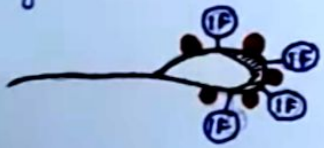
CAPACITATION OF SPERM :-

Mature

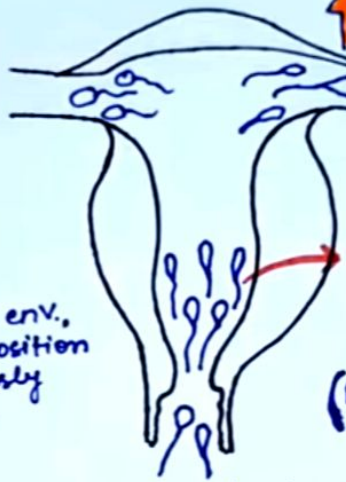
But ↓activity due to Inhibitory factors, cholesterol secreted by epithelia of genital ducts.

D/t cholesterol env., cholesterol deposition continuously occurs.



→ DECAPACITATION OF SPERMS

IF, cholesterol
- → Toughens the membrane
- → prevents release of enzyme from acrosome
- → ↓ motility of sperm



Sperms on coming in contact with fluids in female genital tract (Fluids of uterine tube & fallopian tube)

After capacitation of sperm
- → Loosening of membrane
- → Enhances release of enzymes from acrosome
- → ↑ motility of sperm.

→ Wash away of Inhibitory factors

→ In vagina ; In uterine cavity
- In vagina ↓ Absence of cholesterol environment
- In uterine cavity ↓ Removal of cholesterol present.

→ Memb. permeability for Ca^{++} ↑ see ⇩
- Ca^{++} ↑ activity of flagellum (↑ power of motion)
- Ca^{++} weakens memb. covering acrosome

CAPACITATION OF SPERMS

ACROSOME REACTION :-

Reaction between acrosome of sperm & receptors on zona pellucida of ovum

Acrosome

↓

Hyaluronidase & proteolytic enzymes

↓ Depolymerises hyaluronic acid polymer in intercellular cement that holds granuloca cells together

↓ Digests proteins in structural elements of tissue cells that still adhere to ovum

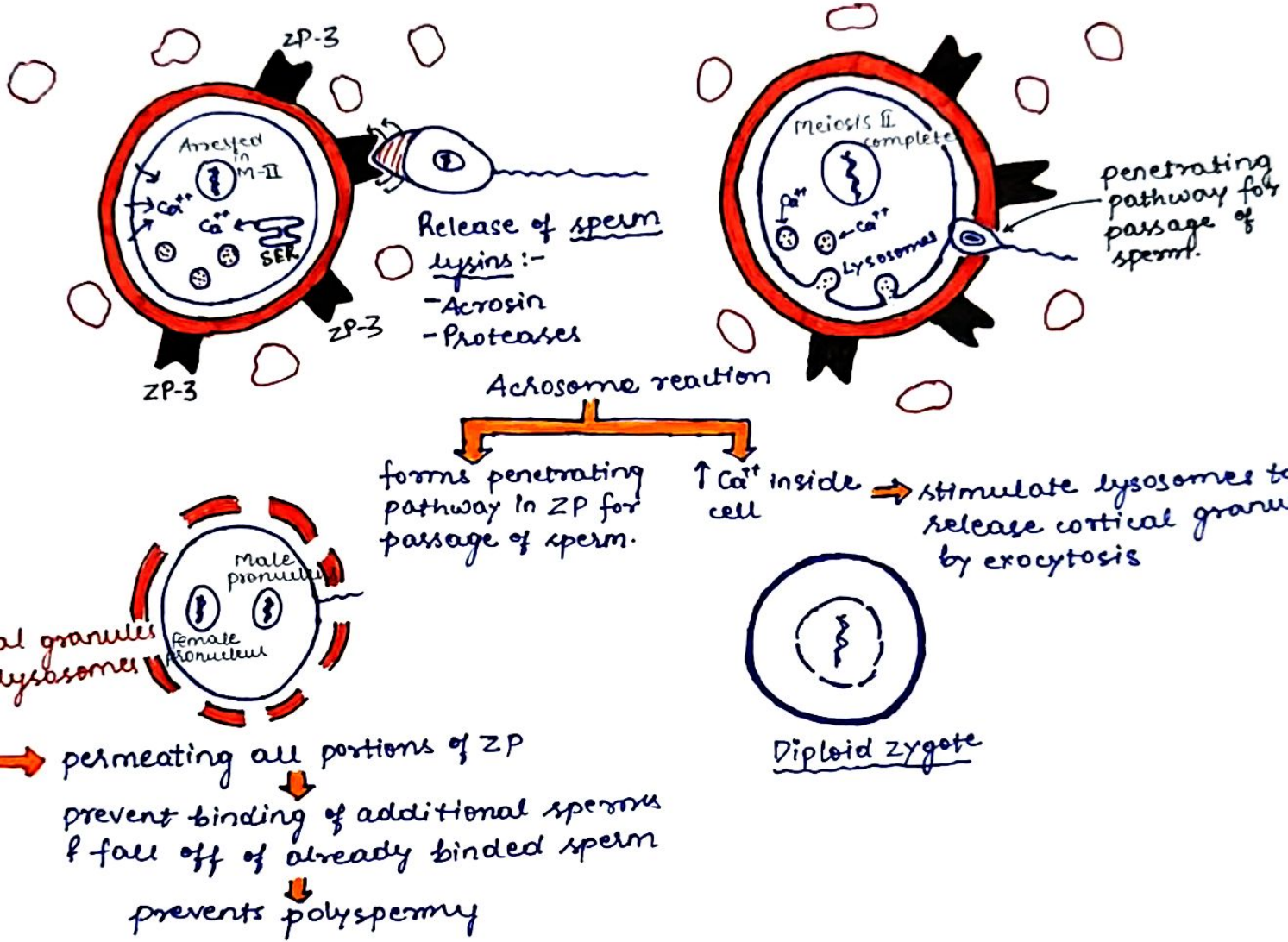
↓ Intercellular cement ⇒ structural elements

↓

- - - HA HA HA HA - - -

↑ Hyaluronidase

↑ proteolytic enzymes


ZP-3
Arrested in M-II
Ca^{++}
Ca^{++}
SER
ZP-3
ZP-3
Release of sperm lysins :-
-Acrosin
-Proteases
Meiosis II complete
Ca^{++}
Ca^{++}
Lysosomes
penetrating pathway for passage of sperm.
Acrosome reaction
forms penetrating pathway in ZP for passage of sperm.
$\uparrow Ca^{++}$ inside cell
stimulate lysosomes to release cortical granules by exocytosis
Male pronucleus
Female pronucleus
Cortical granules from lysosomes
permeating all portions of ZP
prevent binding of additional sperms & fall off of already binded sperm
prevents polyspermy
Diploid zygote