - Differences

	Male	Female
Pelvic brim	Heart shaped	Circular /Oval
Pelvic cavity	Conical funnel shaped	Broad & round
Sub-pubic angle	Narrow (V shaped)	Wide (U shaped)

Sex differences

	Male	Female
General appearance	Longer & narrower	Smooth & broader
Breadth of Ala	Smaller than 1st sacral vertebra	Larger than 1st sacral vertebra
Inner curvature	Uniformly curved	Abruptly curved at last two segments
Sacro-iliac articulation	Extend upto 2 ½ to 3rd segment	Extend upto 2 to 2 ½ segment
Promontory	Prominent	Less prominent

Femur

Differences

	Male	Female
Head	Larger	Smaller
Neck shaft angle	Obtuse (125^0)	Almost 90^0
Bi-condylar width	More	Less

III - STATURE

Stature

- Height increases till age of 21 to 25 years
- Stature can be calculated in dismembered body
  - With both arms stretched in a straight line – distance between tips of both middle finger = Ht of person
  - Ht . approx. = 2 X length from vertex to pubic symphysis or length between pubic symp. and heel
  - Ht. = 3.3 X length from sternal notch to symphysis pubis
  - Ht. = 3.7 X length between olecranon and tip of middle finger

Karl Pearson's formula

- Used to calculate stature of the person from long bones
- Different formula for male and females

- Length of bones are measured on Osteometric board

SECONDARY CHARACTERISTICS FOR IDENTIFICATION