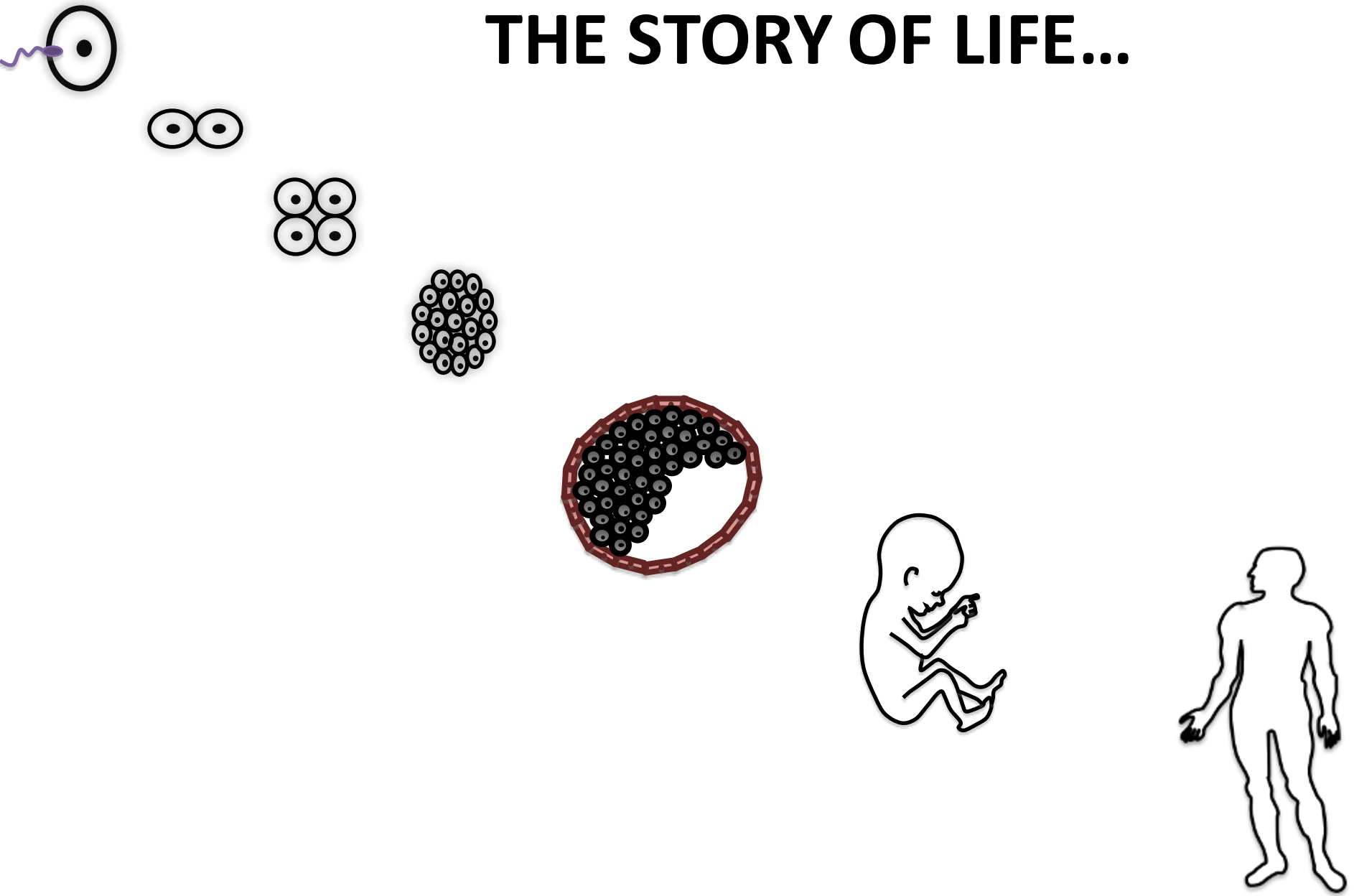
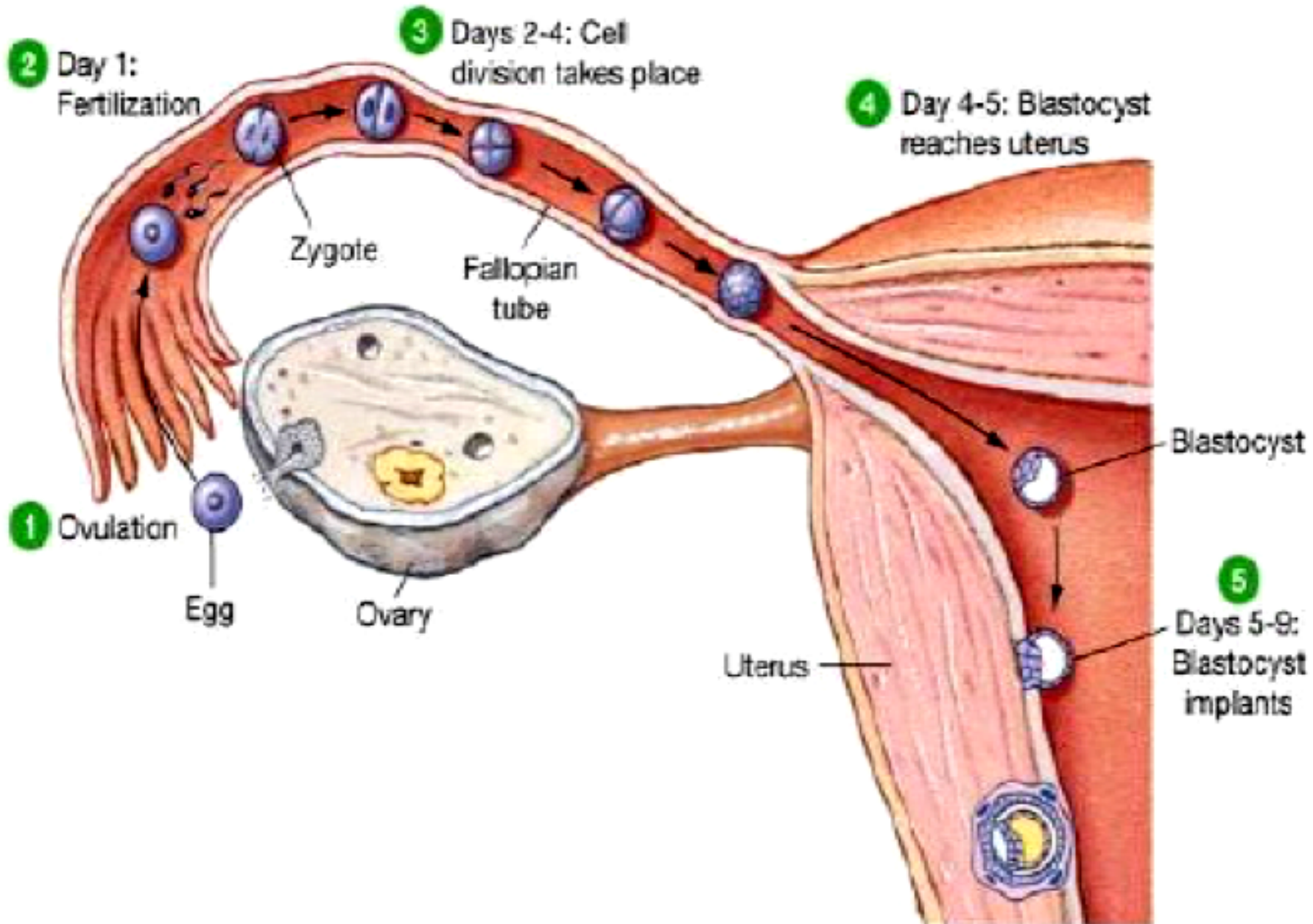
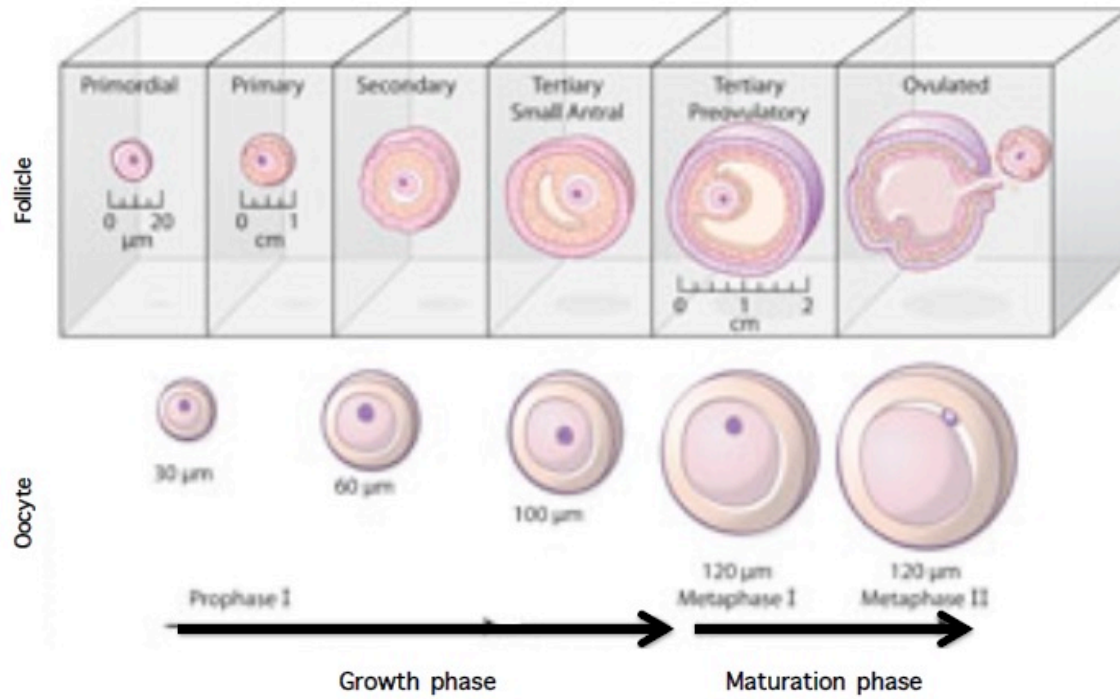


THE STORY OF LIFE...



Accomplishing Fertilization

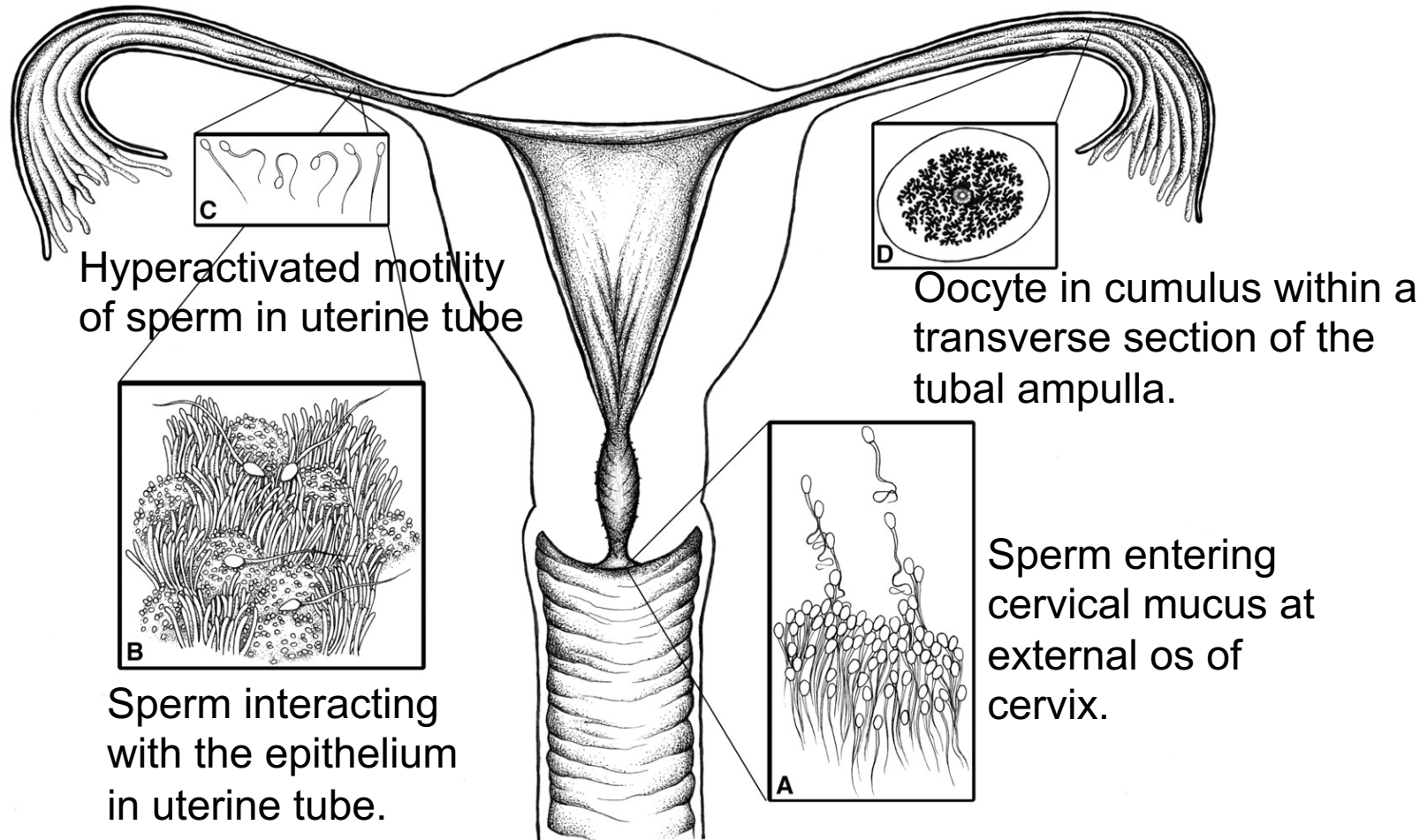




The mature oocyte is the unique cell of the body able to become a totipotent stem cell if properly activated.



Sperm Transport



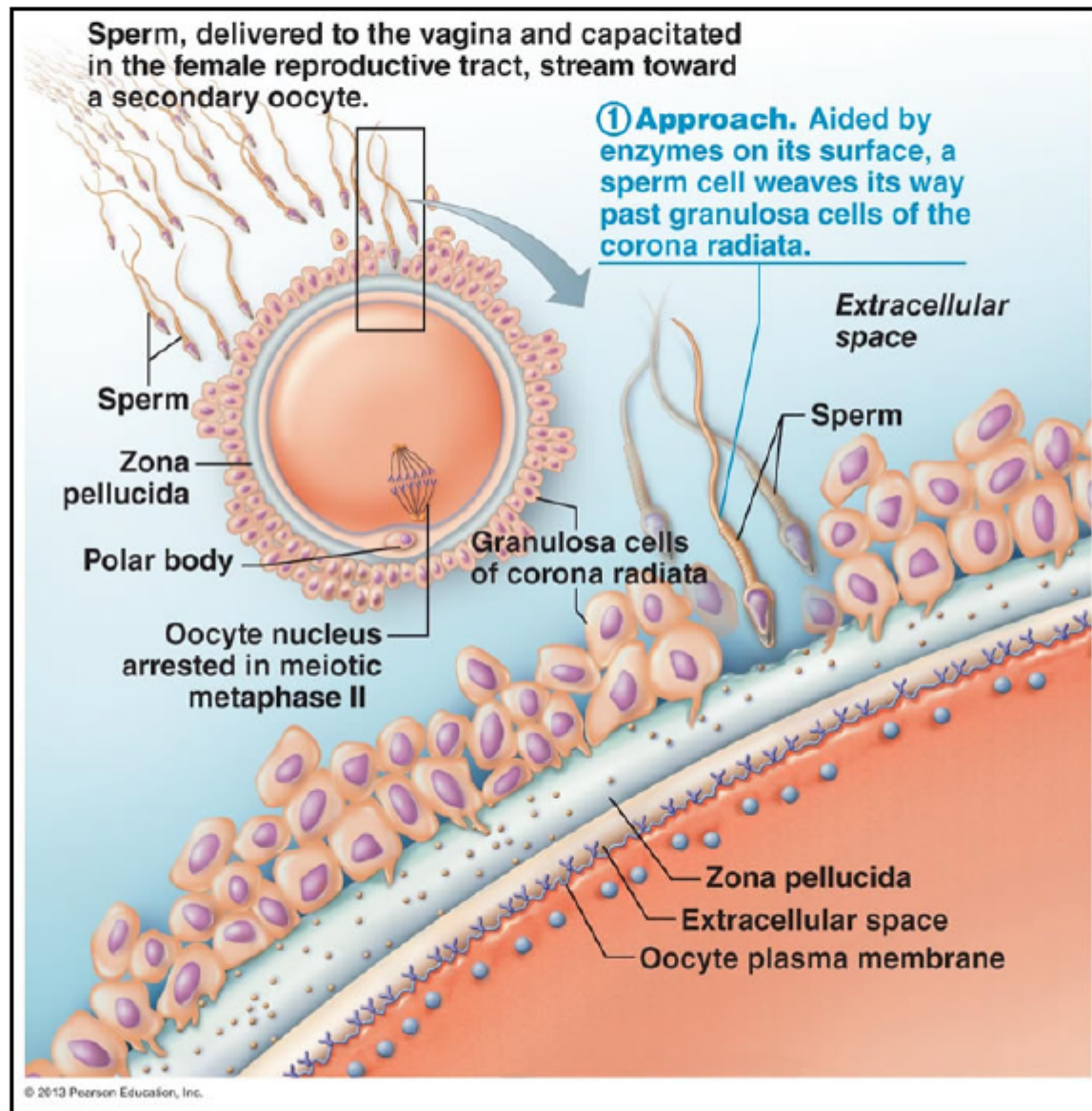
Human female reproductive tract illustrating stages of gamete transport

- **Capacitation:** the process in the female reproductive tract whereby the ejaculated sperm become capable of fertilizing the egg
 - Acrosomal membrane must become fragile

Acrosomal Reaction and Sperm Penetration

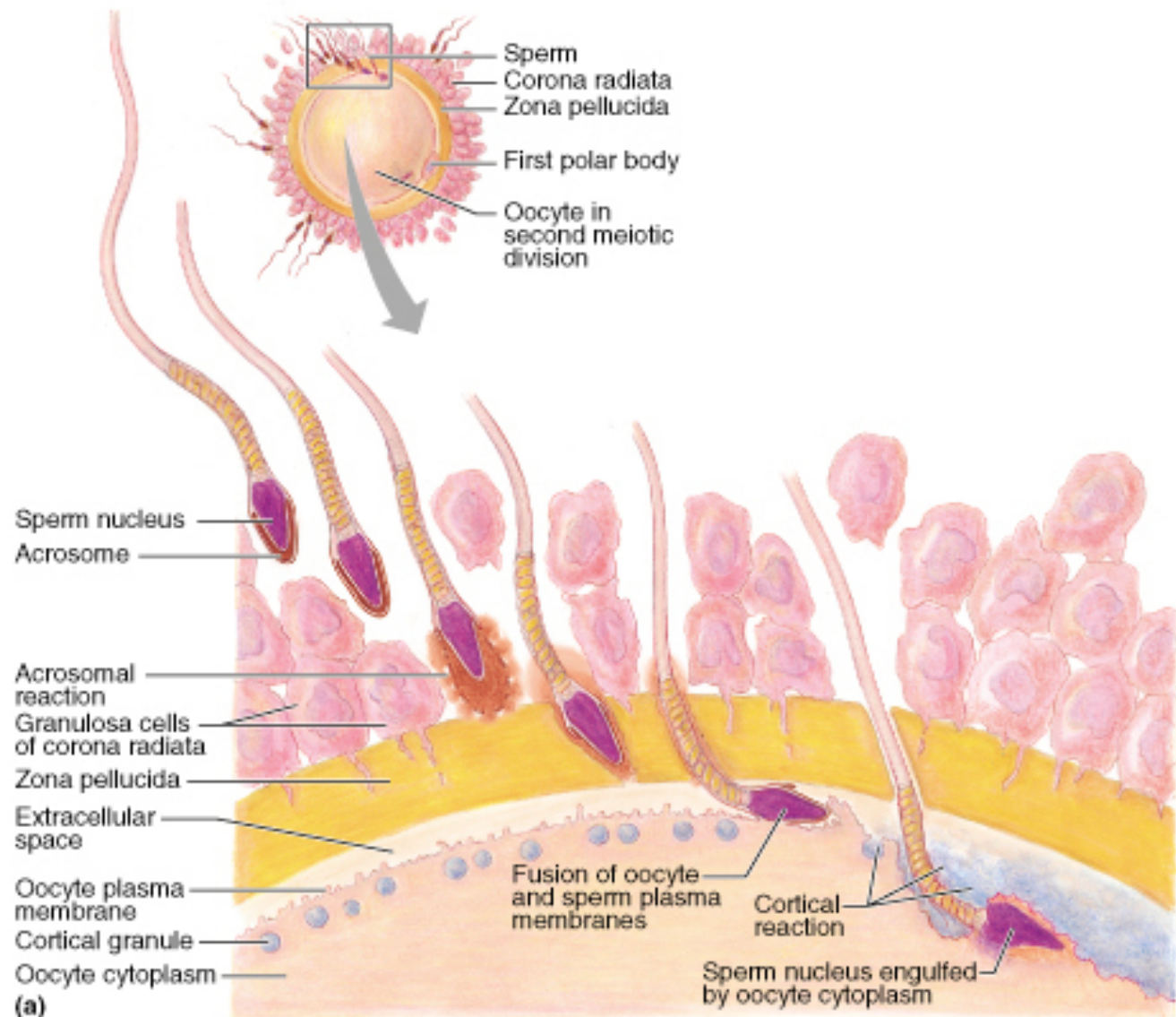
- Acrosomal reaction: release of the digestive enzymes (acrosin, other proteases) from the sperms' acrosome
 - Hundreds of sperm must participate

Acrosomal Reaction and Sperm Penetration



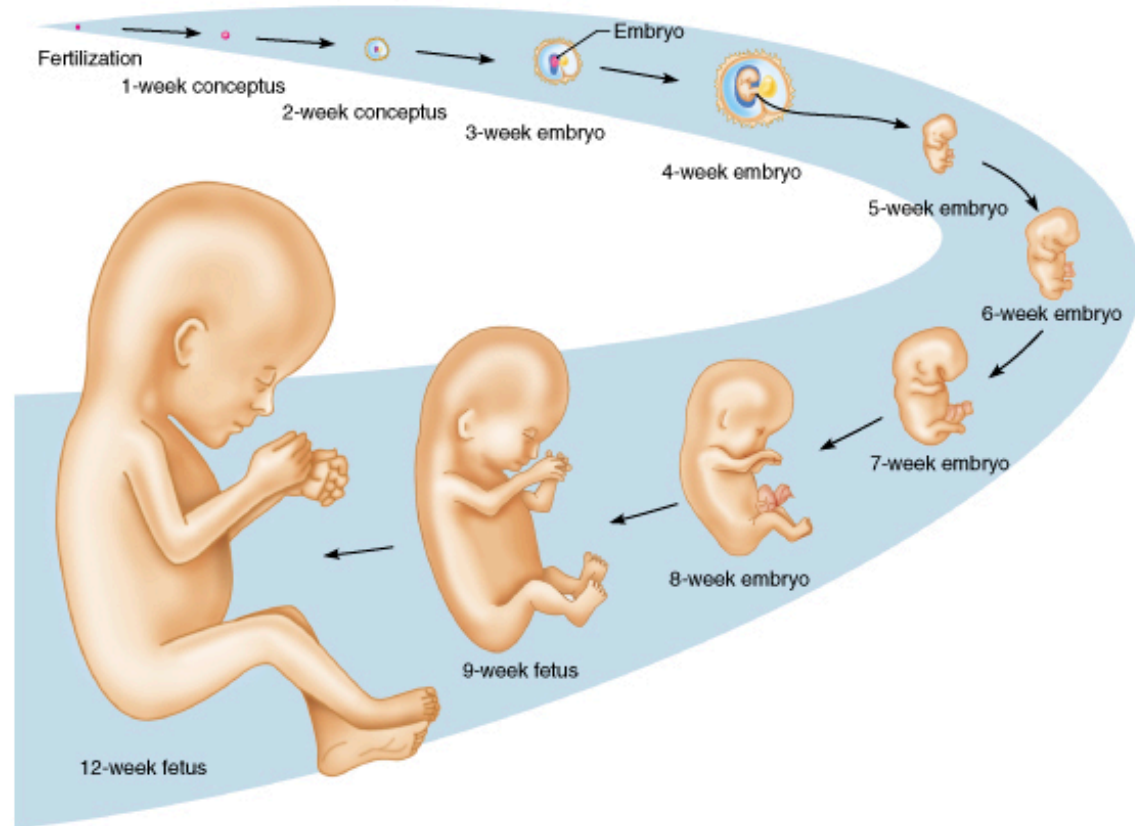
Fertilization

- If timing is ideal, sperm reach the oocyte in the ampulla of the uterine tube
- Sperm move by flagellar action but also receive an assist from uterine tube peristalsis



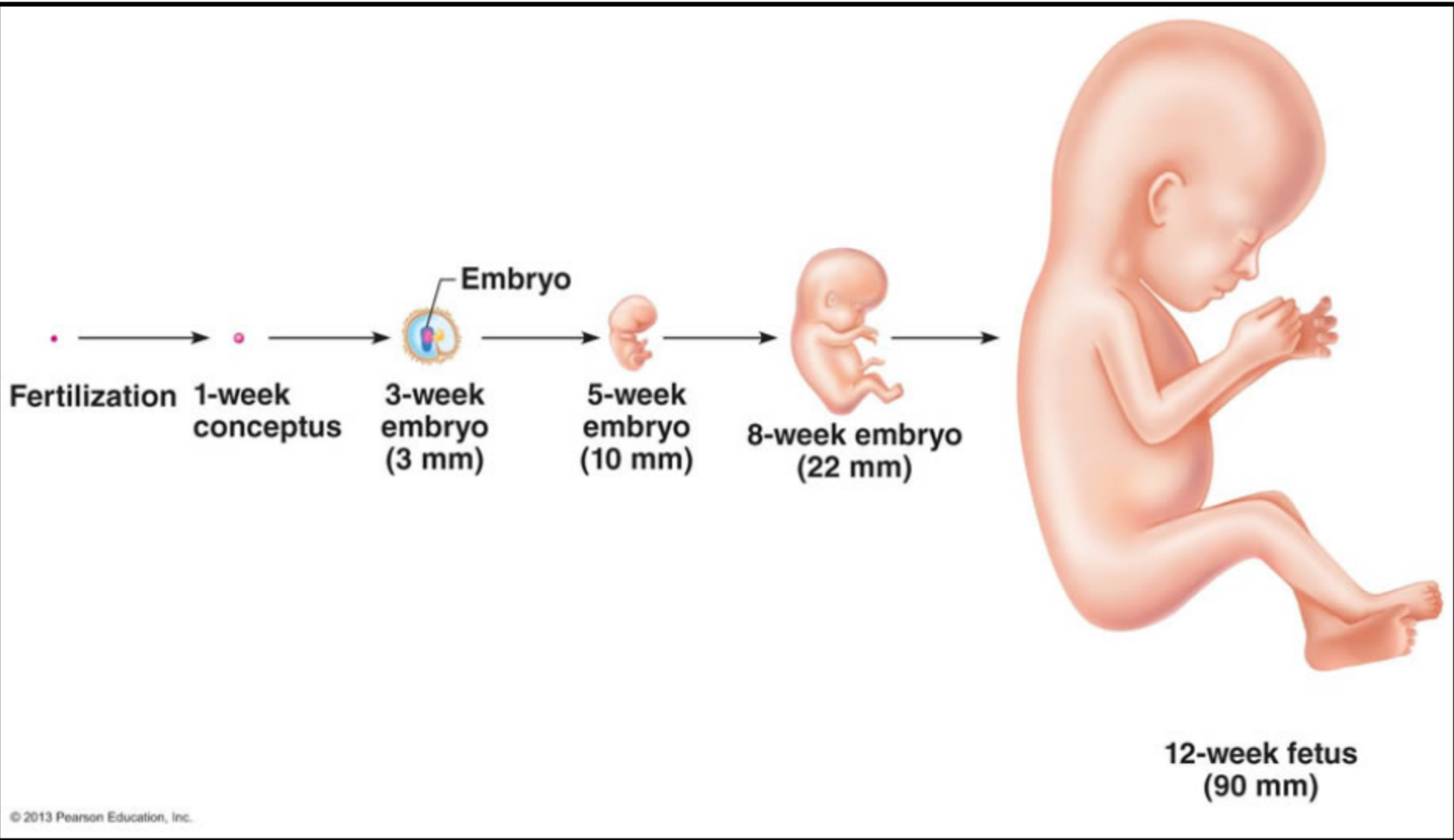
Pregnancy

- Events from fertilization to birth
- Conceptus → Embryo → Fetus : the developing offspring
- Gestation period: the time during which development occurs



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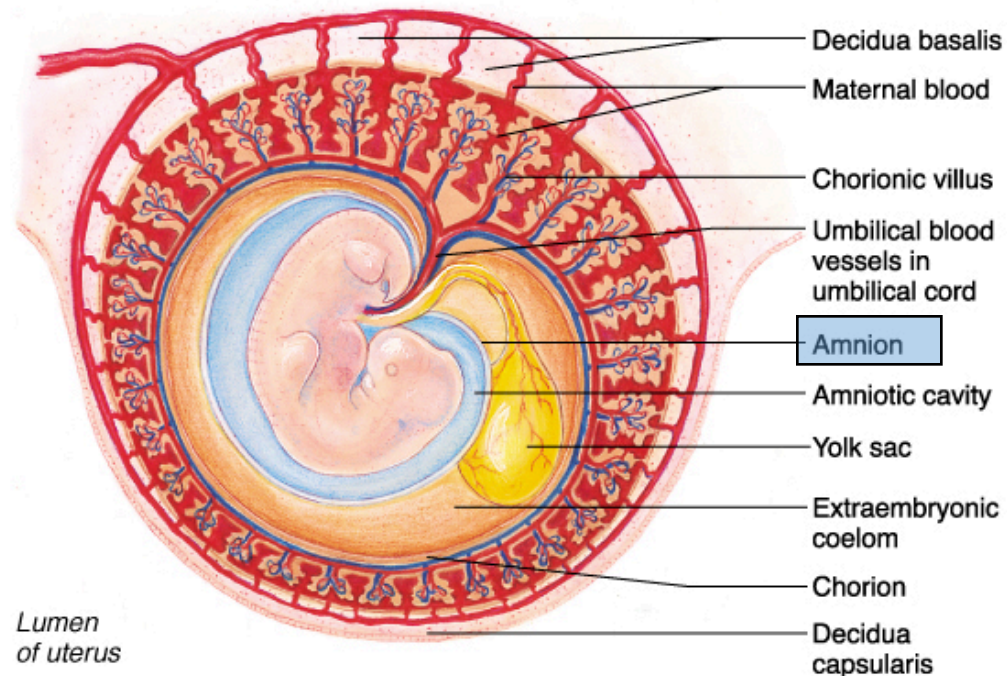
Pregnancy



<https://www.youtube.com/watch?v=DGyRD9HnXVs>

Amnion (inner membrane) envelops and protects embryo

- amnion – epiblast cells form a transparent membrane filled with amniotic fluid – a maternal plasma filtrate
- amniotic fluid comes from maternal blood, and, later, fetal urine adds to it
- amniotic fluid acts as a liquid shock absorber to protect the fetus
- helps maintain uterine internal homeostatis
- amniotic fluid may be sampled to determine certain aspects of fetal health



(d) 4½-week embryo

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