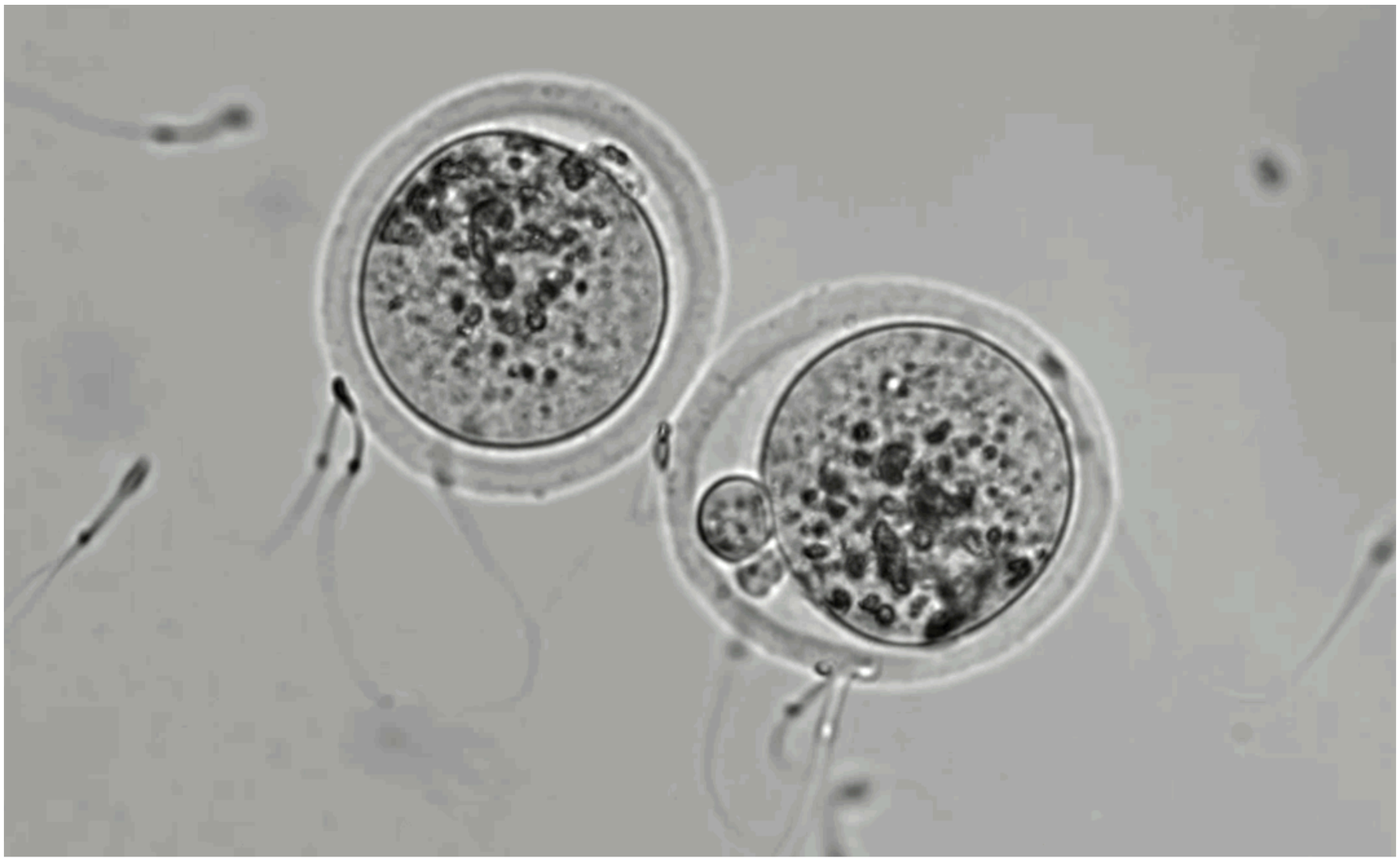
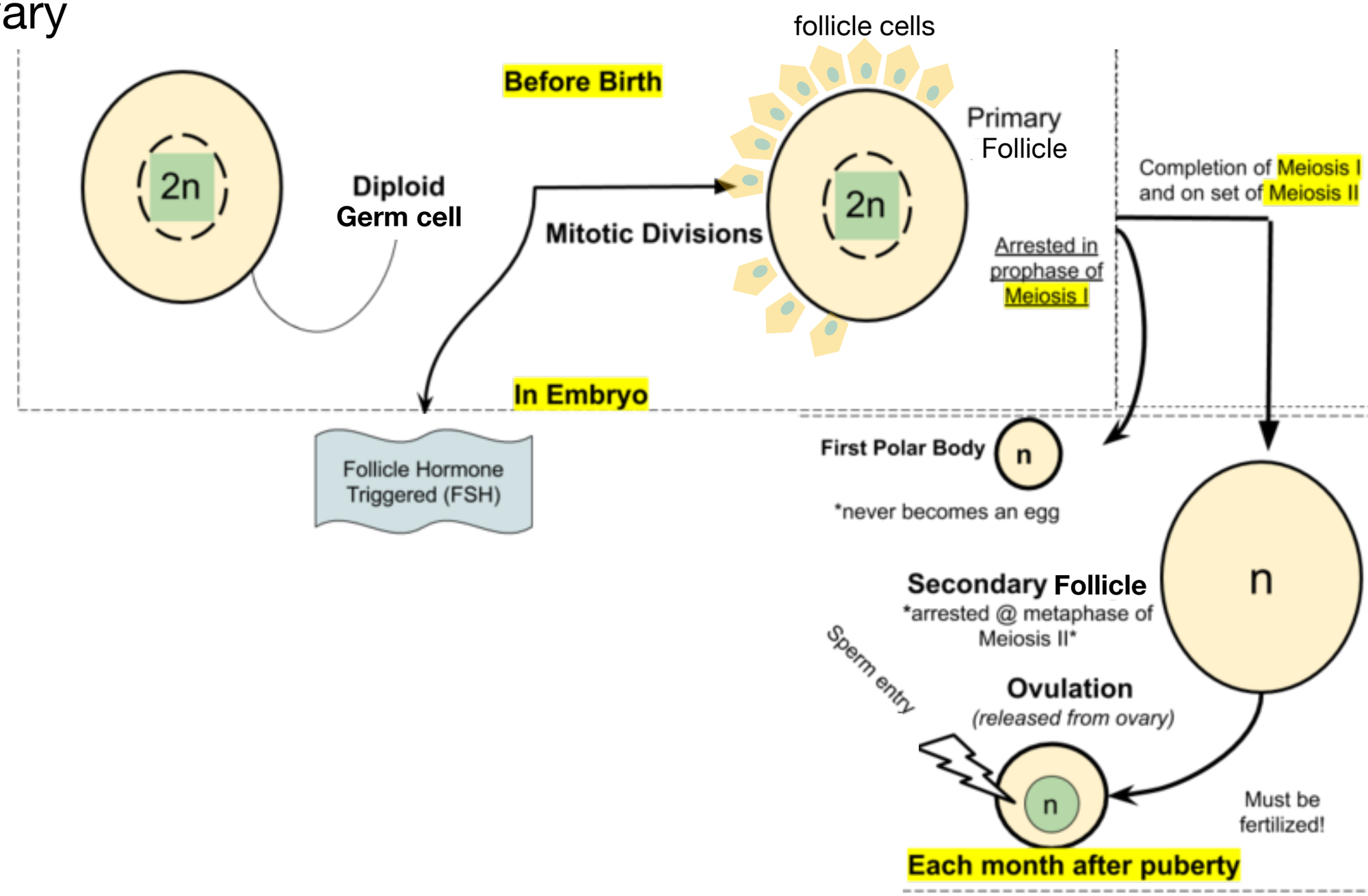
Sexual Reproduction

11.4



Oogenesis

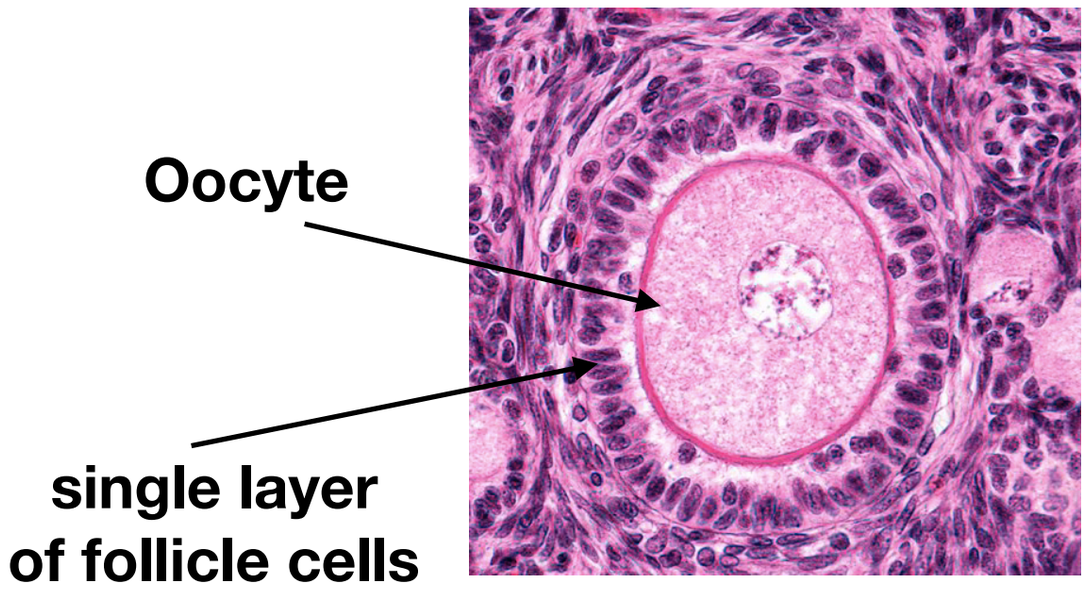
- The Production of Eggs via Mitosis then Meiosis
- In the ovary



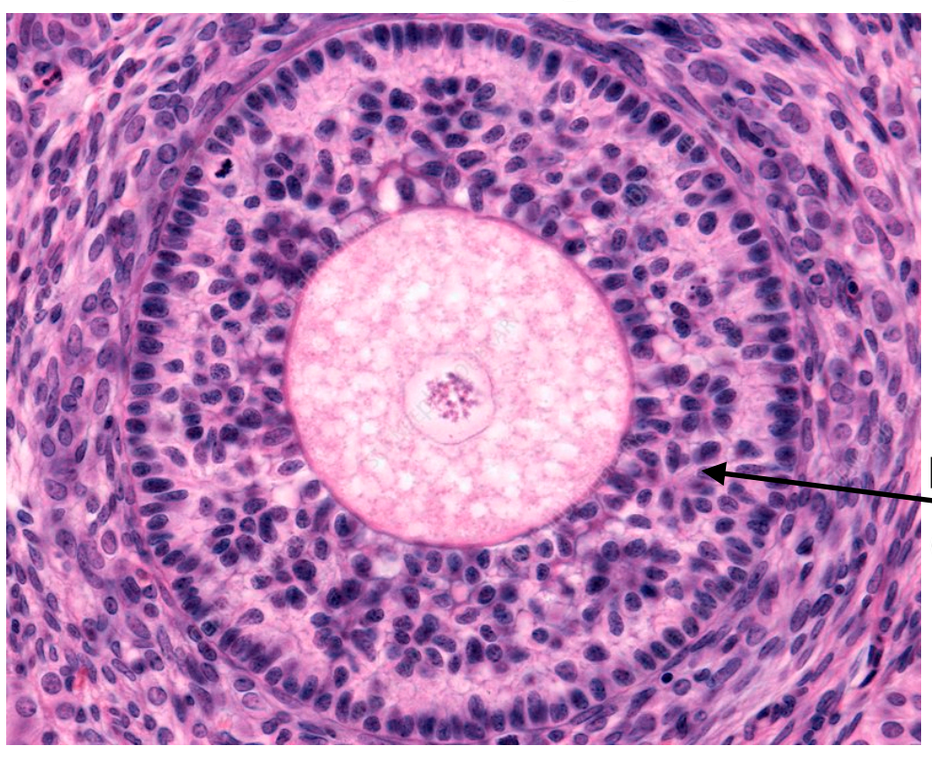
Oogenesis

- The Production of Eggs via Mitosis then Meiosis
- In the ovary of a female fetus
    - germ cell divides (mitosis)
    - grows follicle cell layer to form primary follicle (400,000)
    - begins meiosis by around 4-5 mth and is arrested in meiosis I

- At puberty FSH stimulates follicle maturation during menstrual cycle

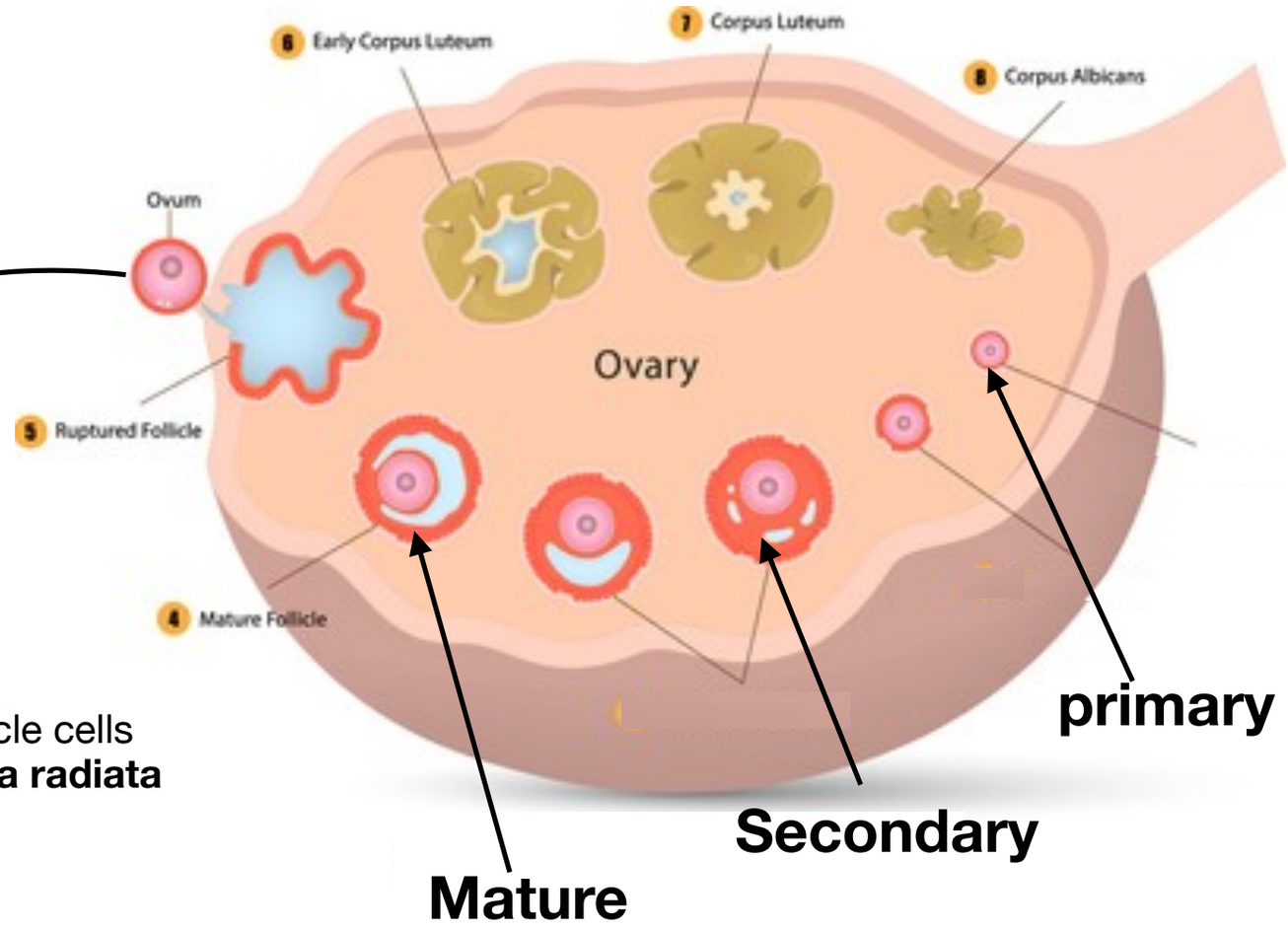


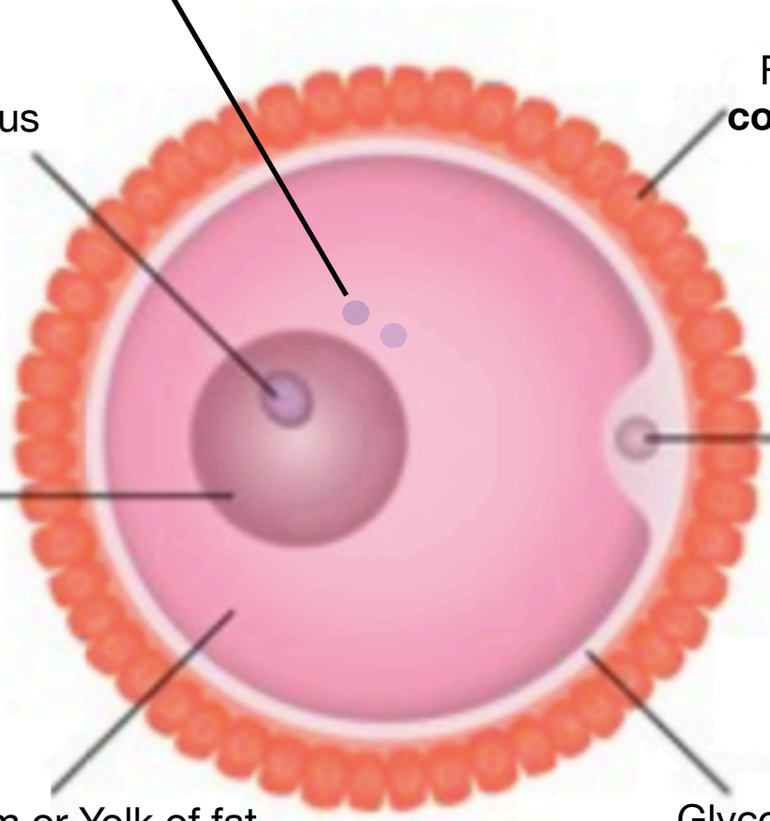
Primary follicle



Secondary follicle

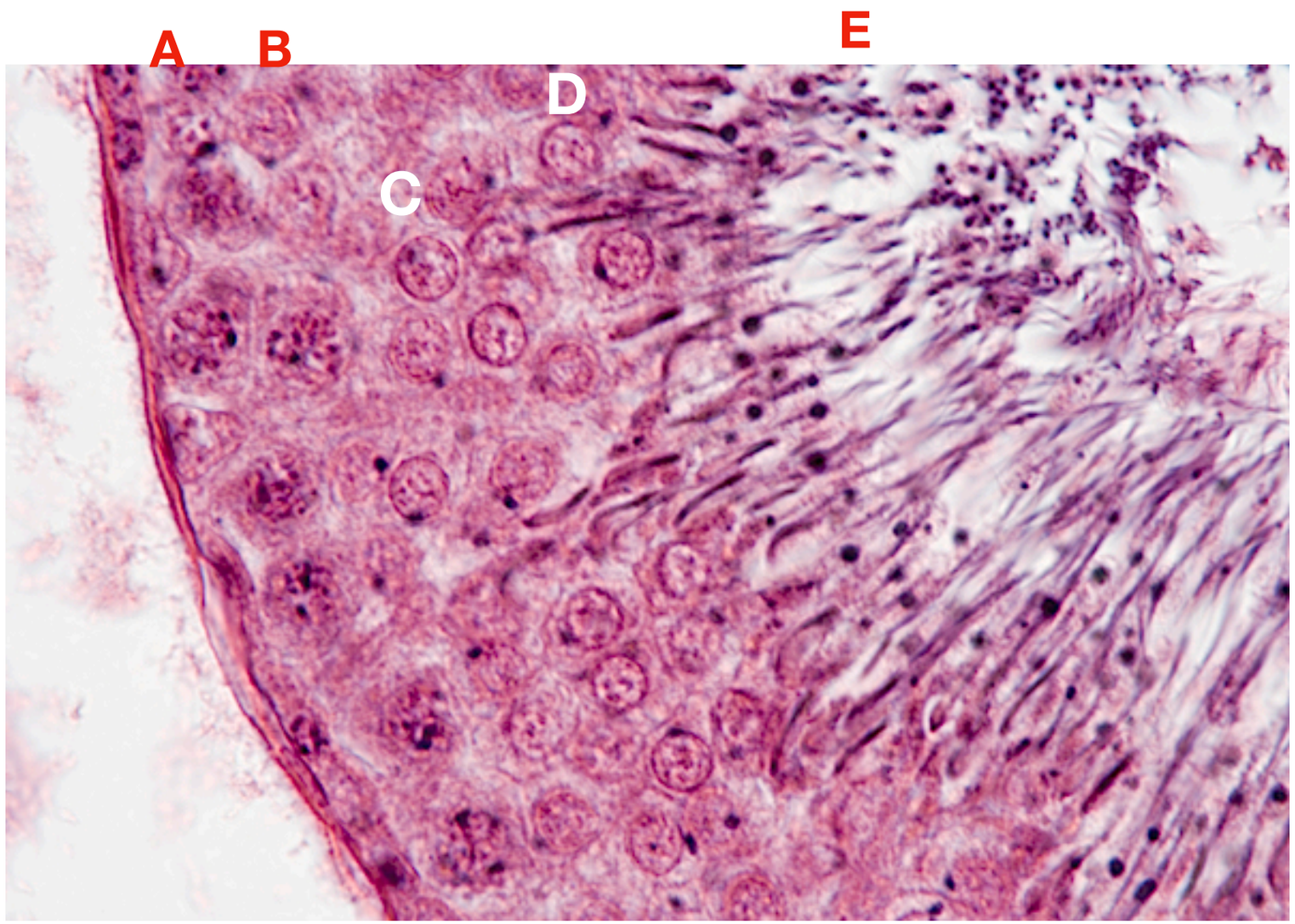
Ovum (egg)

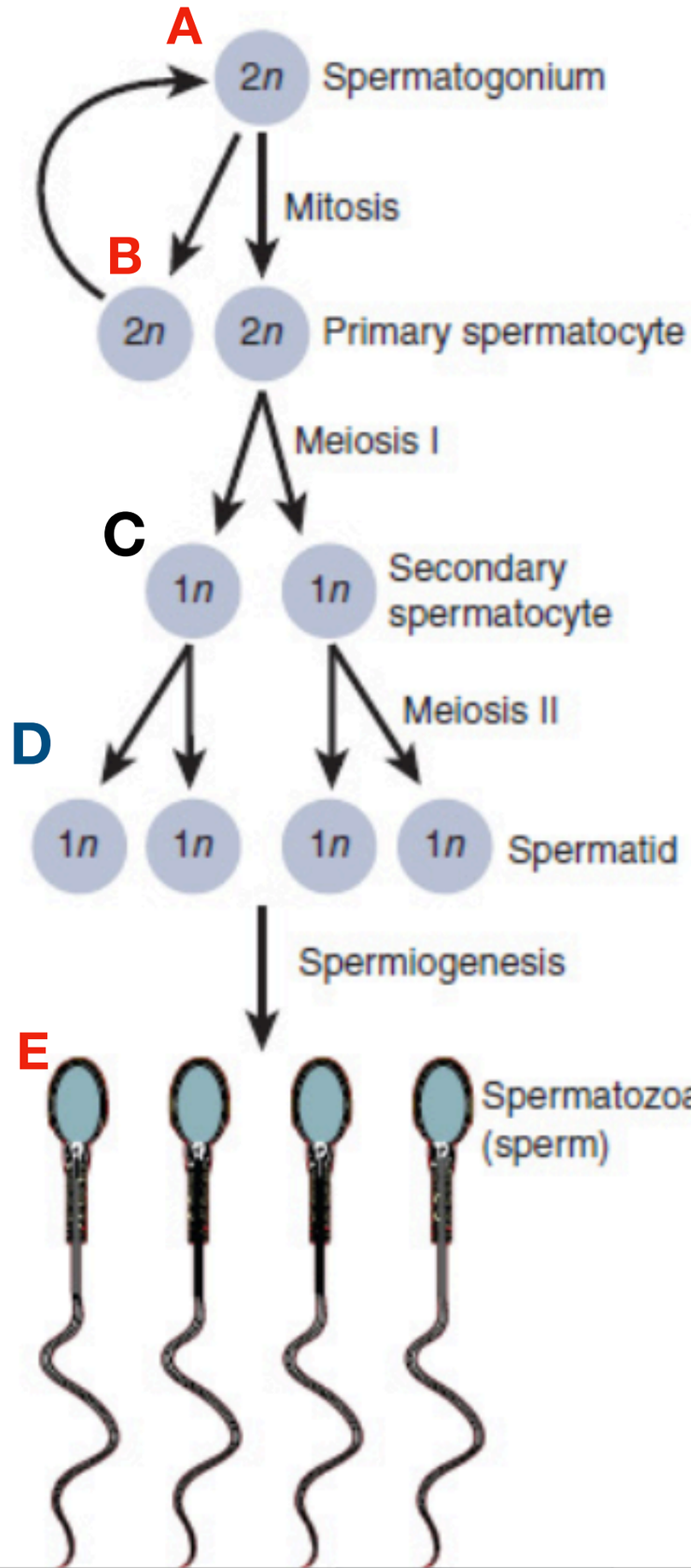

Early Corpus Luteum
Corpus Luteum
Corpus Albicans
Ovum
Ovary
Ruptured Follicle
Mature Follicle
primary
Secondary
Mature


2 centrioles
Nucleolus
Follicle cells
corona radiata
Haploid nucleus
First Polar cell
Cytoplasm or Yolk of fat droplets
Glycoprotein gel coat
Zona Pellucida

Spermatogenesis

- The production of sperm via Mitosis then Meiosis
- In the seminiferous tubules





Spermatogonium cells

Sertoli cells

Base membrane

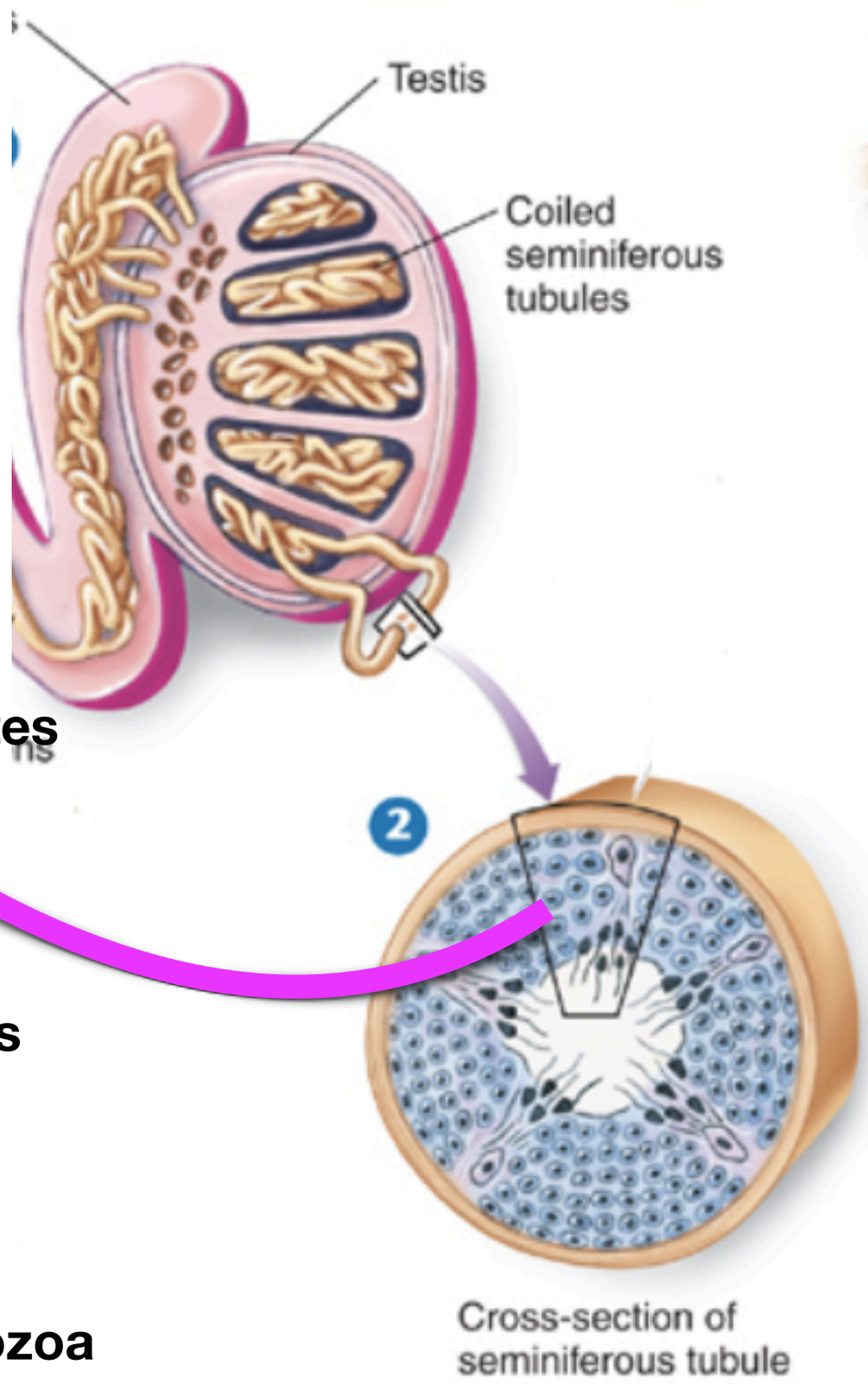
Primary spermatocytes

Secondary spermatocytes

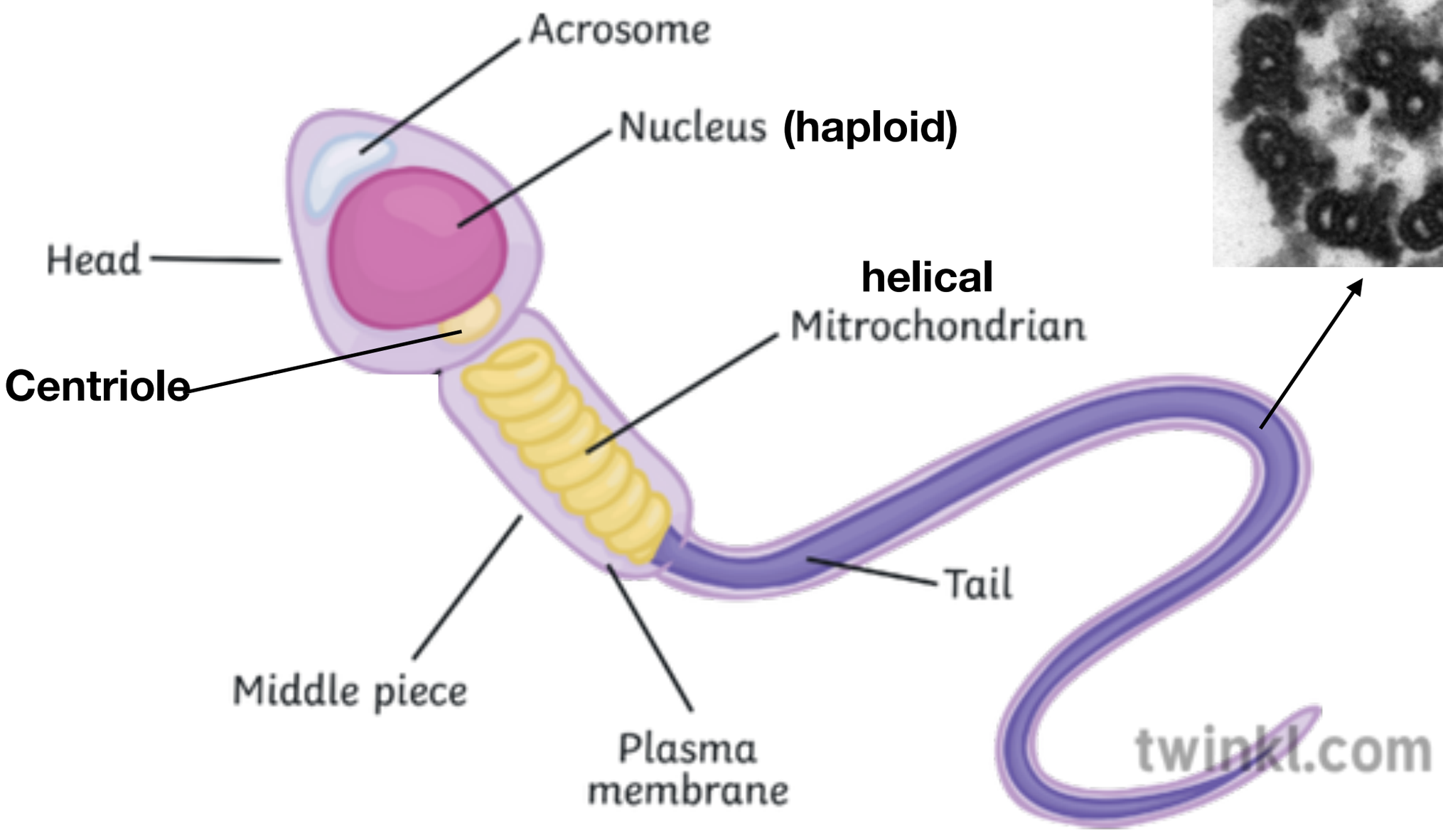
spermatids

spermatozoa

Lumen space



Spermatozoa



Try this

- Data based questions on page 503

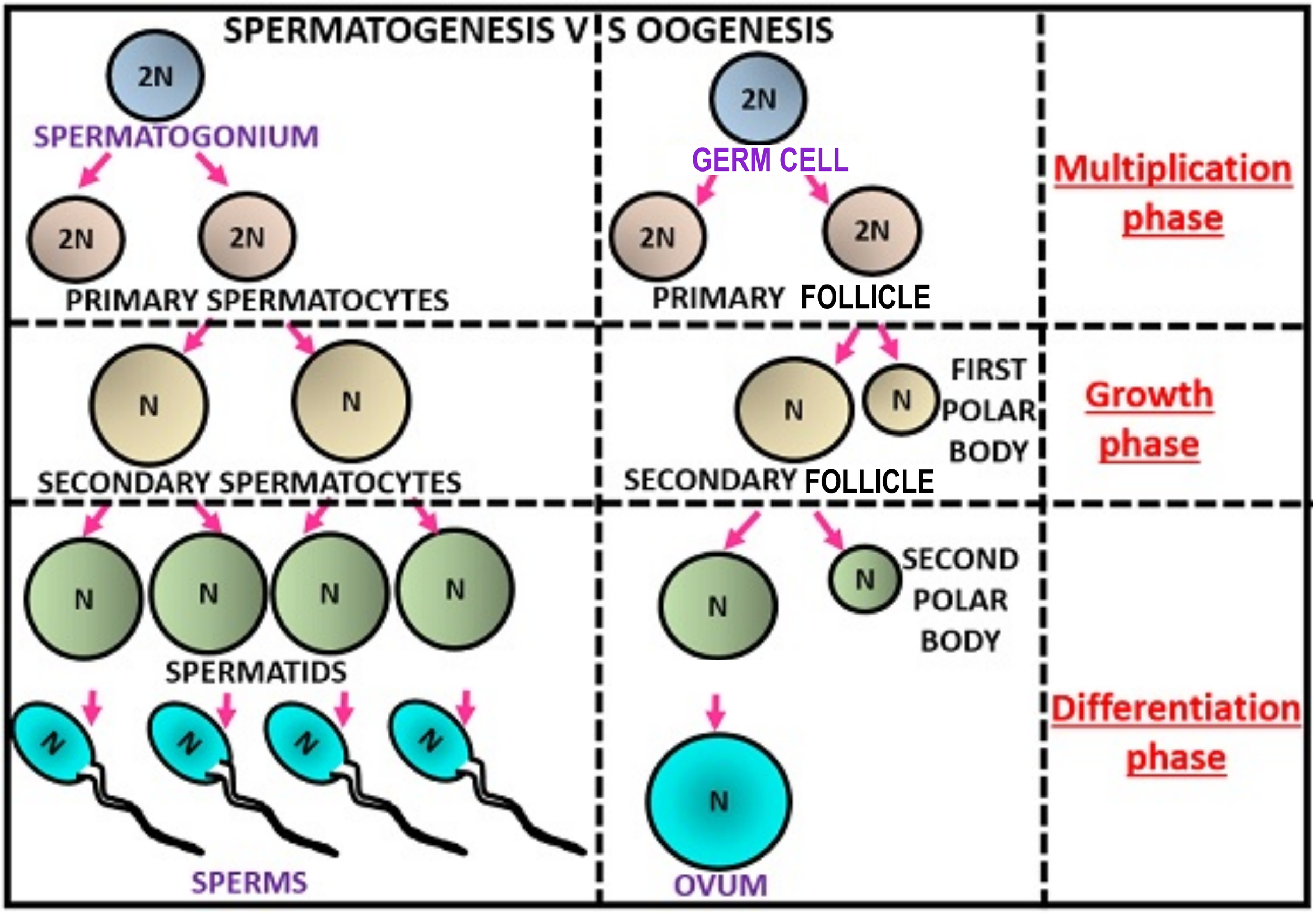
Oogenesis vs Spermatogenesis

Ovum

- One cell large from two meiotic division (degenerated polar body of the other)
- completes meiosis II after fertilization
- cell increase in size (and cytoplasm)
- organelles maintained

Sperm

- four spermatozoa results
- reduced size with divisions
- reduced cytoplasm
- reduced organelles


SPERMATOGENESIS VS OOGENESIS
2N
SPERMATOGONIUM
2N
2N
PRIMARY SPERMATOCYTES
2N
GERM CELL
2N
2N
PRIMARY FOLLICLE
Multiplication phase
N
N
SECONDARY SPERMATOCYTES
N
N
FIRST POLAR BODY
SECONDARY FOLLICLE
Growth phase
N
N
N
N
SPERMATIDS
N
N
SECOND POLAR BODY
Differentiation phase
SPERMS
N
OVUM