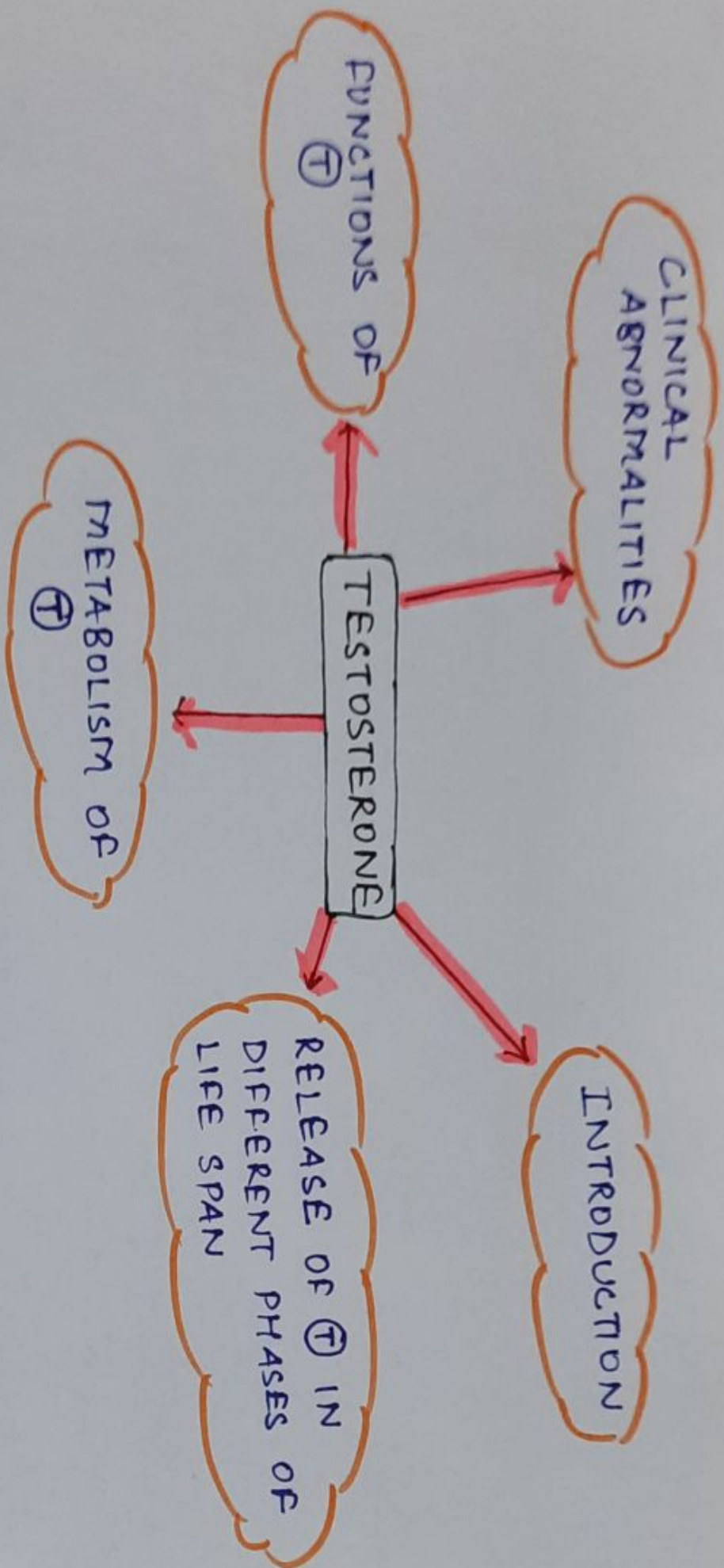




INTRODUCTION:-



→ "MALE SEX HORMONES"



COLLECTIVELY →

"ANDROGENS"

→ LEBYDQ CELLS

- TESTOSTERONE (T) (ABUNDANT) → PRIMARY TESTICULAR HORMONES
- DIHYDROTESTOSTERONE (DHT)
- ANDROSTENEDIONE

ANDROGENS :- STEROID HORMONES HAVING MASCULINIZING EFFECT

SEC. BY

TESTIS



MAJOR EFFECT

OTHER TISSUES (ADRENAL CORTEX)



- ✓ 5% EFFECT ON MUSCULINITY
- ✓ FEMALES → SLIGHT MUSCULAR CH.
- PUBIC HAIR
- AXILLARY HAIR

TESTOSTERONE PLASMA CONC
MALES :- 300-1000 ng/dl
FEMALES :- 30-70 ng/dl

CASE:-

TUMOR OF ADRENAL ANDROGEN PRODUCING CELLS



ANDROGENS ↑



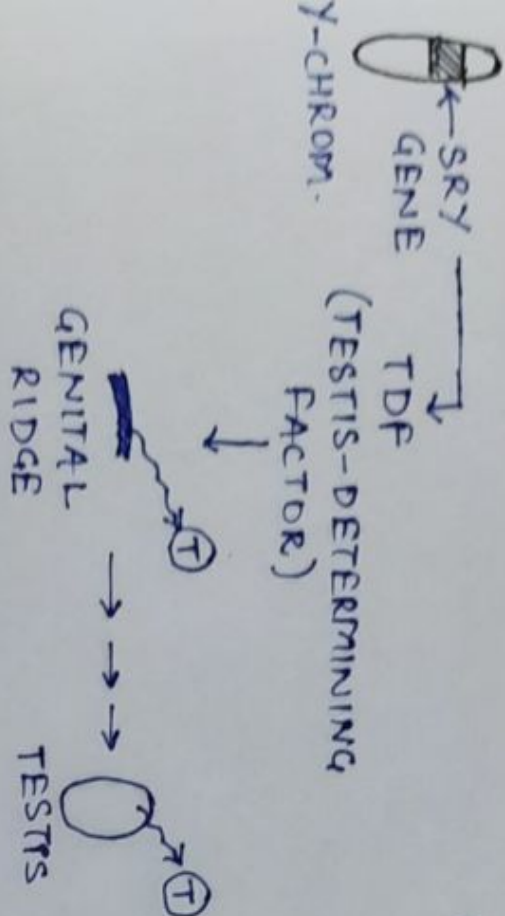
FEMALES → MALE SEC. SEXUAL CH.



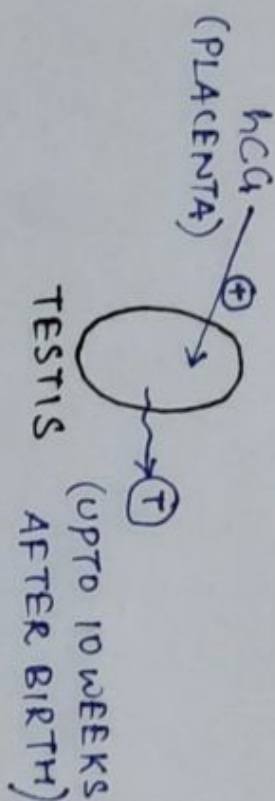
ADRENOGENITAL SYNDROME

RELEASE OF (T) DURING DIFFERENT PHASES OF LIFE SPAN:-

EMBRYONIC DEV.



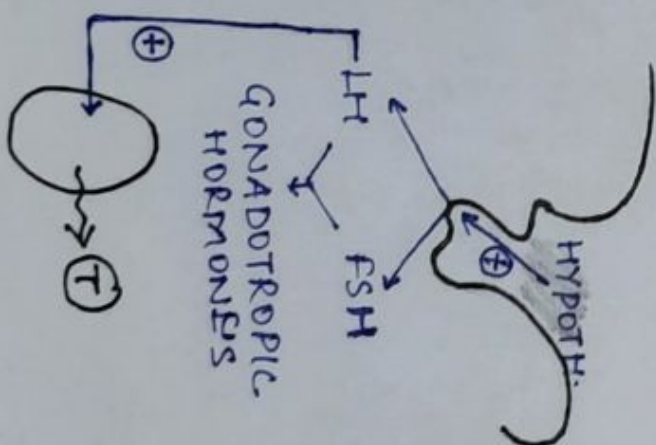
FETAL DEV.



10 WKS AFTER BIRTH TO 10-13 YRS (PUBERTY)

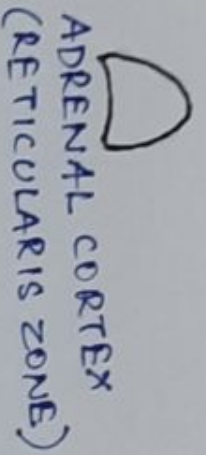
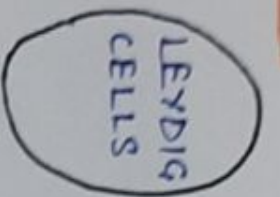
(T) SECRETION STOPS.

AFTER 10-13 YRS (AFTER ATTAINING PUBERTY)



METABOLISM OF (T) :-

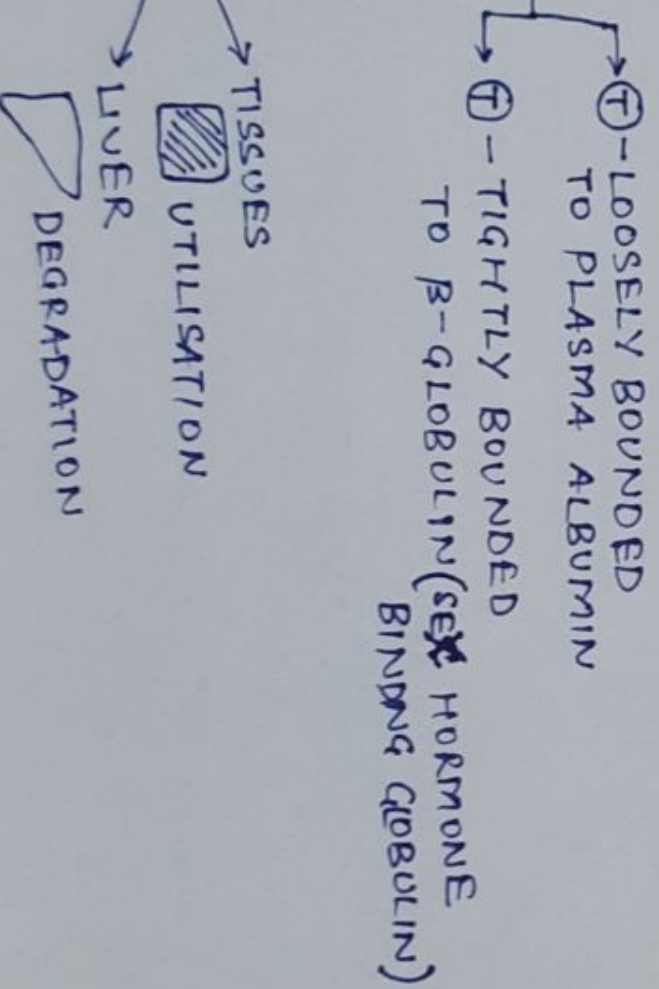
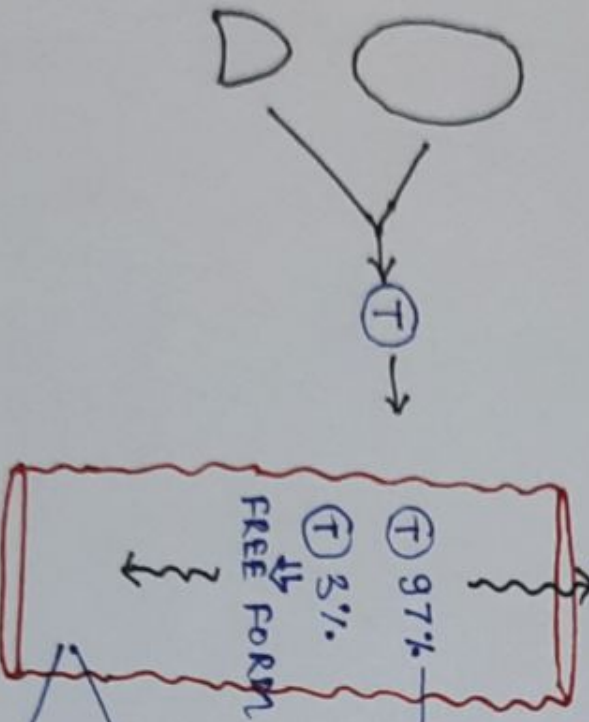
BIOSYNTHESIS :-



- CHOLESTEROL $\rightarrow \rightarrow \rightarrow$ (T)
- ACETYL COA $\rightarrow \rightarrow \rightarrow$ (T)

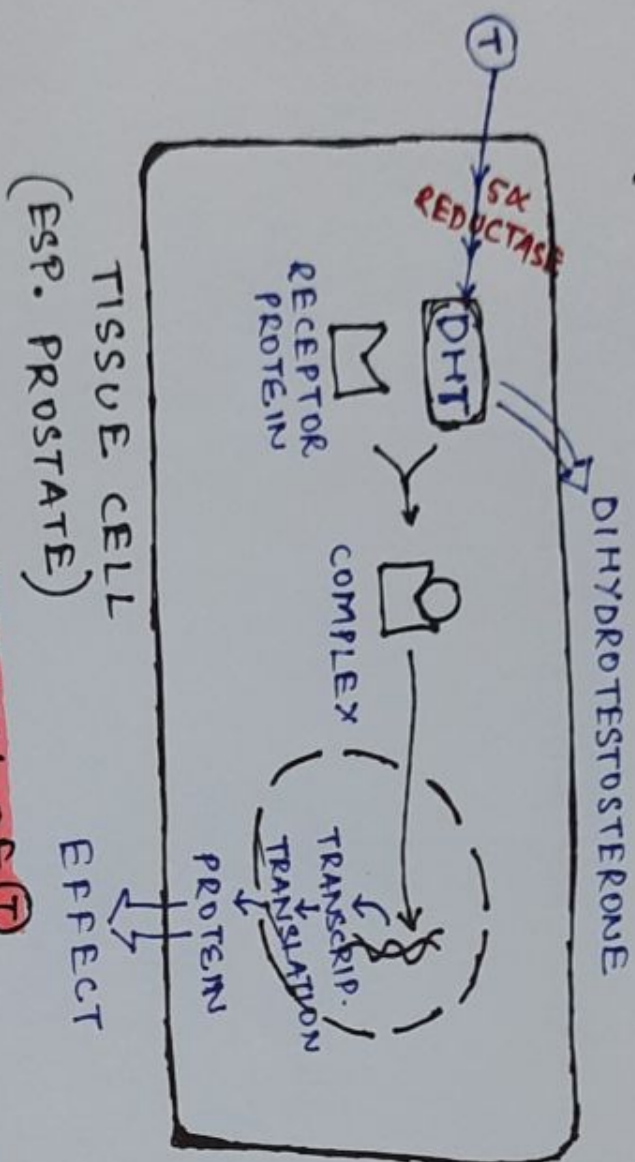
TRANSPORT :-

CIRCULATES FOR $\frac{1}{2}$ -1 HR

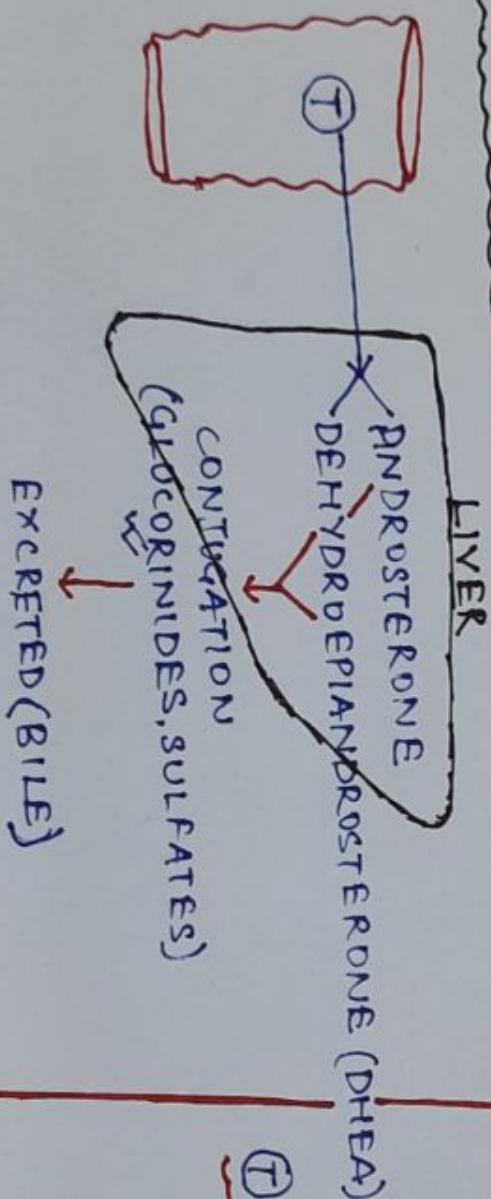


UTILISATION :-

* $T \rightarrow$ PROTEIN SYN $\rightarrow$ EFFECT
?



DEGRADATION AND EXCRETION OF T



T NOT GIVEN ORALLY

T ORALLY $\Rightarrow$ INTESTINE ABSORPTION $\rightarrow$

PORTAL BLOOD $\rightarrow$ LIVER

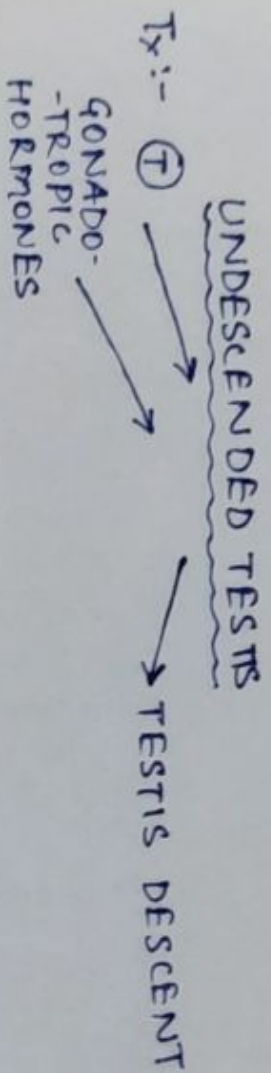
T INTRAVENOUSLY $\Rightarrow$ BLOOD CIRCULATE

RESPECTIVE TISSUES $\rightarrow$ EFFECTS ✓

FUNCTIONS OF (T) :-

① DESCENT OF TESTES

→ 7TH MONTH OF JUL COMPLETE

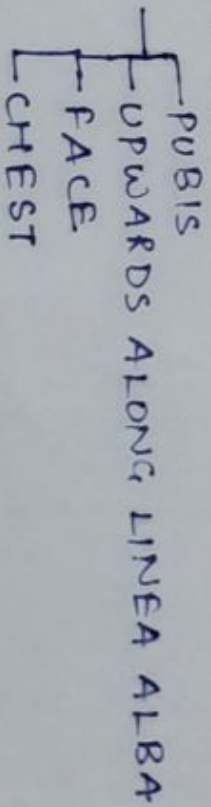


② PROMOTES SPERMATOGENESIS

(T) BINDS WITH ABP $\Rightarrow$ $\uparrow$ SPERMATOGENESIS

③ DEV. OF PRIM. AND SECONDARY SEXUAL CHARACTERS

(i) DISTRIBUTION OF BODY HAIR



(ii) MALE PATTERN BALDNESS

(T) $\rightarrow$ HAIR ON TOP OF HEAD $\downarrow$

BUT,

[PATTERN BALDNESS]

GENETIC BACKGROUND
SOMETIMES, ENV. FACTORS

+

(T)

$\Rightarrow$

PATTERN
BALDNESS

(iii) VOICE

① ⇒ HYPERTROPHY OF LARYNGEAL MUCOSA
⇒ ENLARGEMENT OF LARYNX
→ MUSCULINE VOICE

(iv) THICKNESS OF SKIN; DEV. OF ACNE

① → ↑ THICKNESS OF SKIN
→ ↑ RATE OF SECRETION BY SEBACEOUS GLAND

↓
ACNE DEVELOP

SEVERAL YRS. OF ① SEC.

↓
SKIN ADAPTS TO ①

↓
ACNE OVERCOME

(v) ↑ PROTEIN FORMATION & MUSCLE DEVELOPMENT.

(vi) ↑ BONE MATRIX & Ca^{++} RETENTION

① → BONE THICKER

→ NARROW PELVIC OUTLET
LENTHER PELVIS

FUNNEL SHAPED PELVIS
(INSTEAD OF BROAD OVOID SHAPE)
STRENGTH OF PELVIS ↑

① ↑
↓
CHILD GROWTH ↑

↓
UNITES EPIPHISES OF LONG BONES TO SHAFT

↓
FURTHER GROWTH COMPLETELY STOPS.

ABNORMALITIES :-

① CRYPTORCHIDISM :-

→ UNDESCENDED TESTIS ON ONE OR BOTH SIDE
[REMAINS IN AB. CAVITY / INGUINAL CANAL]

EFFECT :-

SEMINIFEROUS TUBULES → INFANTILE (TEMP. ↑)

SPERMATOGENESIS X
↓
STERILITY

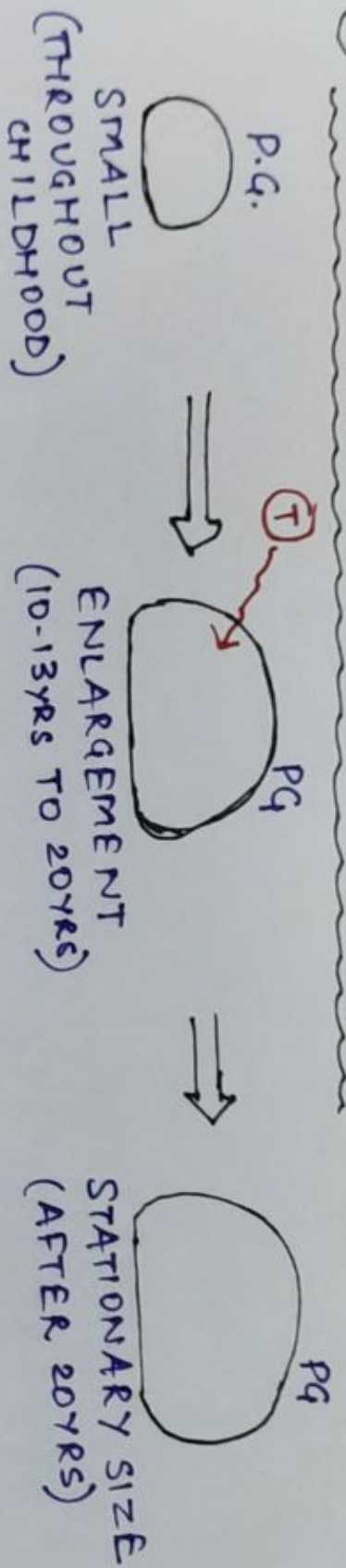
Ty :-

• ①

• ANT. PITUITARY }
GONADOTROPIC } → DESCENT
HORMONES } OF
TESTES

GIVEN MUCH BEFORE PUBERTY
[TILL PUBERTY, STERILITY & MALIGNANCY DEVELOPS]

② PROSTATE GLAND & ITS ABNORMALITIES



BENIGN PROSTATIC HYPERPLASIA

- FREQ. DEV. IN OLDER MEN
- CAUSES URINARY OBSTRUCTION
- NOT CAUSED BY T; CAUSED BY ABNORMAL OVERGROWTH OF PROSTATIC TISSUE



CANCER OF PROSTATE GLAND

- 2-3% OF ALL MALE DEATH
- T NORMAL LEVEL → RAPID GROWTH OF CANCEROUS CELLS.

Tx:-

- ⊖ BY REMOVAL OF BOTH TESTES (Tx)
- ADMINISTRATION OF ESTROGENS.

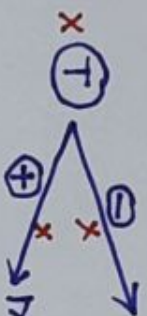
③ HYPOGONADISM IN MALE

→ NONFUNCTIONAL TESTES OF MALE FETUS

- NO MALE SEXUAL CHARACTER DEVELOPS
- FEMALE ORGANS FORMED

BASIC GENETIC CHARAC. OF FETUS

↓
TO FORM FEMALE SEXUAL ORGAN.



→ MALE SEX ORGANS FORMATION

→ BEFORE PUBERTY
(TESTES DESTROY)

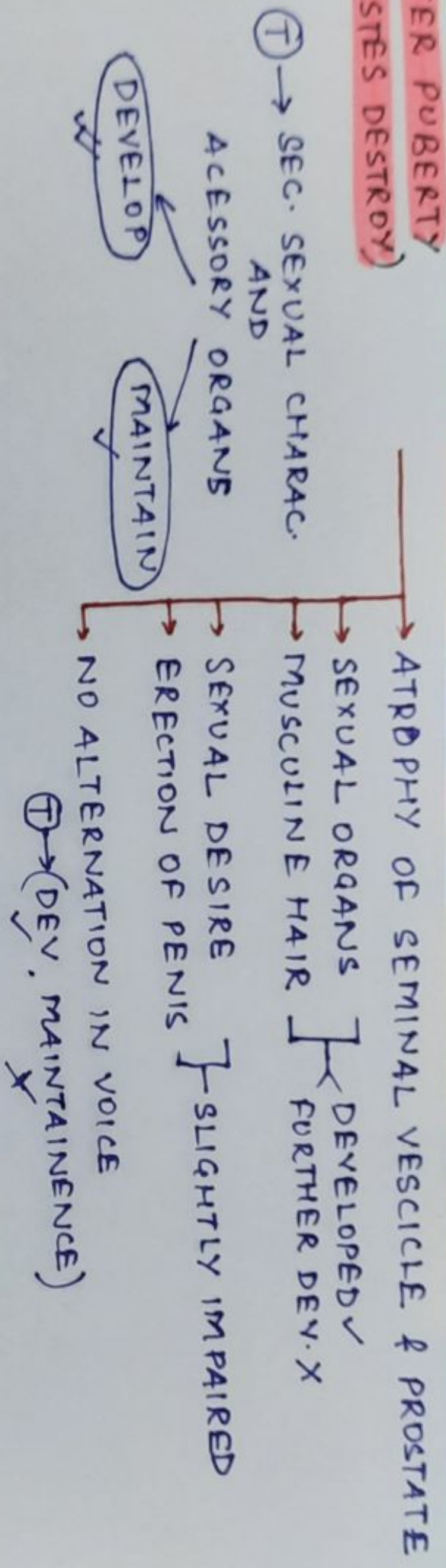
① ABSENT → PERMANENT STERILITY



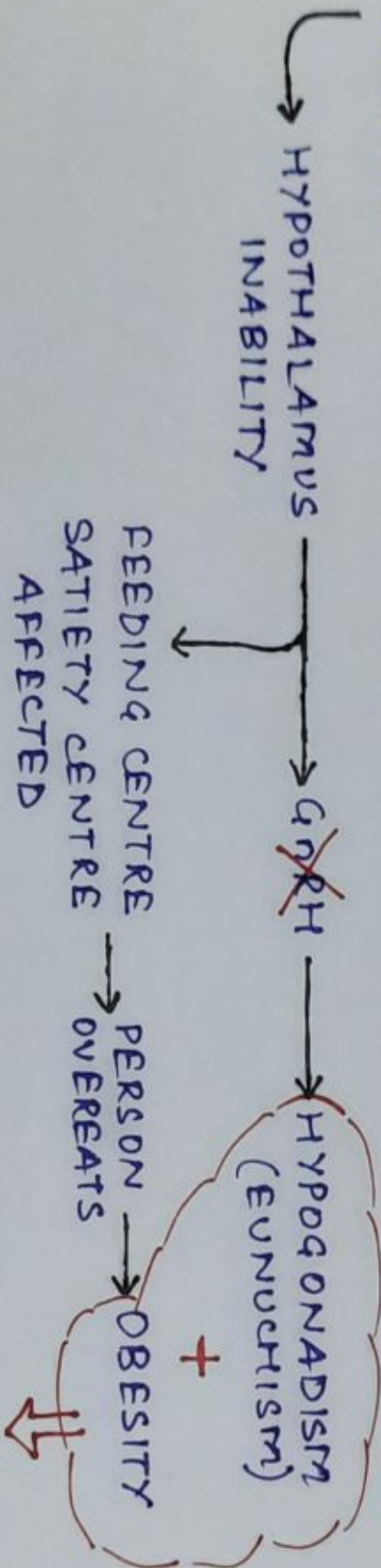
EUNUCHISM

- INFANTILE SEX ORGANS
- ↓ SEXUAL CHARACTERS
- HEIGHT SLIGHTLY GREATER (D/T SLOW UNITING OF EPIPHYSIS)
- BONES - THIN, MUSCLES - WEAK
- VOICE CHILD LIKE
- NO MASCULINE HAIR GROWTH ON BODY.

AFTER PUBERTY (TESTES DESTROY)



GENETIC INABILITY



ADIPOSOGENITAL SYNDROME
OR
HYPOTHALAMIC EUNUCHISM
OR
FRÖHLICH SYNDROME