

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

**Conception
& Implementations**

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objective

- By the end of this lecture the student will be able to
 - Define the Conception
 - List the items of male organ
 - Explain the path physiology

Male reproductive organ

A. Basic Structures •

1. scrotum •

2. testes •

3. epididymis •

4. vas (ductus) deferens •

5. ejaculatory ducts •

6. accessory glands •

7. penis •

Basic Functions

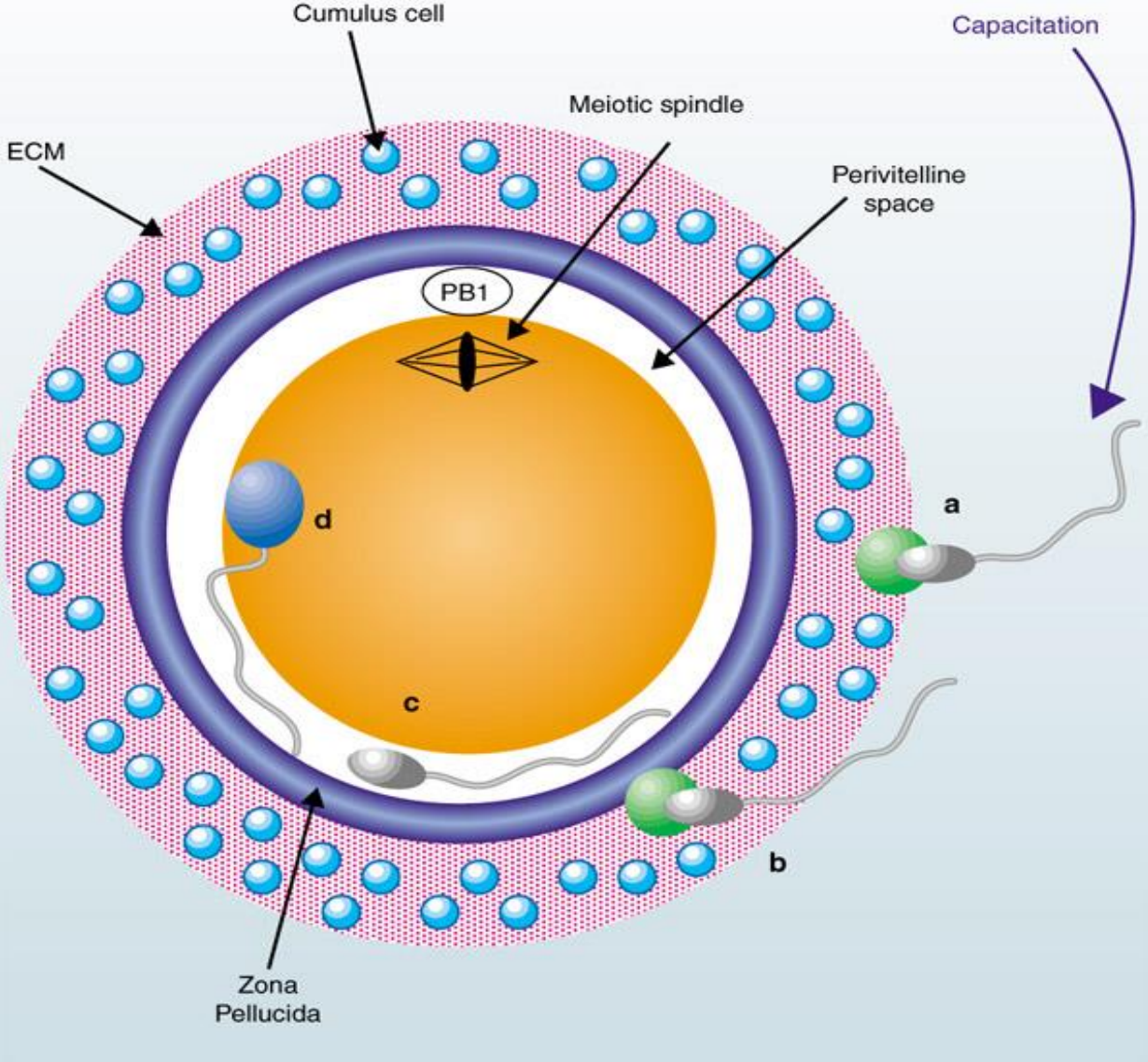
1. production and storage of male gametes (sperm) ●
2. ability to pass gametes on for procreation ●

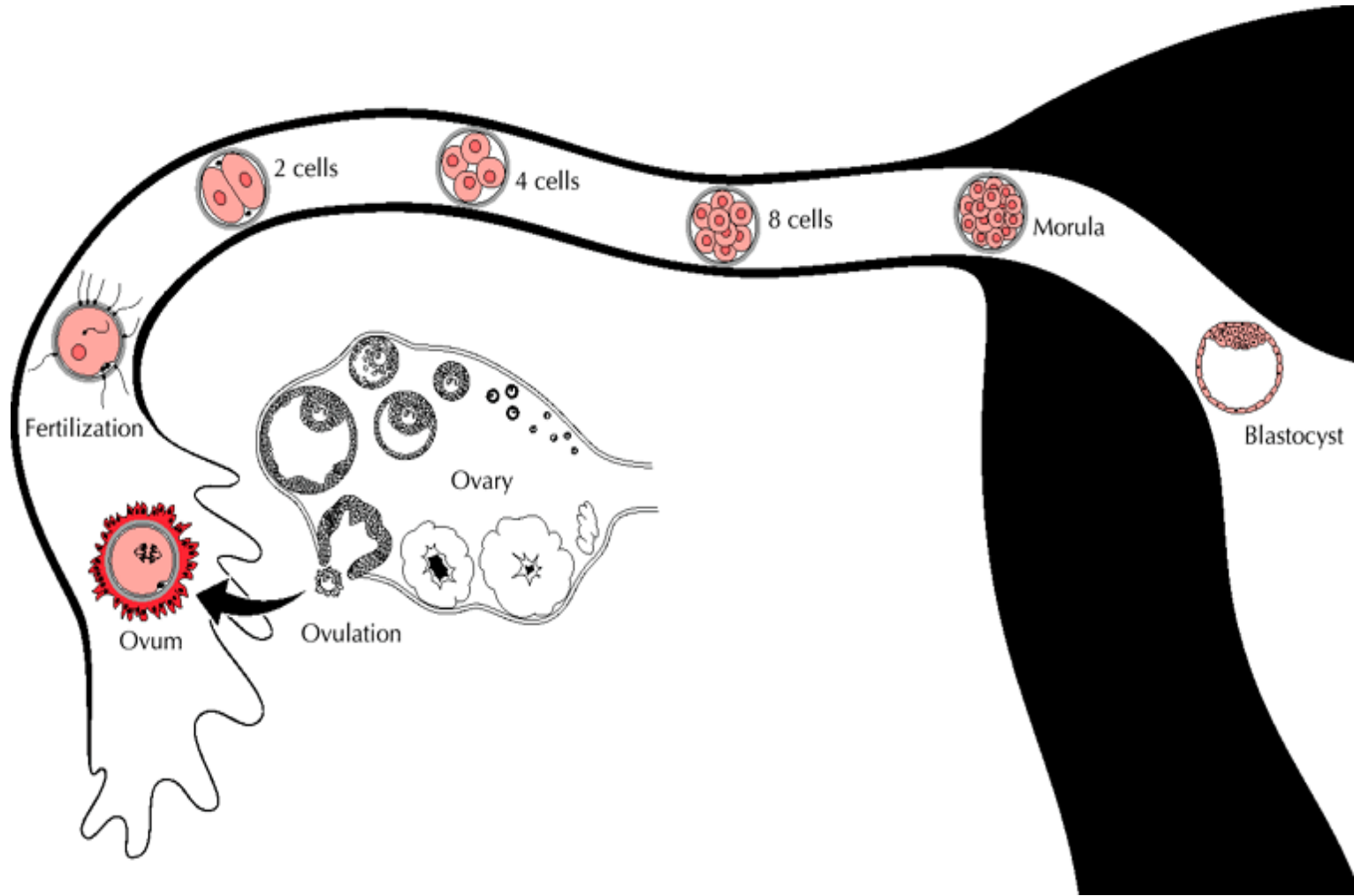
Epididymis

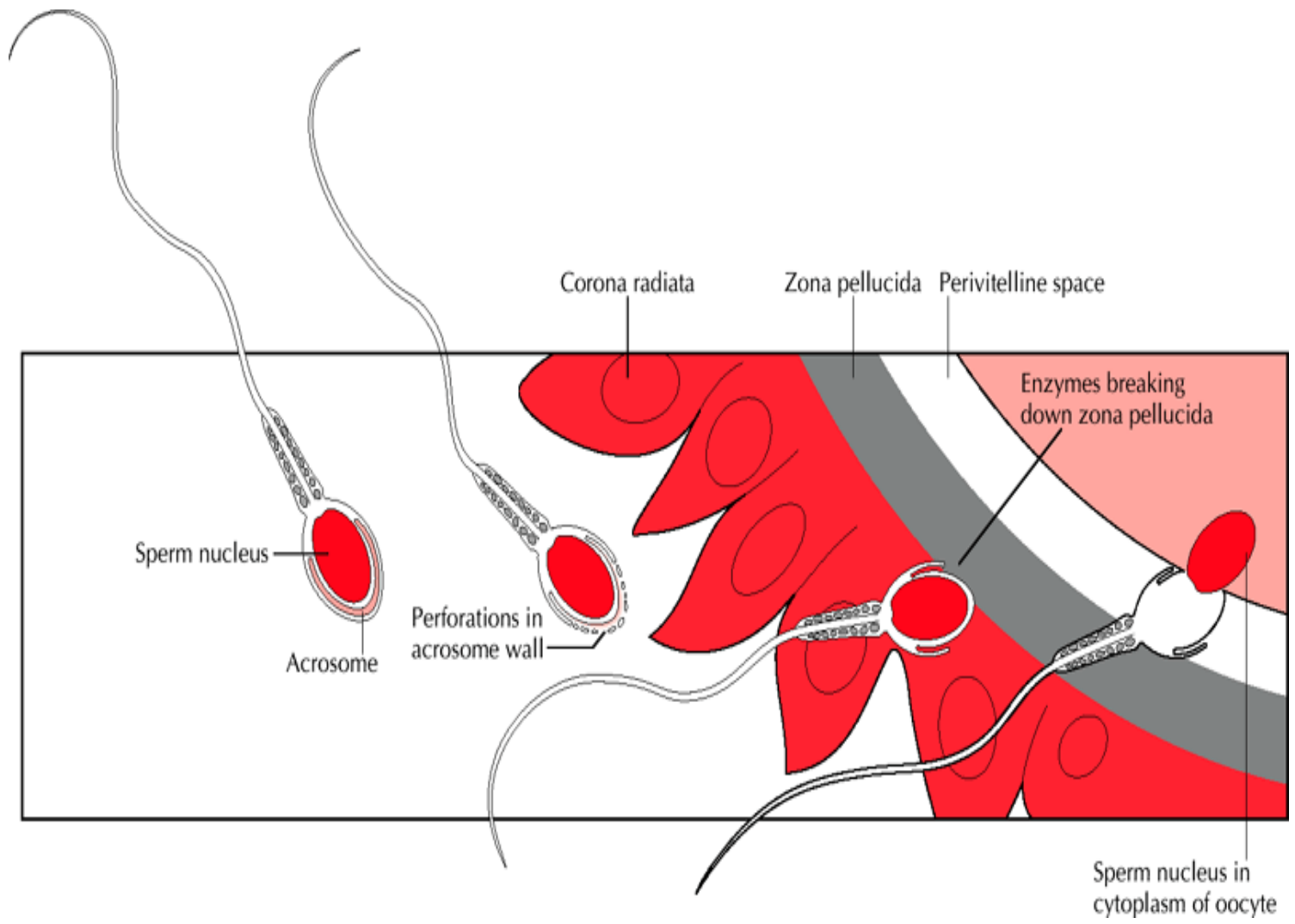
1. curves around the posterior aspect of testis
2. ductus epididymis - tightly coiled tube
3. site of sperm maturation and storage
4. 10 - 14 days for sperm to completely mature
5. stored for up to 4 weeks then destroyed

Conception

- The sperm reaches the caudal epididymis approximately (72) days after the initiation of sperm
- The alkaline pH of semen provides protection for the sperm from the acid environment of The vagina
- sperm can be found in the tube 5 minutes after insemination







Physiology of Reproduction

The spermatozoa leave the testis carrying 23 chromosomes but •
not yet capable of

Fertilization

Their maturation is completed through their journey in the 6 •
meters of the

epididymis and when mixed with the seminal plasma from the
epididymis, seminal
vesicle and prostate gland.. •

cont

The sperms ascent through the uterine cavity and Fallopian tubes to reach the site •

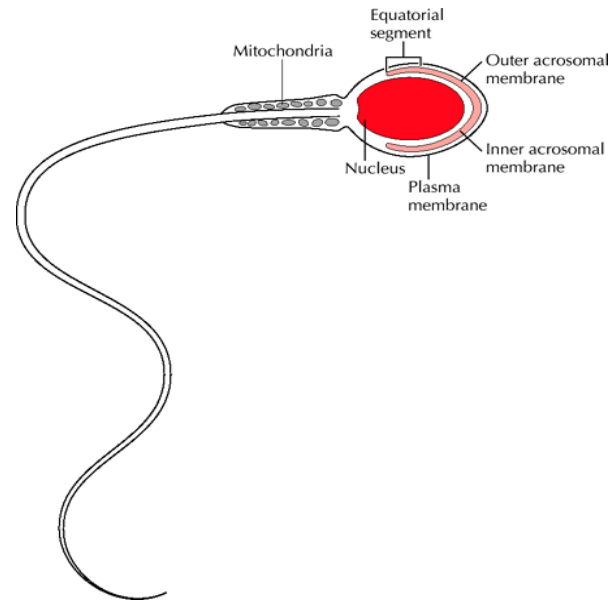
of fertilization in the ampulla by:

1- its own motility, •

2- uterine and tubal peristalsis which is aggravated by the prostaglandins •

cont

The sperms reach the tube within 30-40 minutes but they are •
capable of
fertilization after 2-6 hours. This period is needed for sperm •
capacitation.



Capacitating

is the process after which the sperm becomes able to •
ovum and penetrate the zona pellucida, that surrounding the •
fertilize it. The cervical
and tubal secretions are mainly responsible for this •
capacitating

Embryology and Development

Stage of conception

A. **preembryonic period** (preembryo) ●

conception -> Week 2

B. **embryonic period** (embryo) ●

Week 3 -> Week 8

C. **fetal period** (fetus) ●

Week 9 -> birth

Cont

nuclei of sperm and egg join to form diploid zygote •

Cleavage and Implantation •

1. cleavage - rapid divisions of the zygote •

a. zygote -> blastomeres (2 cells) •

36hours.

-> morula (16+ cells) 72 hours •

-> blastocyst (100+
cells) 5 days •

Cont

formation of the embryonic membranes 10 -> 21 days •

a. amnion - water sac surrounding embryo/fetus •

i. protects and stores waste products •

b. yolk sac - source of germ cells for growth •

c. chorion - (part of placenta) •

d. allantois - base for the umbilical cord •

Embryonic Development

(3)Primary Germ Layers

1. embryonic disc -> 3 layered gastrula

a. ectoderm - on the amniotic surface of embryo

i. nervous system, skin epidermis

b. mesoderm - middle of the "sandwich"

i. muscle, bone, blood, connective tissues

c. endoderm - on the yolk sac surface of embryo

i. epithelia - digest, resp, urogen, glands

ovum

- leaves the ovary after rupture of the Graafian follicle, ●
- carrying 23
- chromosomes and surrounded by the zona pellucida ●

Fertilization

Millions of sperms ejaculated in the vagina, but only •
hundreds of thousands reach
the outer portion of the tubes. Only few succeed to •
penetrate the zona pellucida,
and only one spermatozoon enters the ovum •

cont

After penetration of the ovum by a sperm, the zona pellucida •
resists penetration by
another sperms due to alteration of its electrical potential. •

Implantation

is the process by which an embryo attaches to the uterine wall •
and penetrates first the epithelium and then the circulatory
system of the mother to form the placenta.

Cont

The blastocyst loosely adheres to the endometrial epithelium, a process called *apposition*, which most commonly occurs on the endometrium of the upper posterior wall of the uterus. •

Cont

In the second week after ovulation, the placenta is •
formed.

By this time, the trophoblast at the implantation site have •
formed masses of cytotrophoblasts and
syncytiotrophoblasts, and invasion of maternal blood
vessels has begun.



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