

FERTILIZATION

- Cleidoic eggs(Not in humans) – **Internal Fertilization and External development**
- Fusion of male & female Gamets to form **zygote**.
- Usually the time period is **14th to 16th day** [Egg releasing day]
 - Fertilization was discovered by **Stras burger**
 - Site of Fertilization in a Mammal is **Fallopian Tube**
 - Fertilization is Fusion of **Haploid spermatozoa with Haploid ovum – Diploid zygote**.

Approach of sperm: (Release of semen in Vagina)

- Single Ejaculation (**Insemination**)
- 3 to 3.5 million of sperms contain **semen** deposit vagina.
- 200 – 300 millions are **Vanished**, 50 – 100 million **Survive**.

Help

- ✚ Tail help to reach the sperm to the junction
- ✚ Prosta glandin helps to reach Fallopian Tube.
- ✚ Aspiratory movements of Uterus.

Barrier

Thick Endometrium **line act as a barrier**

Acidic pH of female reproductive tract **kills sperm**.

Phagocyte **Engulf the sperm**

Finally 100 sperms only reach Fallopian tube.

- Before attach of sperm to the ova
- Capacitation of sperm occurs in Female Genital tract.
- **Capacitation** is a Preparation of Sperm before penetration of ovum is capacitation.
- Before attach of sperm to the ova.

Reactions Occur:

Fertilizin_(Secretes-Ovum) → anti Fertilizing agent Reaction
(Secretes – sperm)

It is an agglutinating agent, Glycoprotein nature.

Based on this reaction – Attracts both together & finally attach.

- ✚ Which chemical of the egg attracts and holds sperm – **Fertilizin**
- ✚ Which secretion are produced by spermatozoa at the time of Fertilization – **Anti Fertilizing & Spermysin.**

Spermysin:

Attracts egg vitelline Envelope. **II meiotic division of egg triggers & attracts sperm.**

Sperm enters the egg from – **Animal pole.**

- Which part of sperm that enter into ovum is – **Sperm head**
- Which area of ovum, act as a site of entry of sperm – **Grey crescent.**
- Sperm always enters through Animal pole & blocks additional sperms
- Sperm Acrosome lysis & digest **Zona pellucid.**
- Acrosome secretes an enzyme – **Hyaluronidase (degradation of hyaluric acid) (attracts) & Acrosin(digestive enzyme).**

- Absence of acrosome the sperm is – cannot penetrate the egg.
- A change occurs in ovum after penetration of sperm – **II Meiosis division.**
- Extrusion (**used to create objects**) of 2nd polar body from egg Nucleus occurs. **After entry of sperm emption of Fertilization.**
- Fertilized ovum is transplanted in uterus after **7 – days.**
- Which centrioles of sperm Initiate 1st zygotic division **Proximal centrioles.**
- Sex of the chromosome has been decided in this stage itself.

Based on the chromosome pattern.

Human Female – $x x$
haploid gameter (Ova)

Male – xy 50:50
(Sperms)

Zygote carry – $x x$ or xy
Female Male

So, Father sex chromosome decides **Sex of the baby.**

