

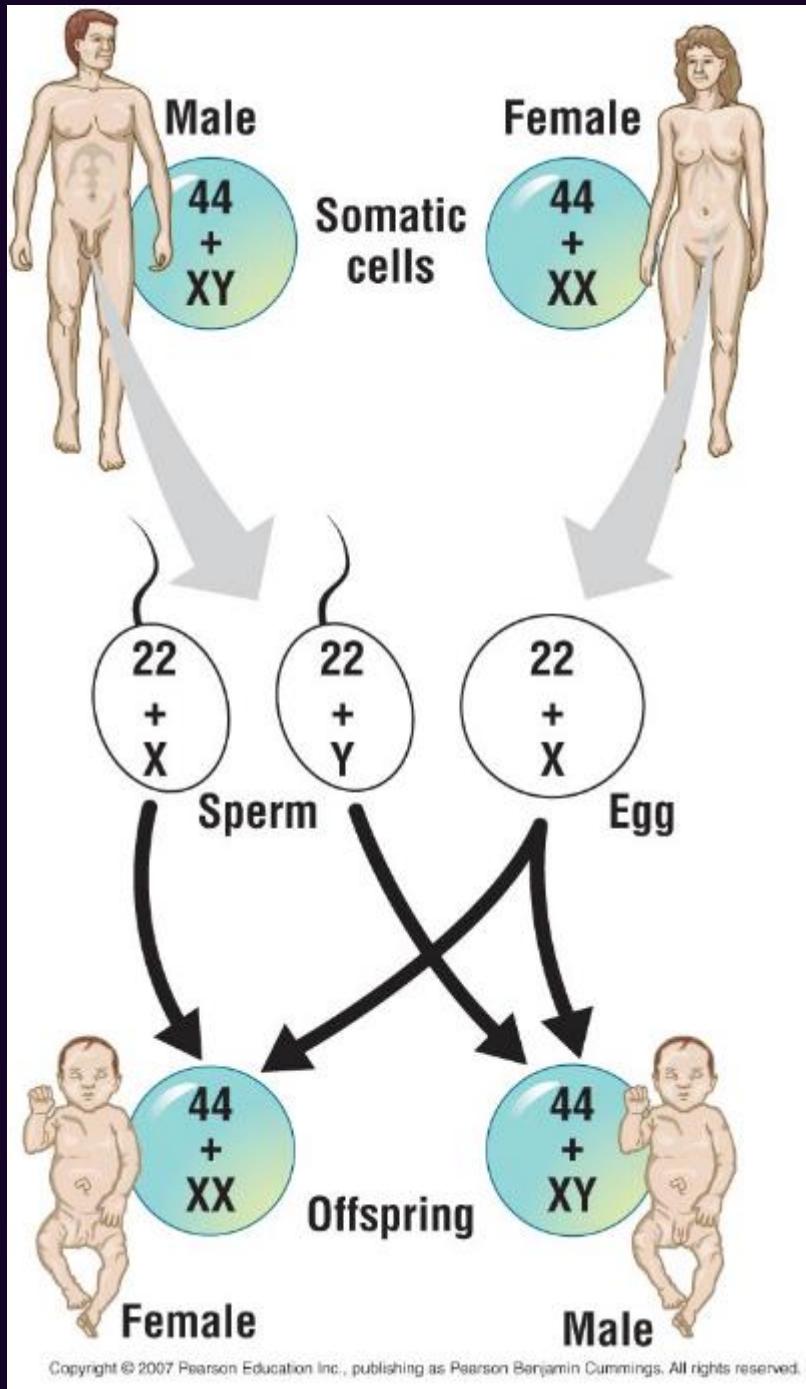
# **Human Reproduction, Sex and Sexuality**

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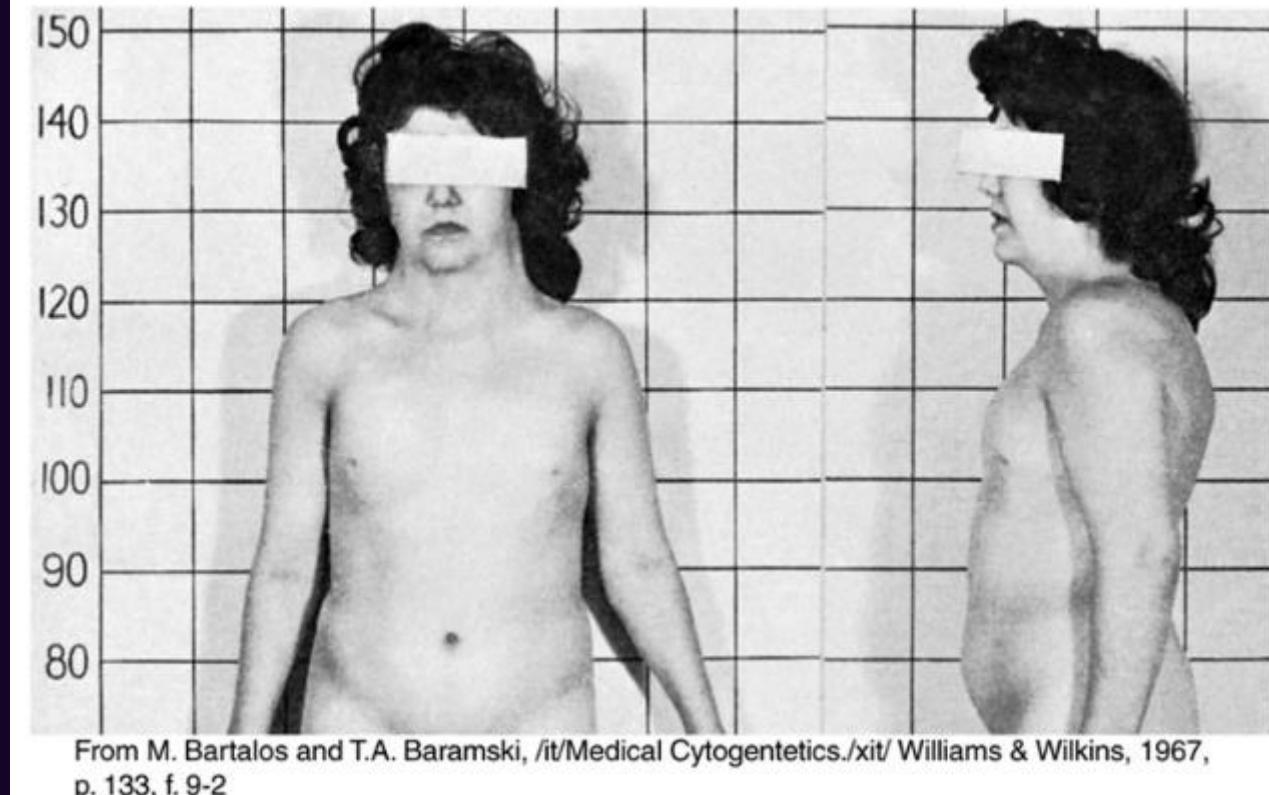
- **Chap. 18 of the textbook**
- **Chap. 27 of the reference book (Enger)**

# Learning Objectives

- Sexuality and Sexual health
  - Alternative sexual orientations (LGBT)
  - Sexual behaviours and habits
  - Science and sexual behaviours
- Male and female reproductive systems
- Hormonal controls in reproduction



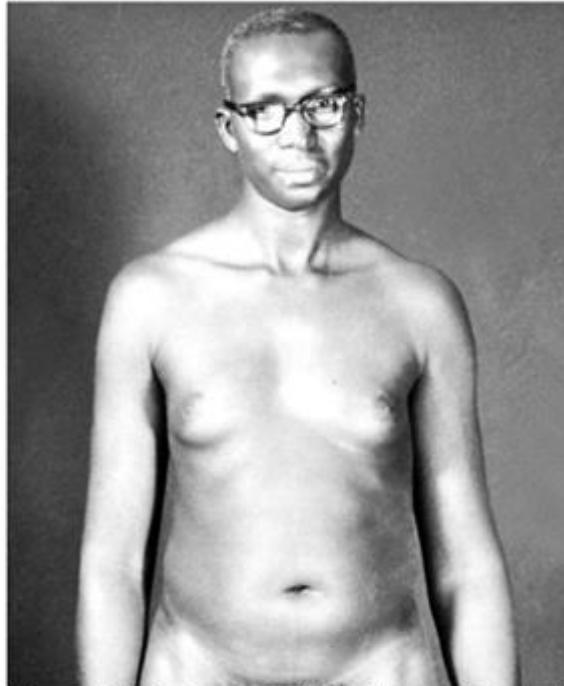
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From M. Bartalos and T.A. Baramski, /it/Medical Cytogenetics./xit/ Williams & Wilkins, 1967,  
p. 133, f. 9-2

# Turner syndrome (XO)

Abnormally short; failure to complete sexual maturity; sterility  
Thickened neck; hearing impairment; cardiovascular problems



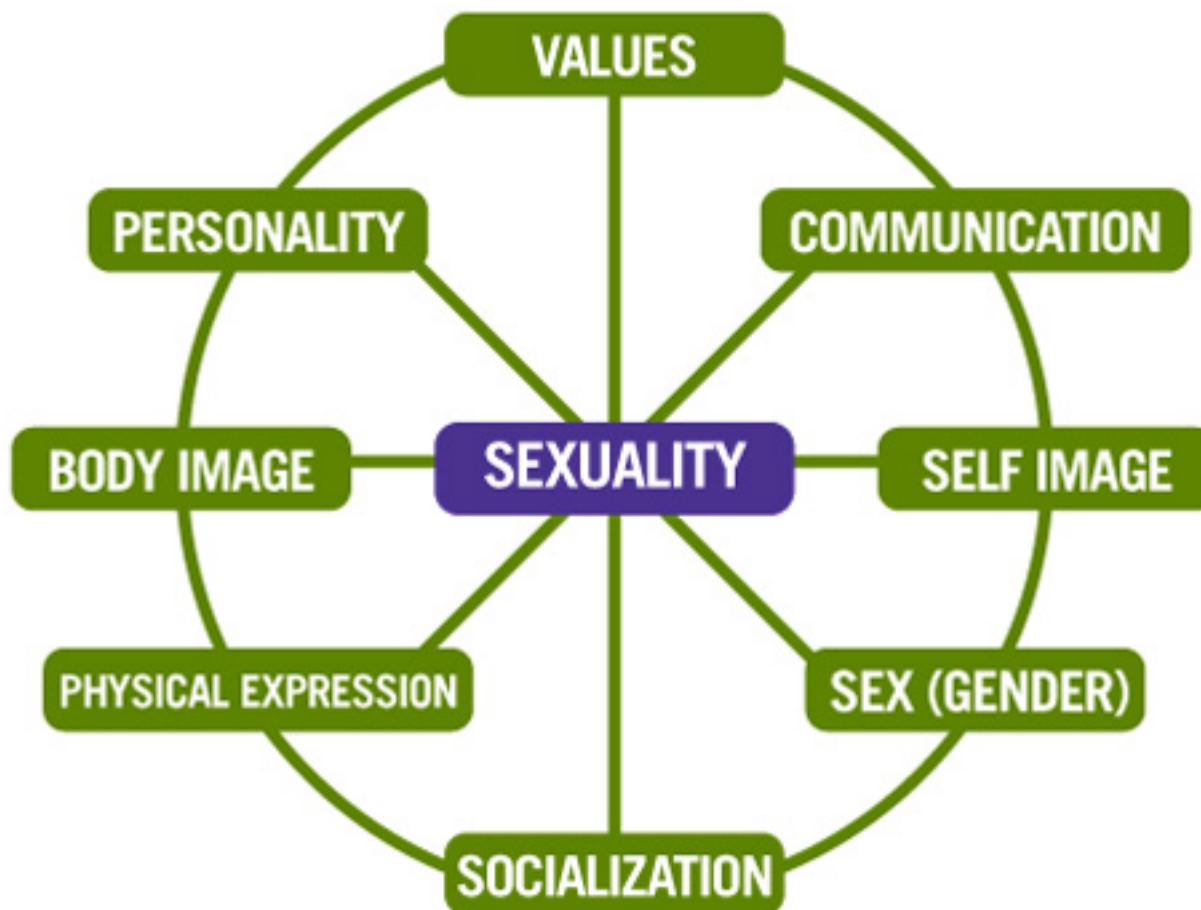
Courtesy of Dr. Kenneth L. Becker from *Fertility and Sterility*, 23:5668-78,  
Williams & Wilkins, 1972

# Klinefelter syndrome (XXY)

- Sterility; breast enlargement
- Incomplete masculine development
- Lack of facial hair
- Minor learning problems

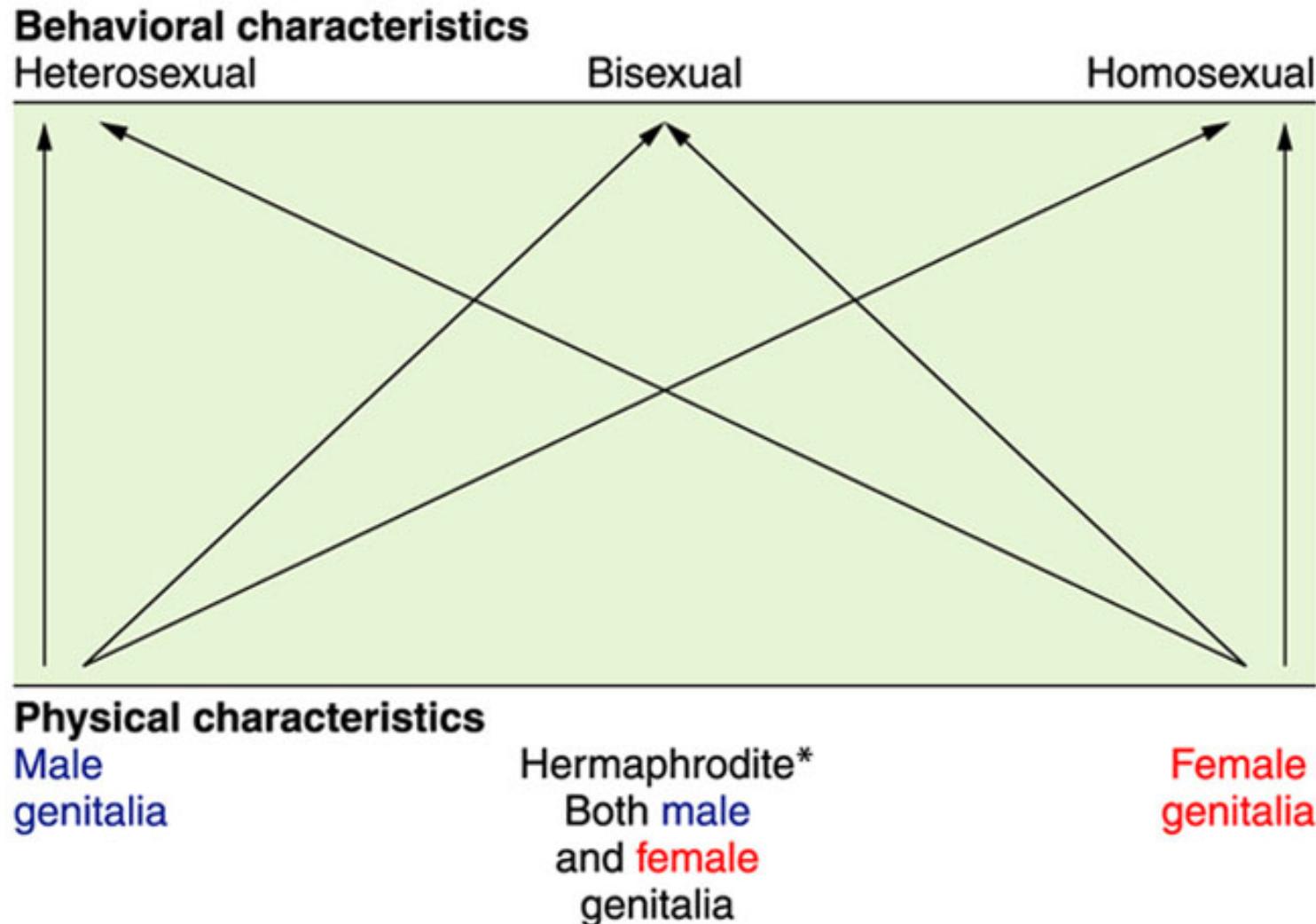
# SEXUALITY WHEEL

The Sexuality Wheel depicts the comprehensiveness of the concept of "sexuality." These factors influence our unique personal manifestation of sexuality. Sexuality is more than intercourse.



# Spectrum of Human Sexuality

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# Youth & Campus Survey 2011

A Study examining LGBT issues in Indian  
College & University Campuses

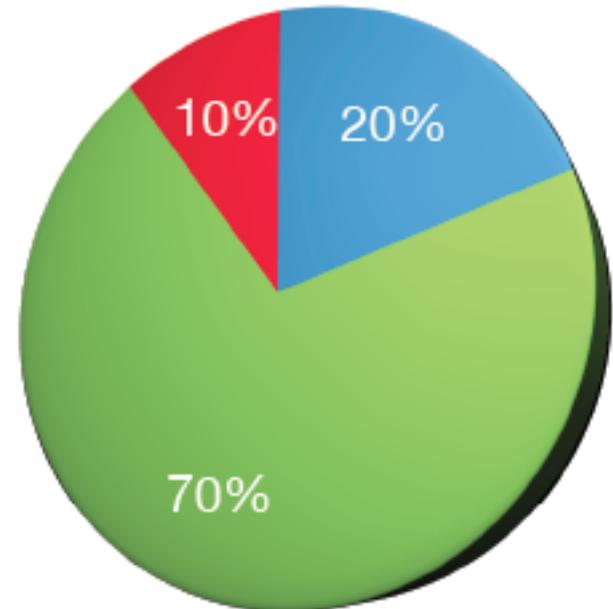


Mission for Indian Gay & Lesbian Empowerment

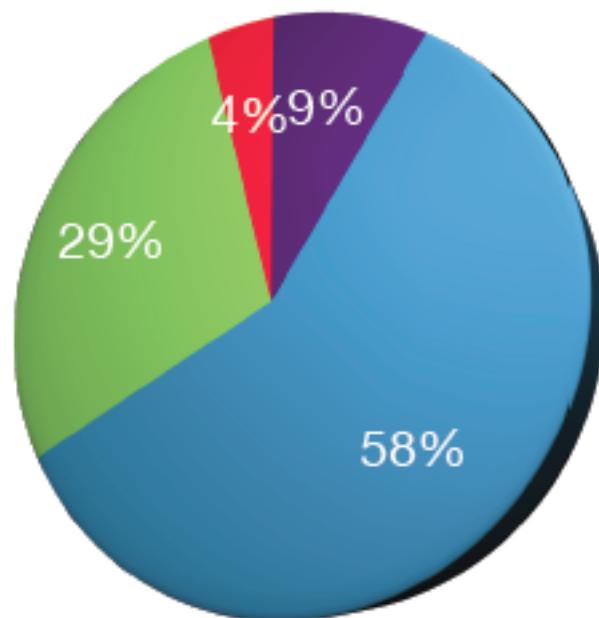
- 272 respondents from about 25 college campuses across the country.
- 78% of the respondents were LGBT

# “LGBT youth are prone to unsafe environments”

Straight youth who've faced harassment in the campus:



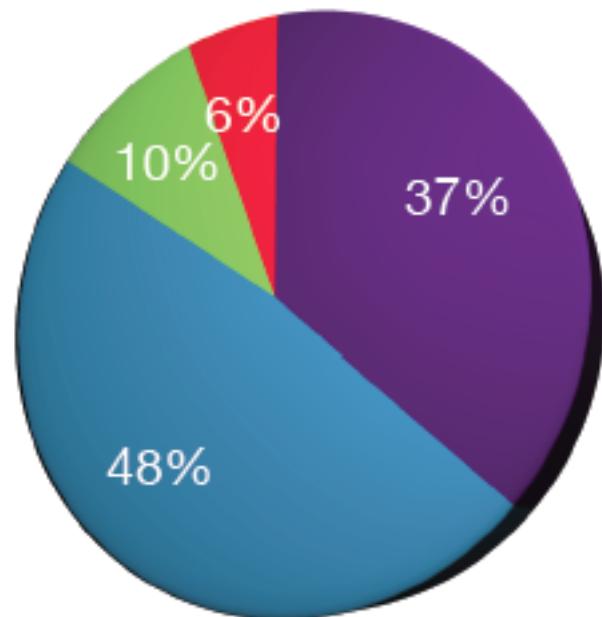
LGBT youth who face harassment in the campus:



# Learning to be sensitive

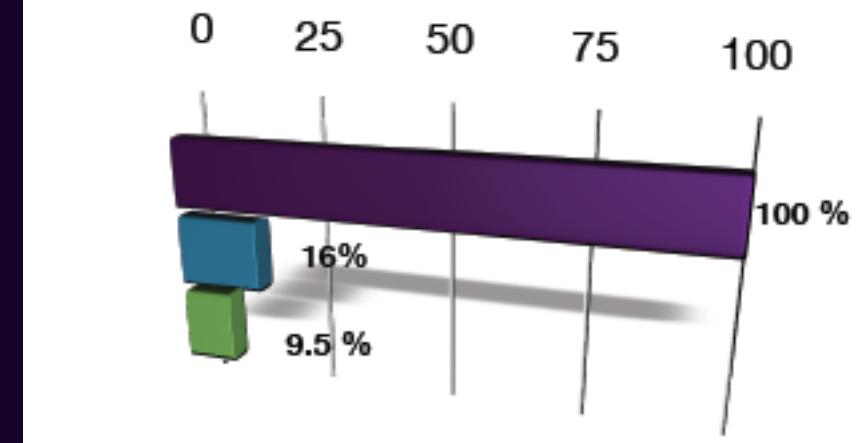
Have you heard homophobic comments/jokes/anti-gay rhetoric in your college campus?

● Often  
● Never  
● Sometimes  
● No Response



Students who've experienced anti-gay comments, say that they came from:

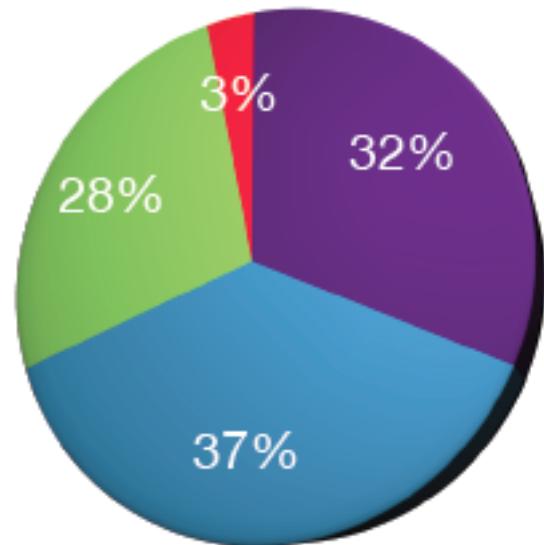
■ Students ■ Professors  
■ College Authorities



# Who do LGBT people open up to?

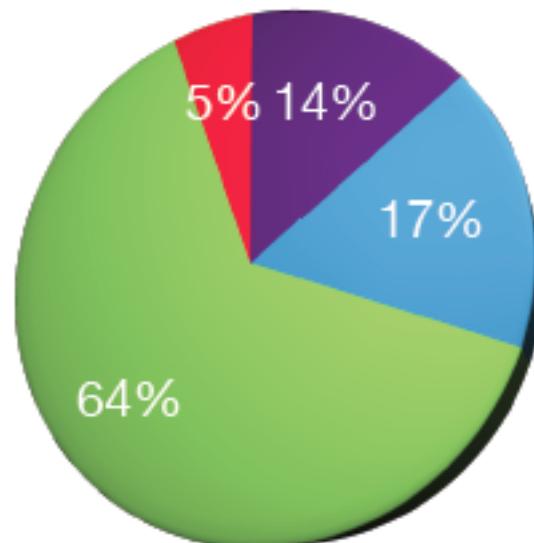
Are you out to your college mates?

- Yes
- No
- Partially
- No Response



Are you out to your professors/lecturers?

- Yes
- No
- Partially
- No Response



# Effects of pornography use

- Pornography-induced erectile dysfunction (PiED)
- Close association with sexual crimes
- It can be highly addictive – brain undergoes changes
- Some counselors believe porn is a gateway for drug use
- It has other societal implications too

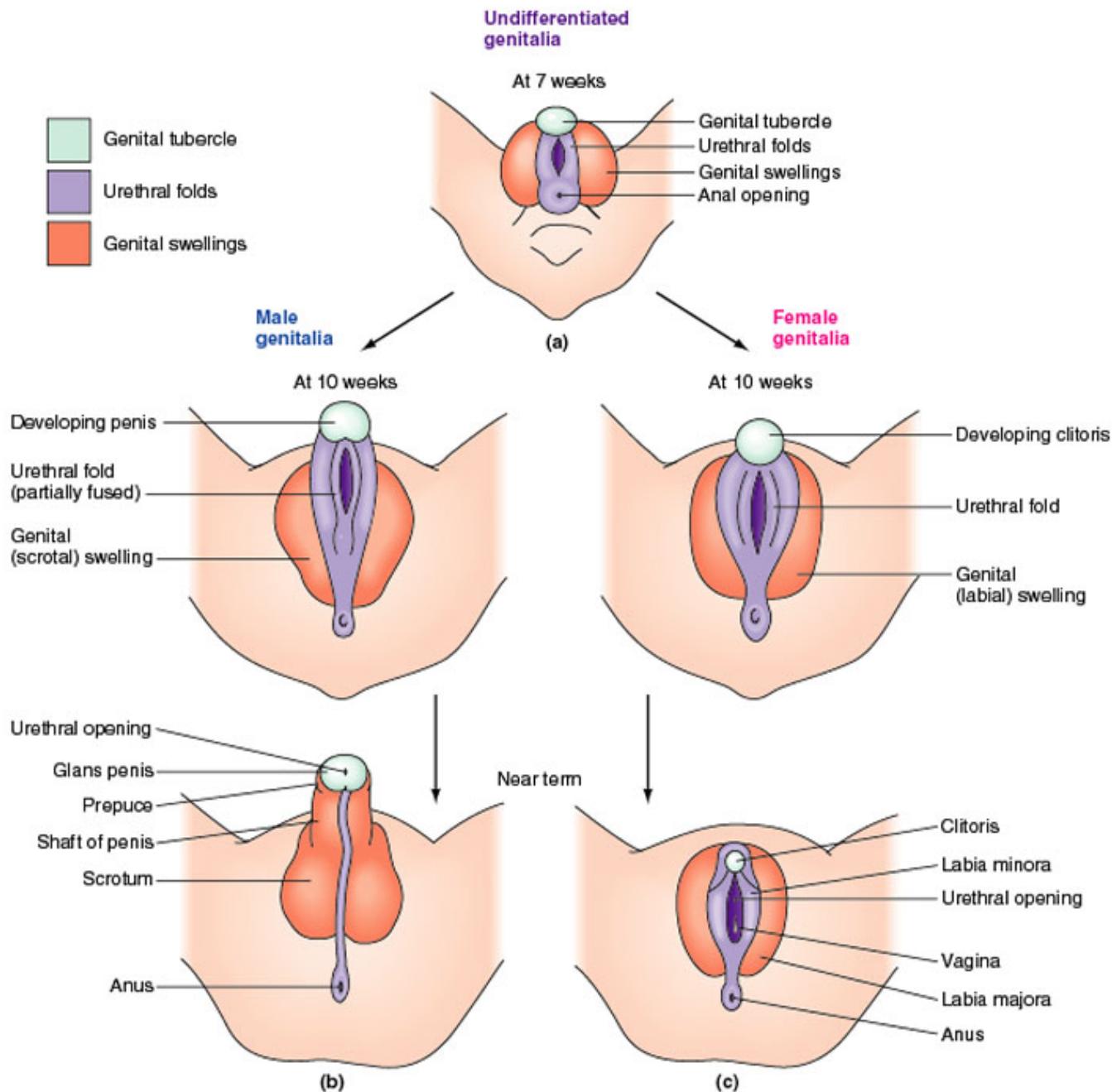
## [National](#) » [Tamil Nadu](#)

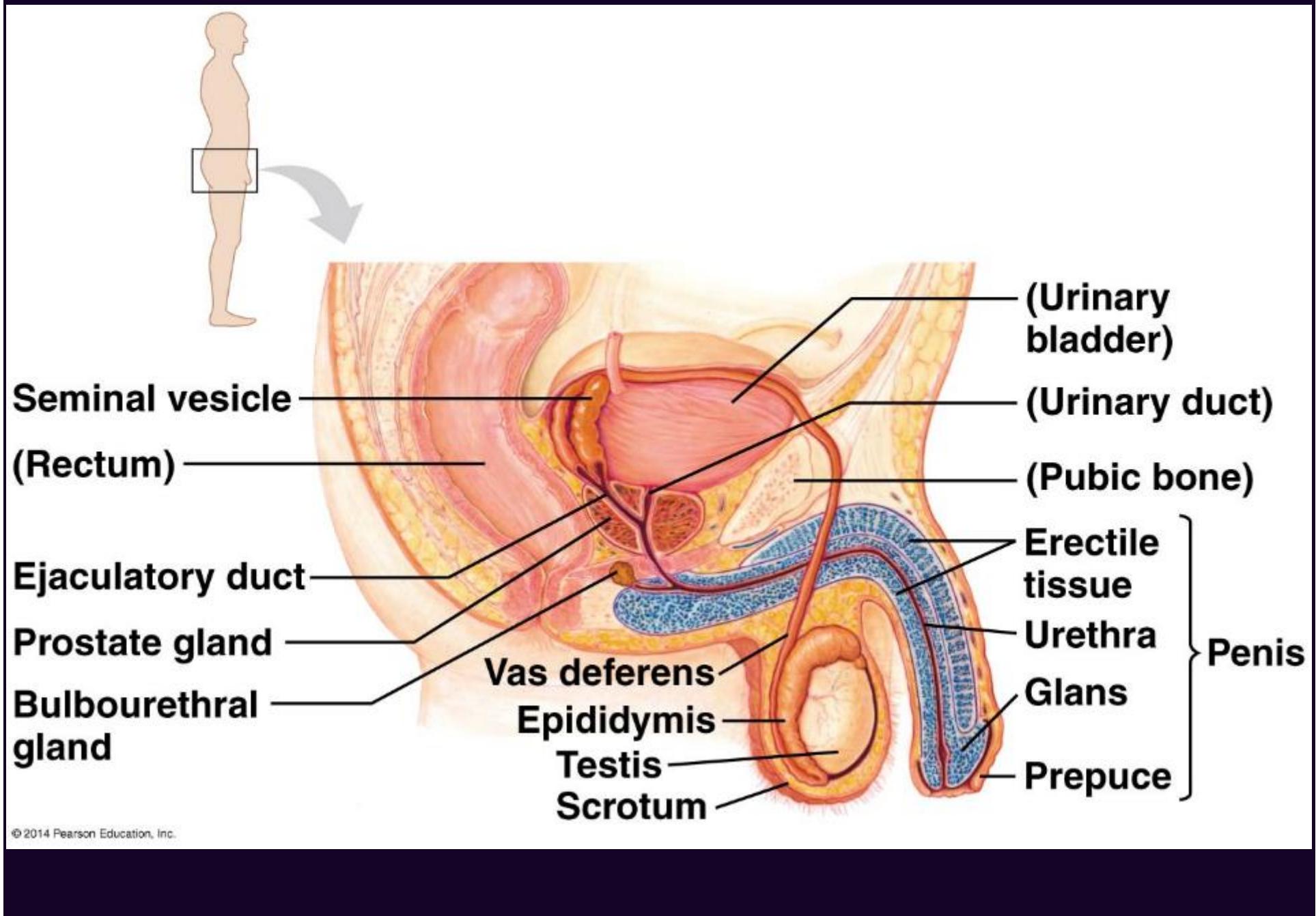
Published: April 16, 2013 02:45 IST | Updated: April 16, 2013 02:46 IST

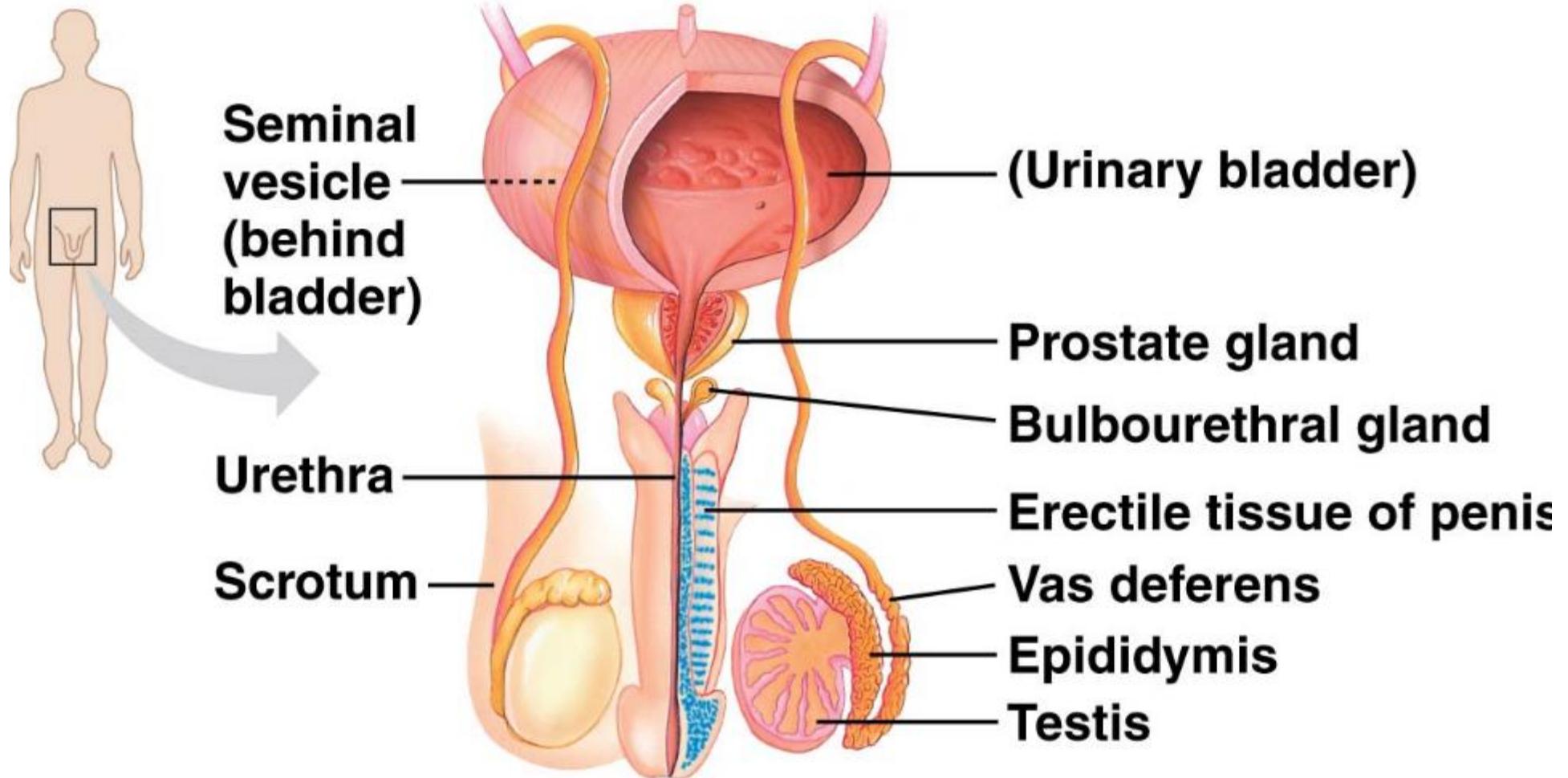
### **Internet porn wrecking conjugal ties**

“In more than three years as a family court judge, I have seen a number of cases of porn-induced sexual dysfunction in men that resulted in unusual and unbearable torture, both physical and mental, to the wives.”

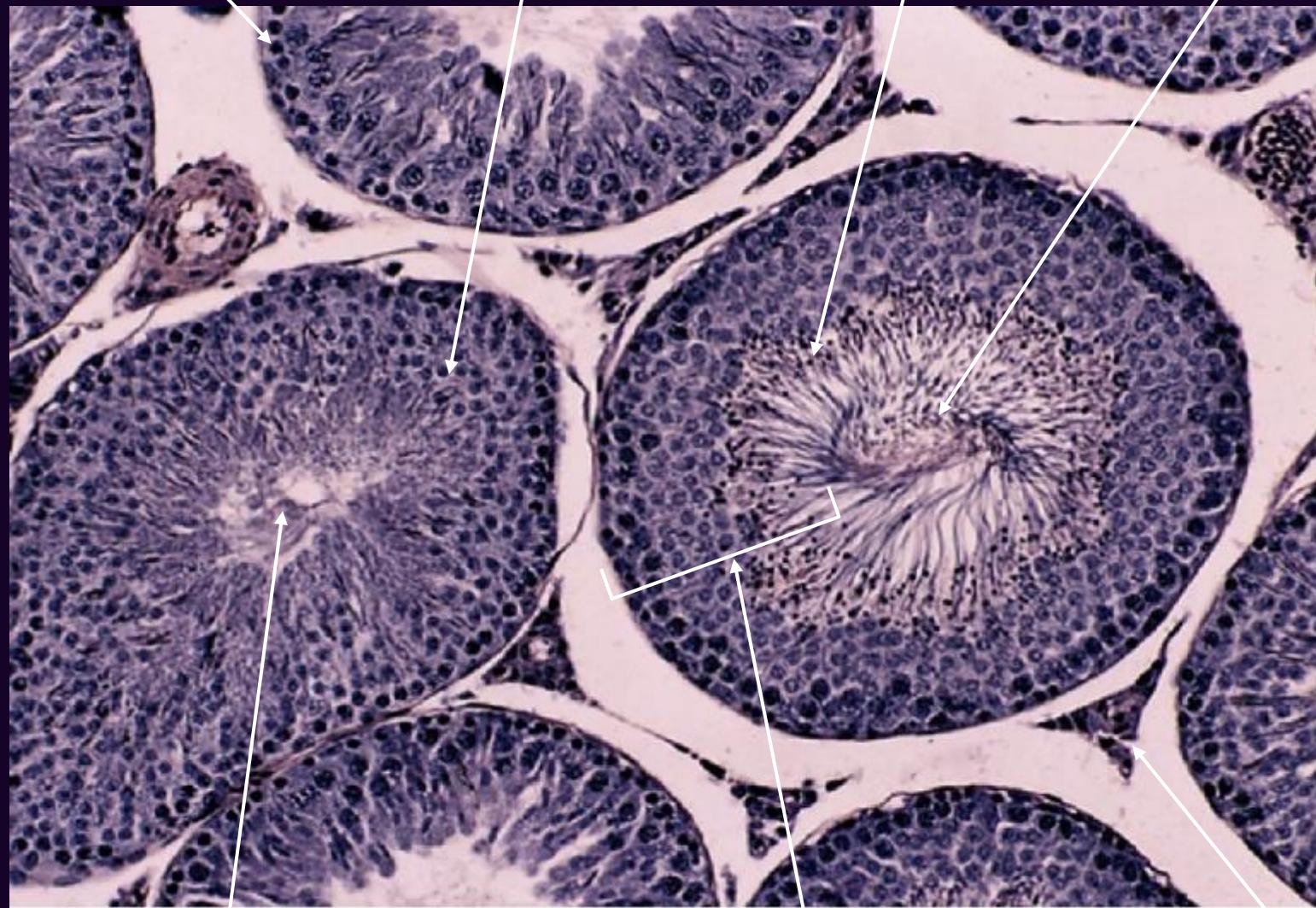
- Mr. T.C.S. Raja Chockalingam  
Judge, Family Court, Chennai







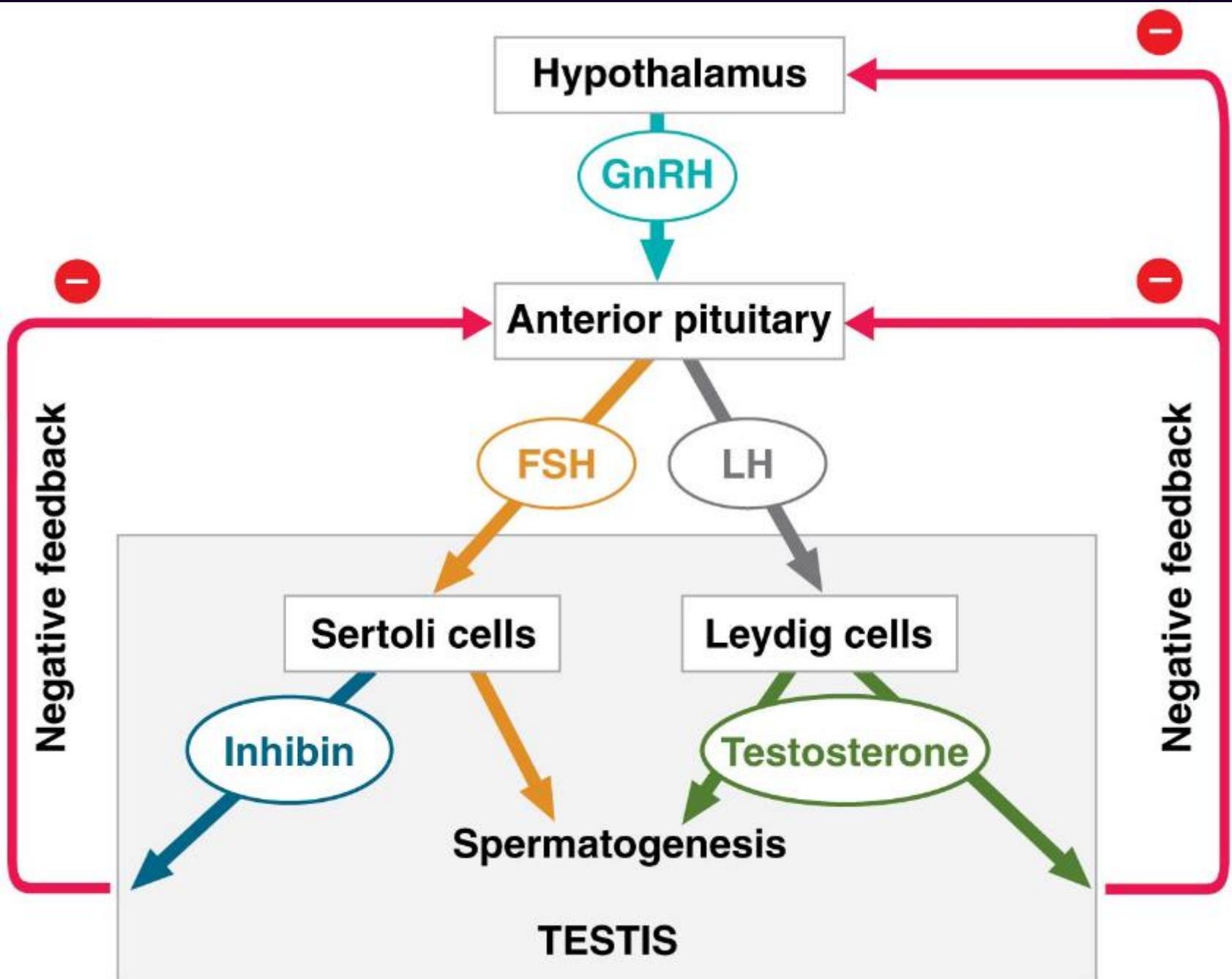
Spermatogonium      Cytoplasm of Sertoli cell      Spermatozoon      Tails of spermatozoa

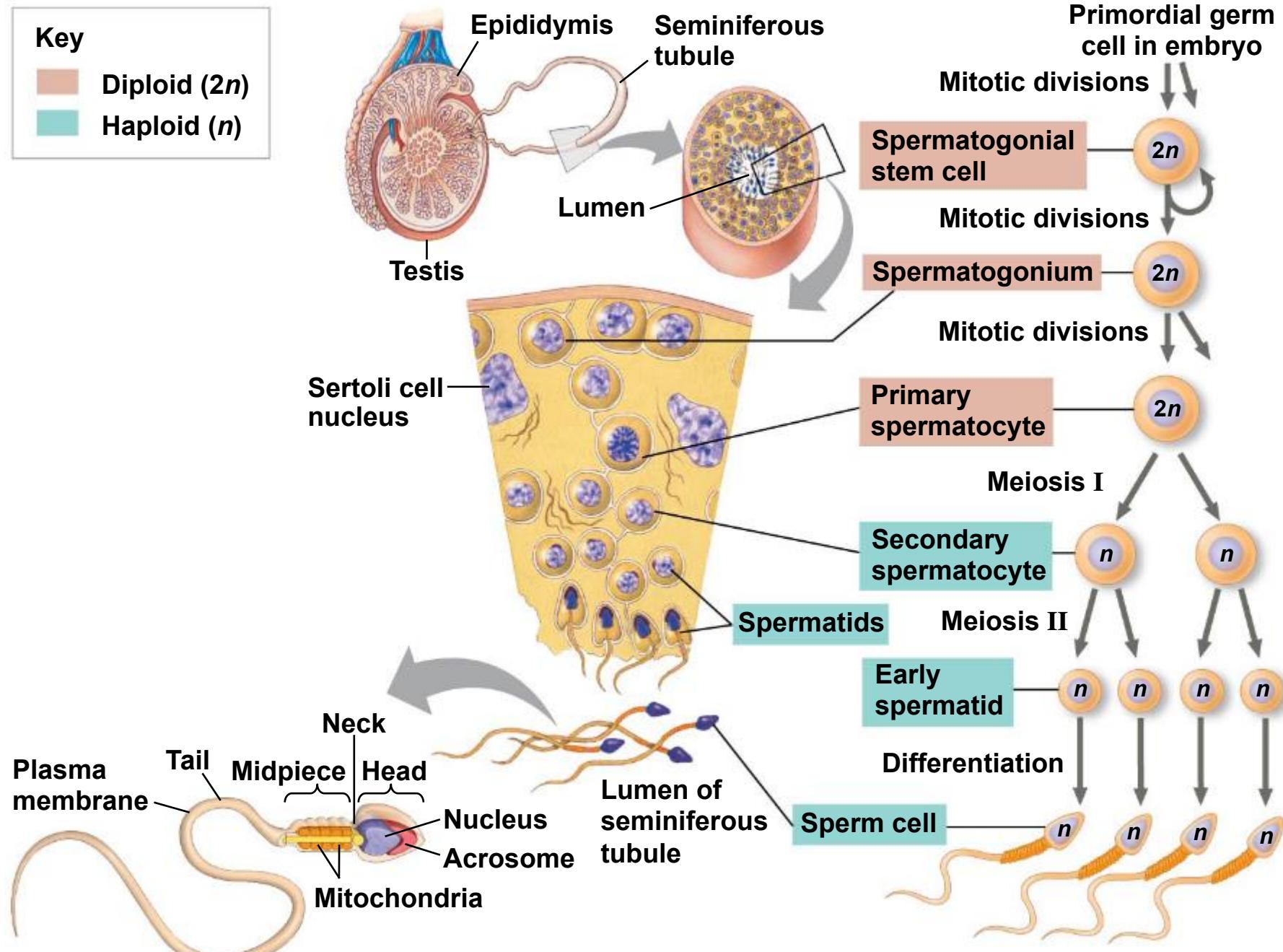


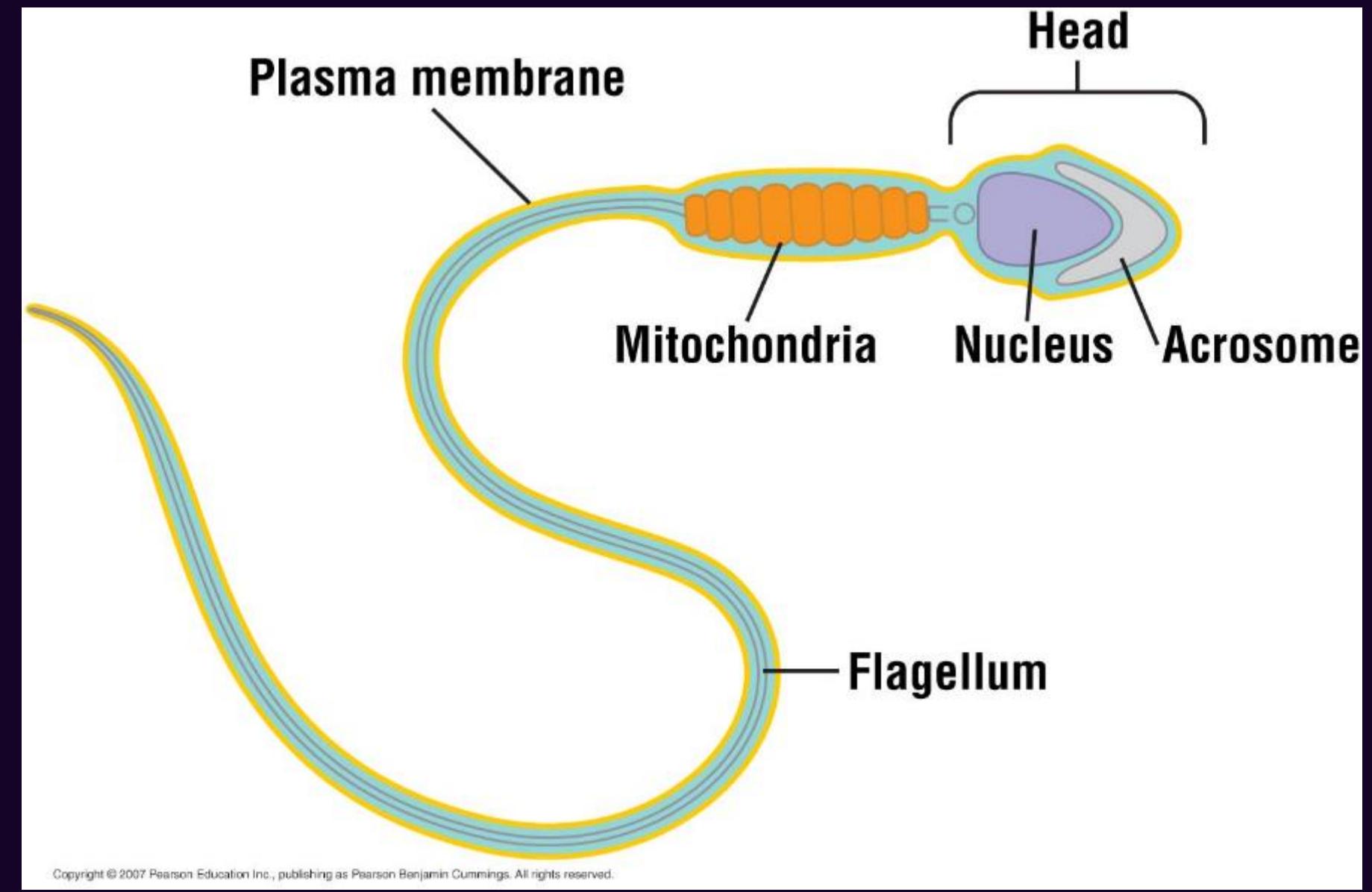
Lumen of  
seminiferous tubule

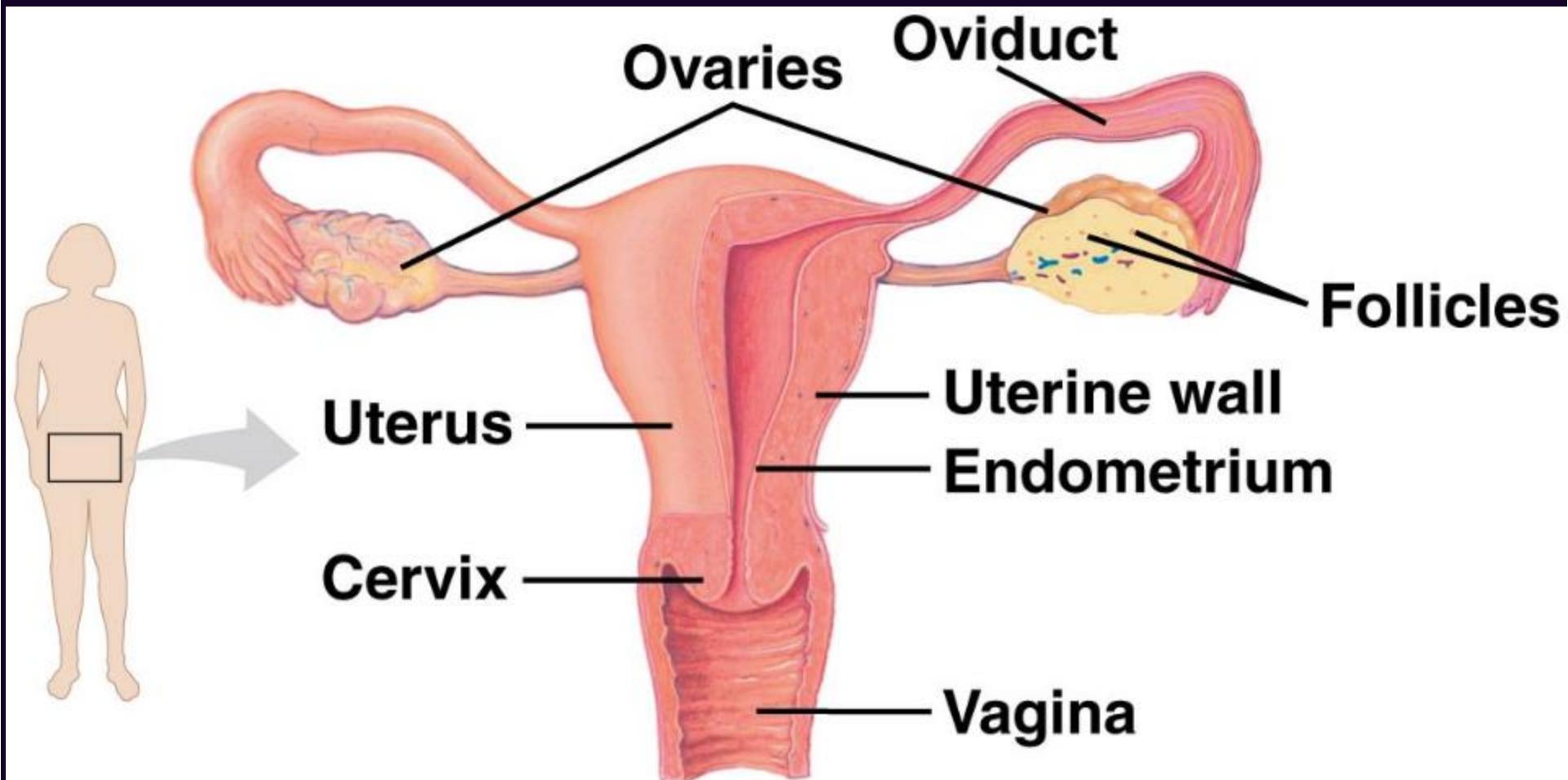
Varying stages of  
sperm development

Leydig cell









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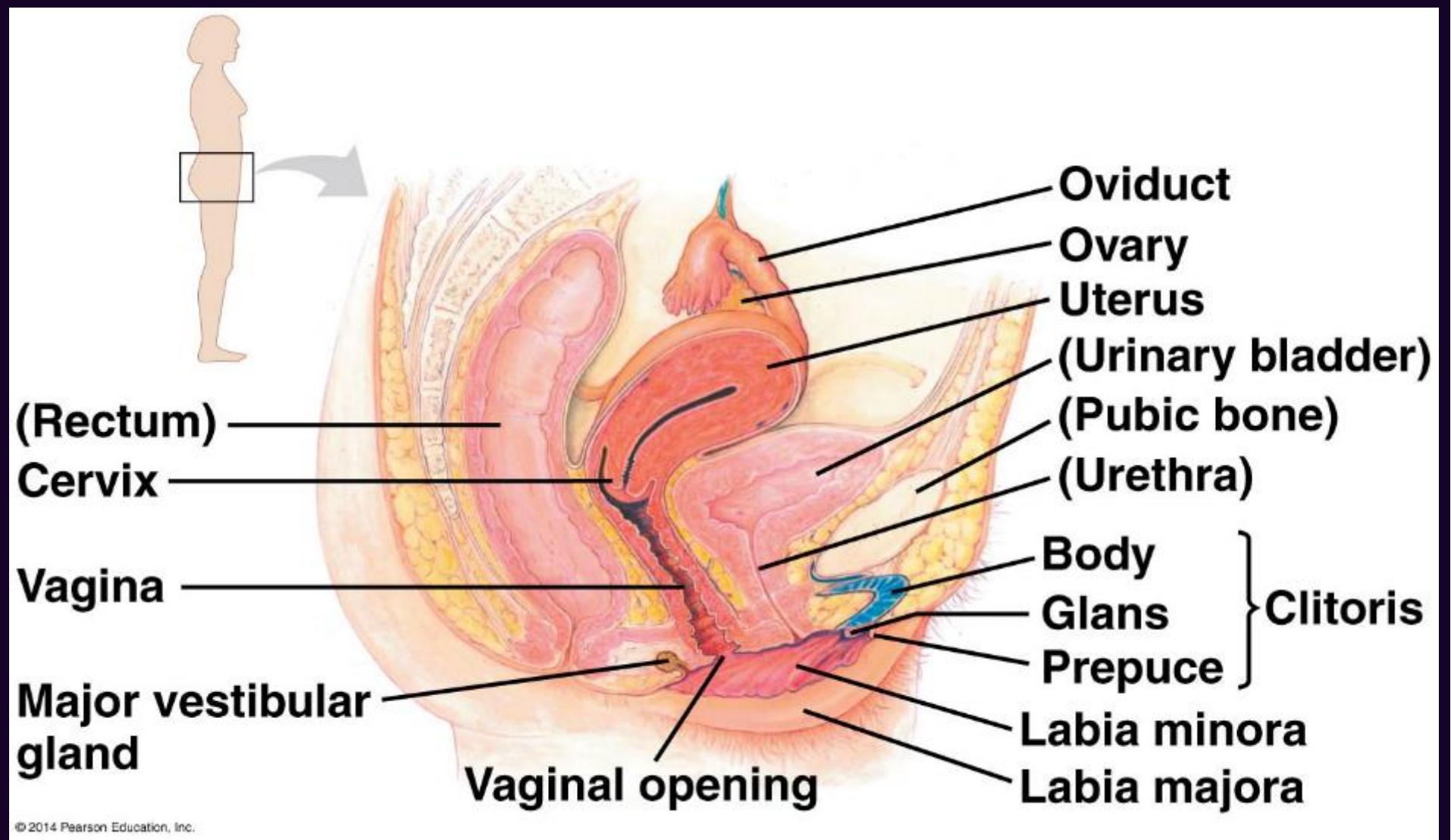
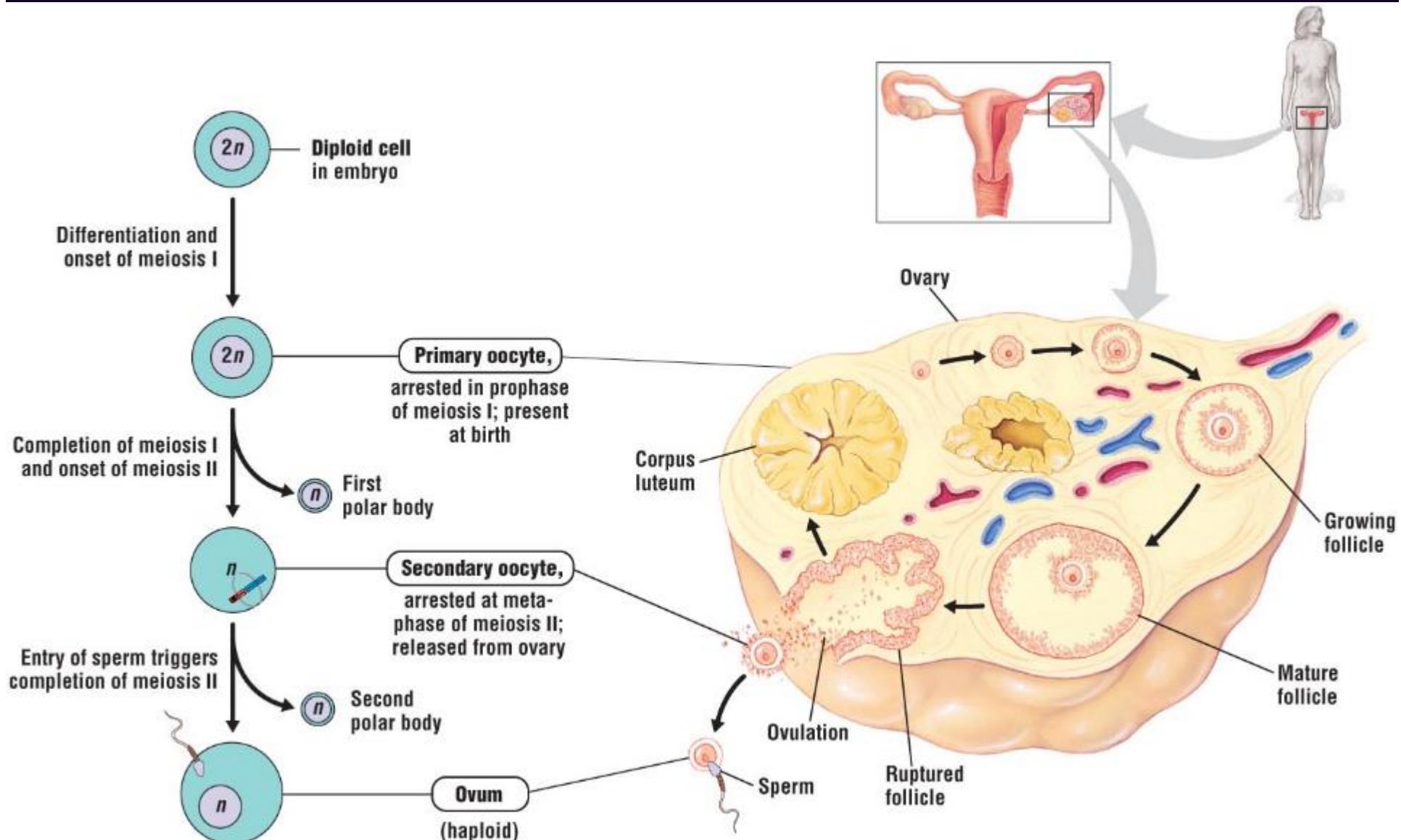
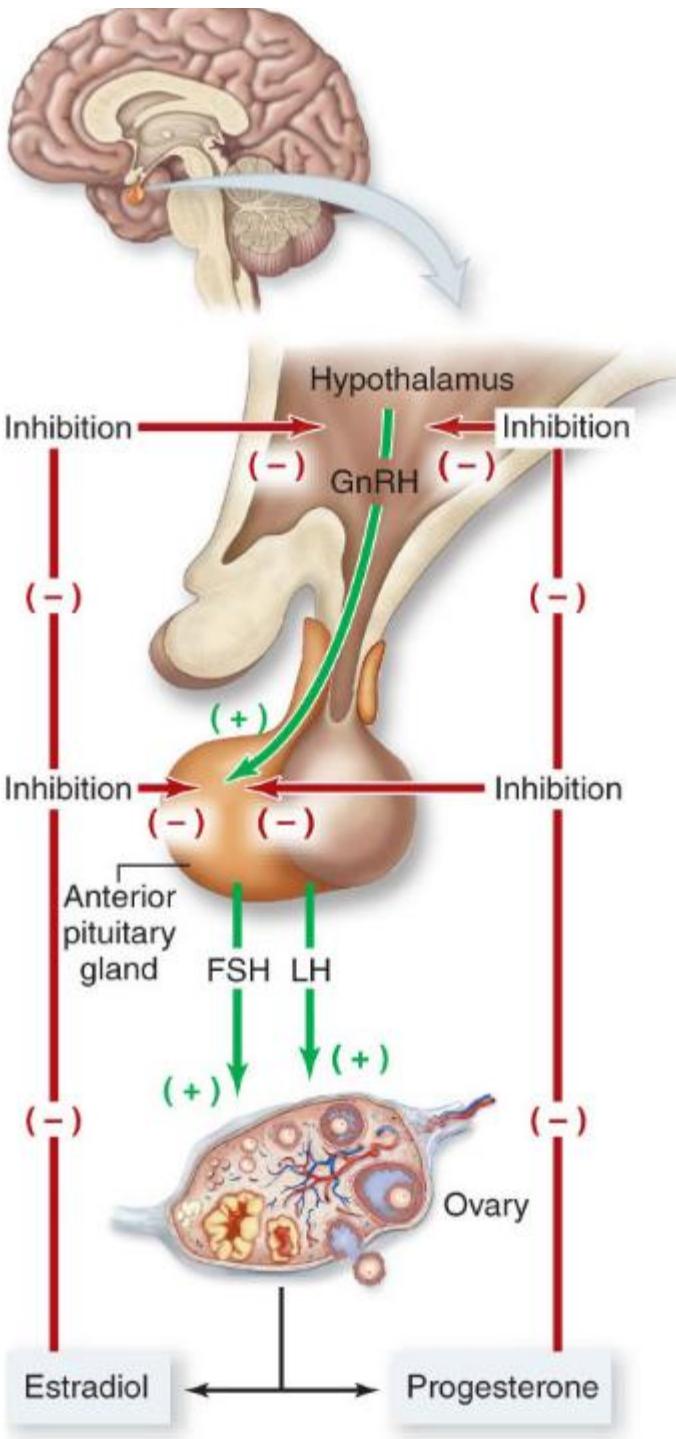


Figure 26.7\_3



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# Spermato- vs. Oogenesis

- Female - limited gamete potential (puberty to menopause)
- Maturation time
  - Sperm: 2 months
  - Ovum: 11 to 50 years
- Number of gametes per cell
- High degree of differentiation of each gamete
- Necessity of sperm for completing oogenesis

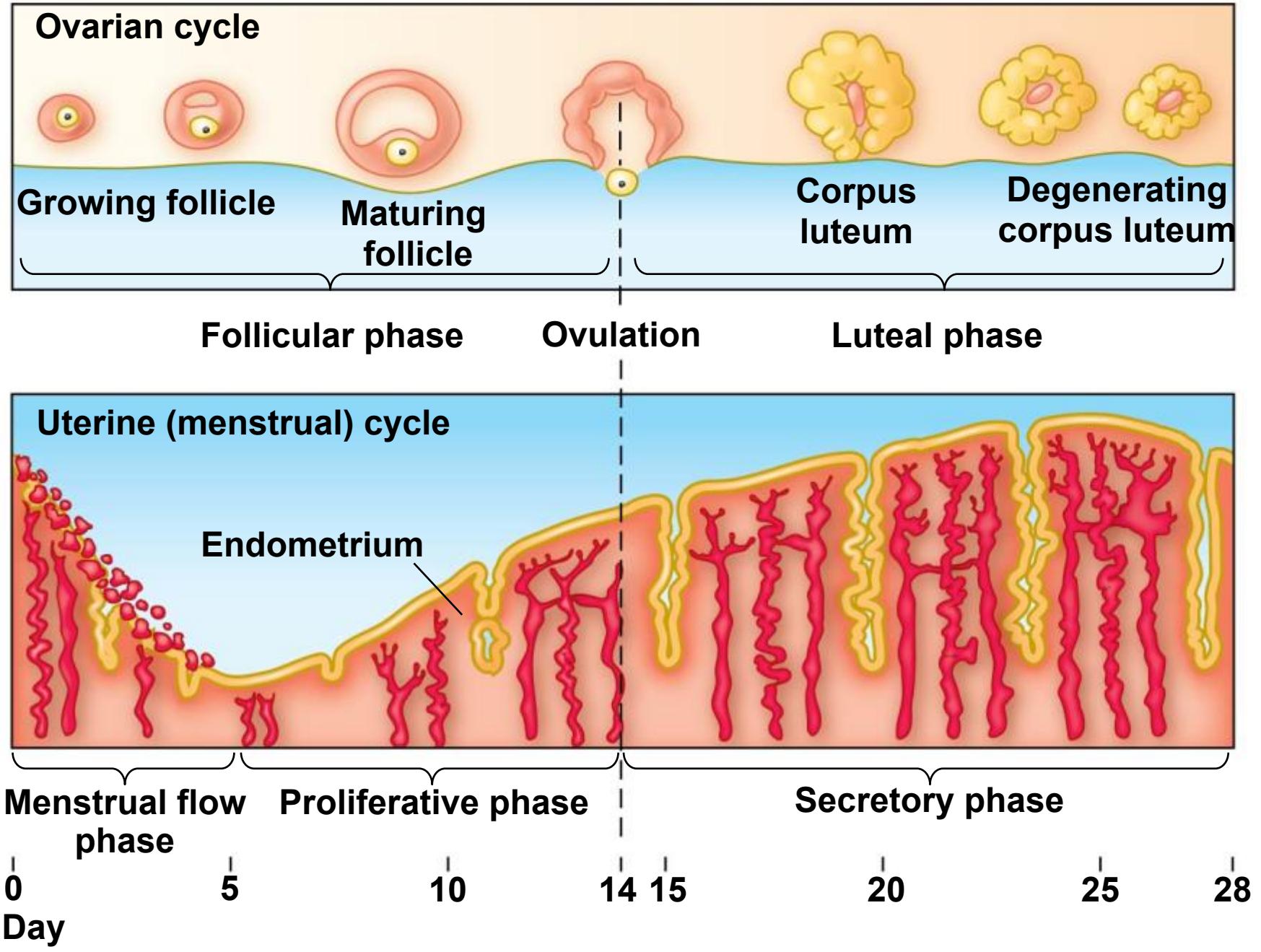
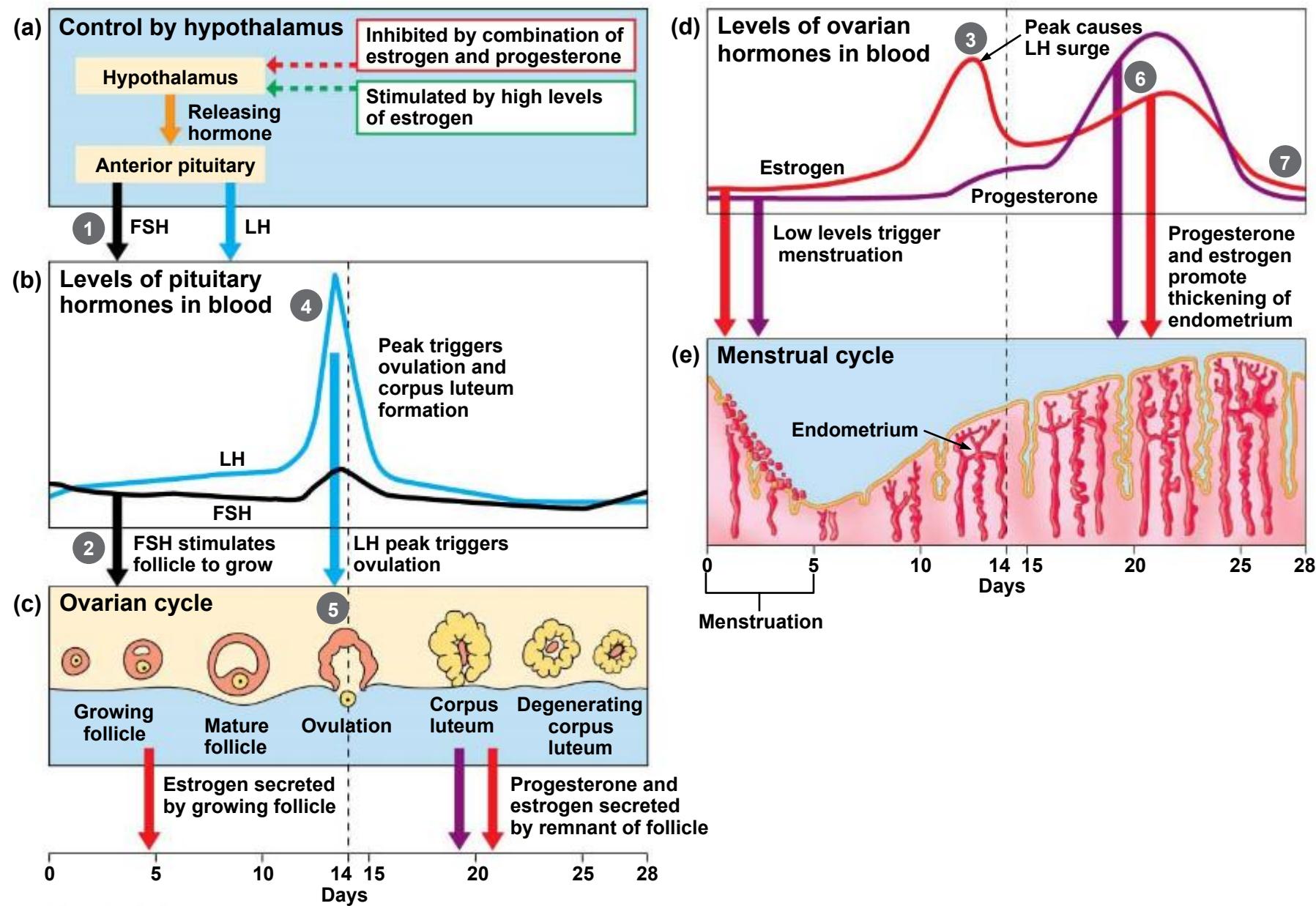


Figure 26.9



# The Indian sanitary pad revolutionary

By Vibeke Venema  
BBC World Service

🕒 4 March 2014 | Magazine

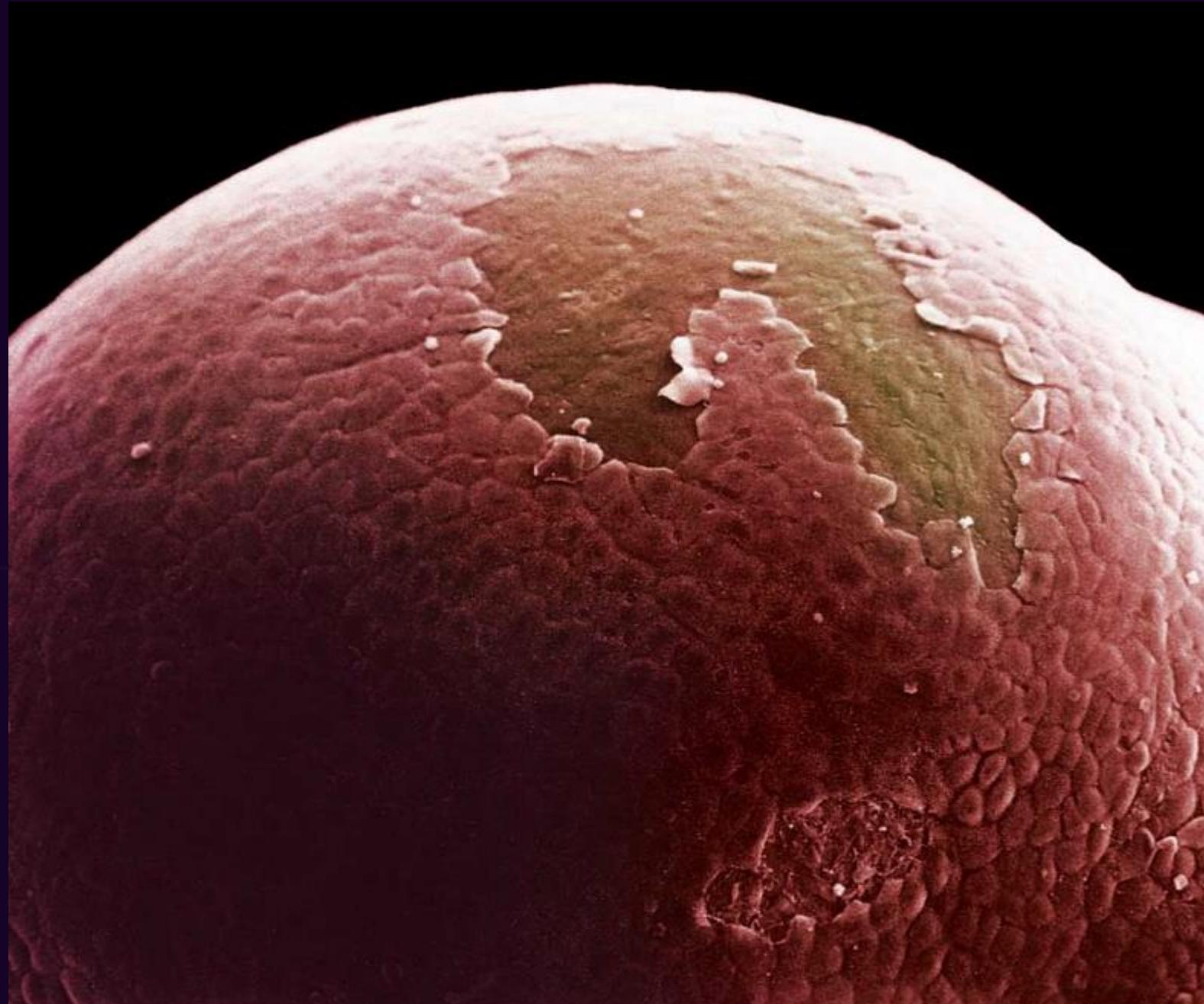
A school dropout from a poor family in southern India has revolutionised menstrual health for rural women in developing countries by inventing a simple machine they can use to make cheap sanitary pads.



eco.femme

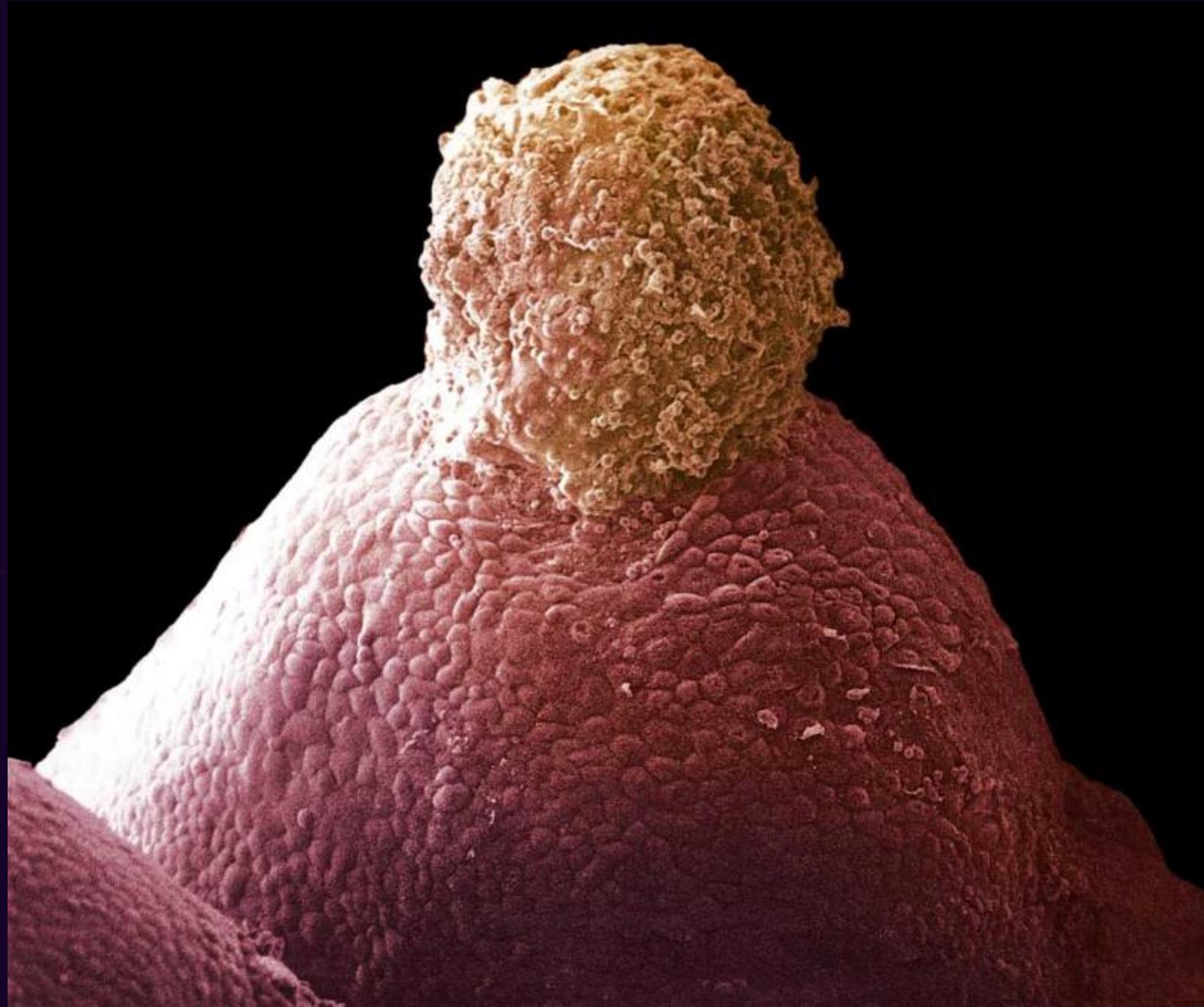
washable cloth pads





Ovulation (series 1 of 2). SEM X1500.

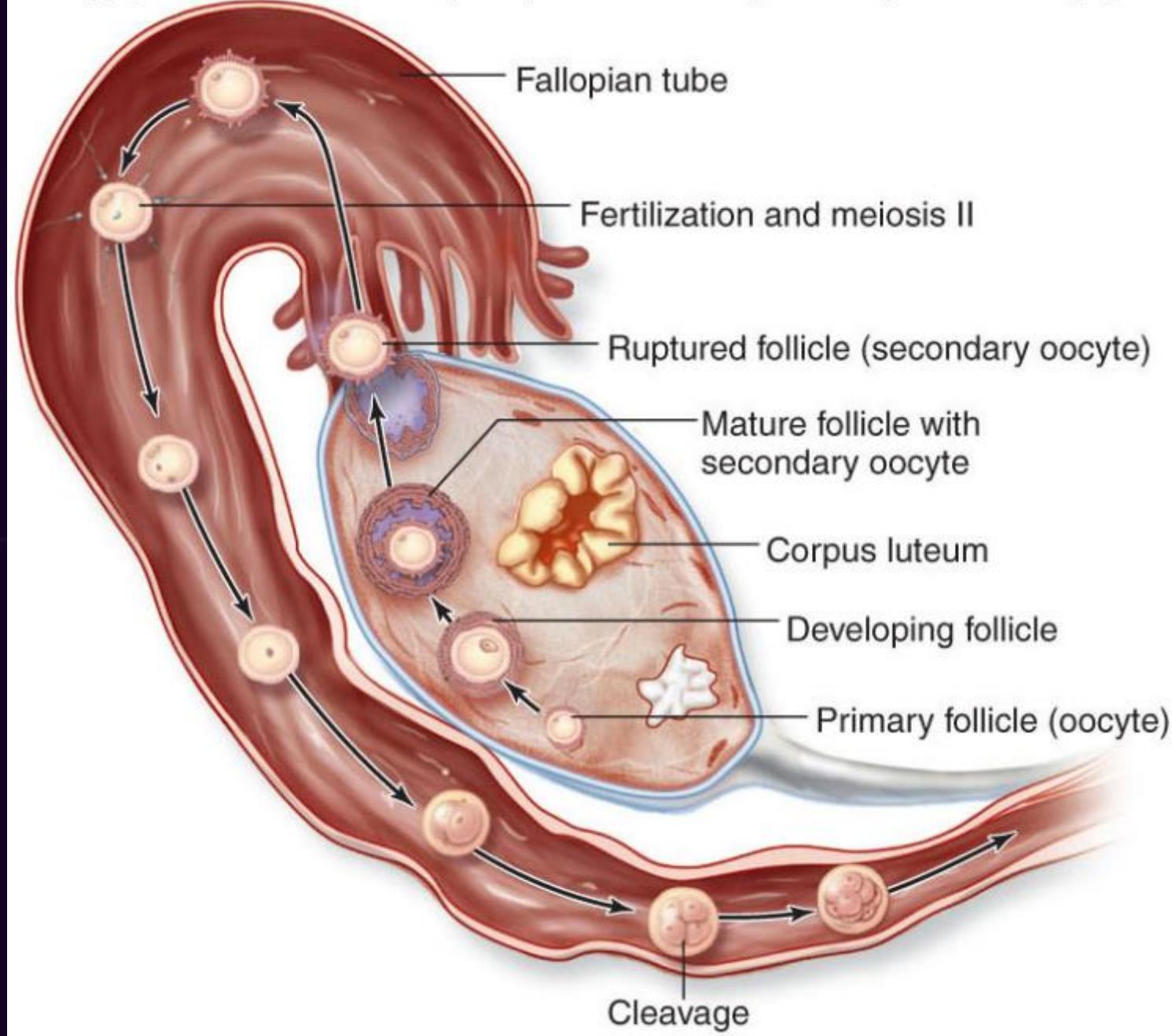
Credit: © Gary Martin/  
Visuals Unlimited



Ovulation (series 2 of 2). SEM X1500.

Credit: © Gary Martin/  
Visuals Unlimited

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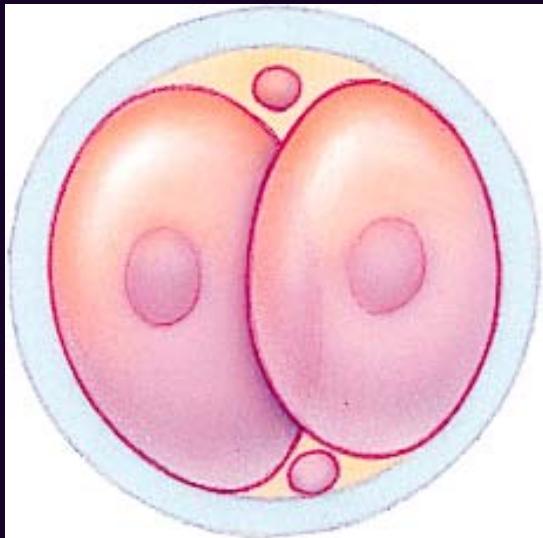
# Fertilization

- 2-5 ml of semen contains ~ 300 million sperms
- < 20 million per ml of semen - “infertility”
- **Copulation** releases hundreds of millions of sperm into the vagina, but only a few hundred survive the trip to the egg, and only one will fertilize it!



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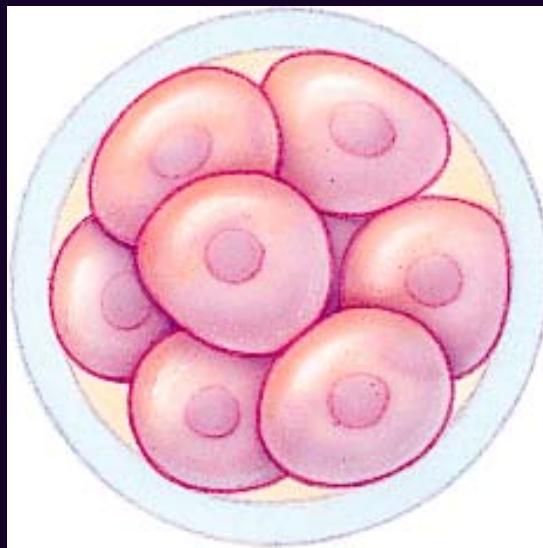
# Early Divisions of the Embryo



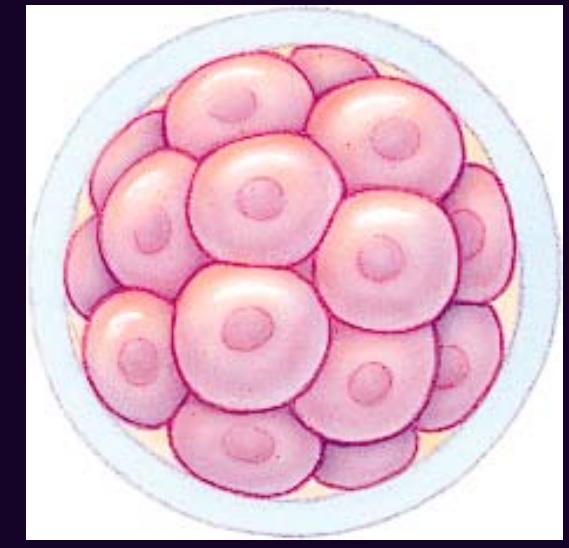
Day 1



Day 2



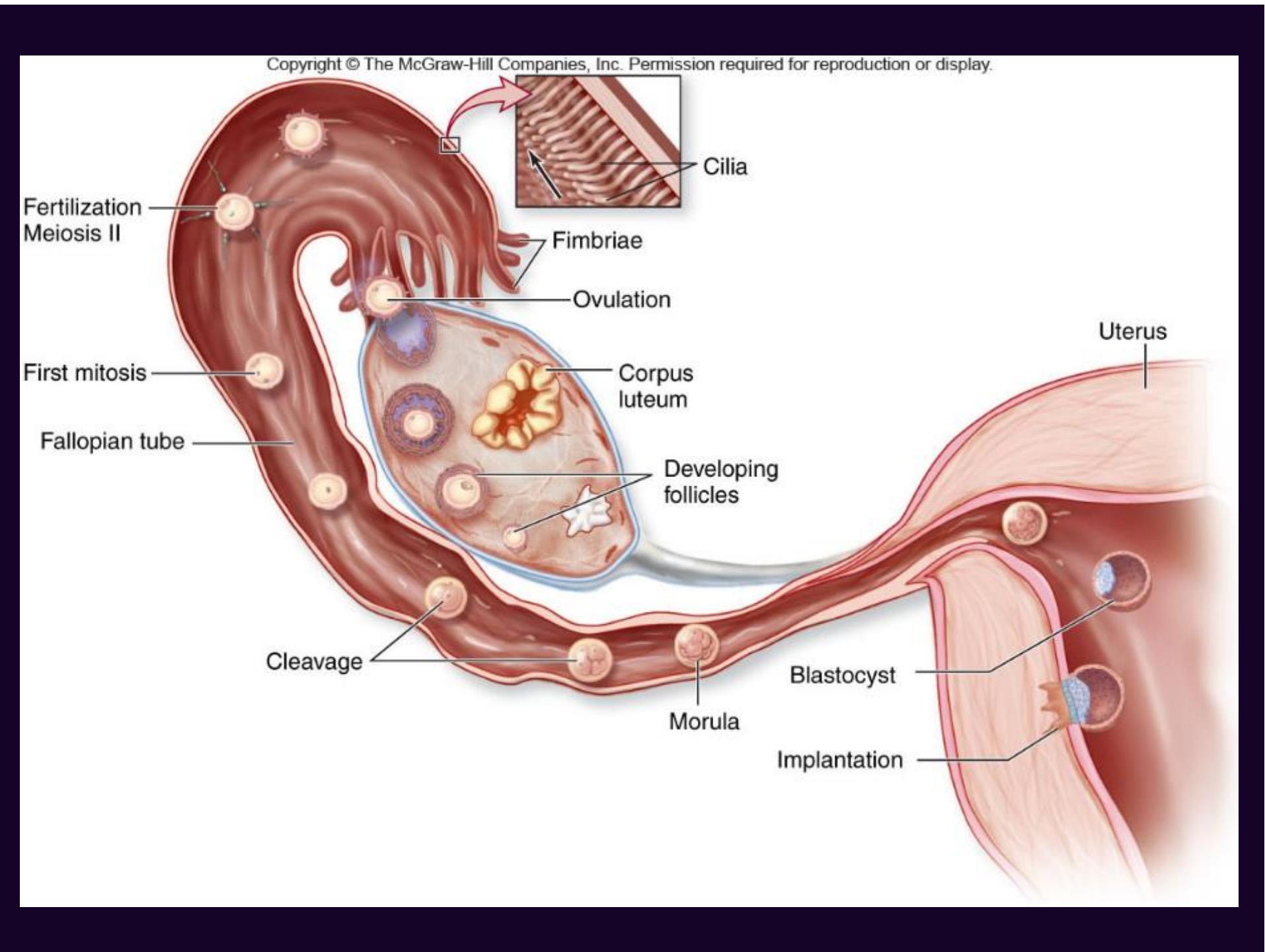
Day 3

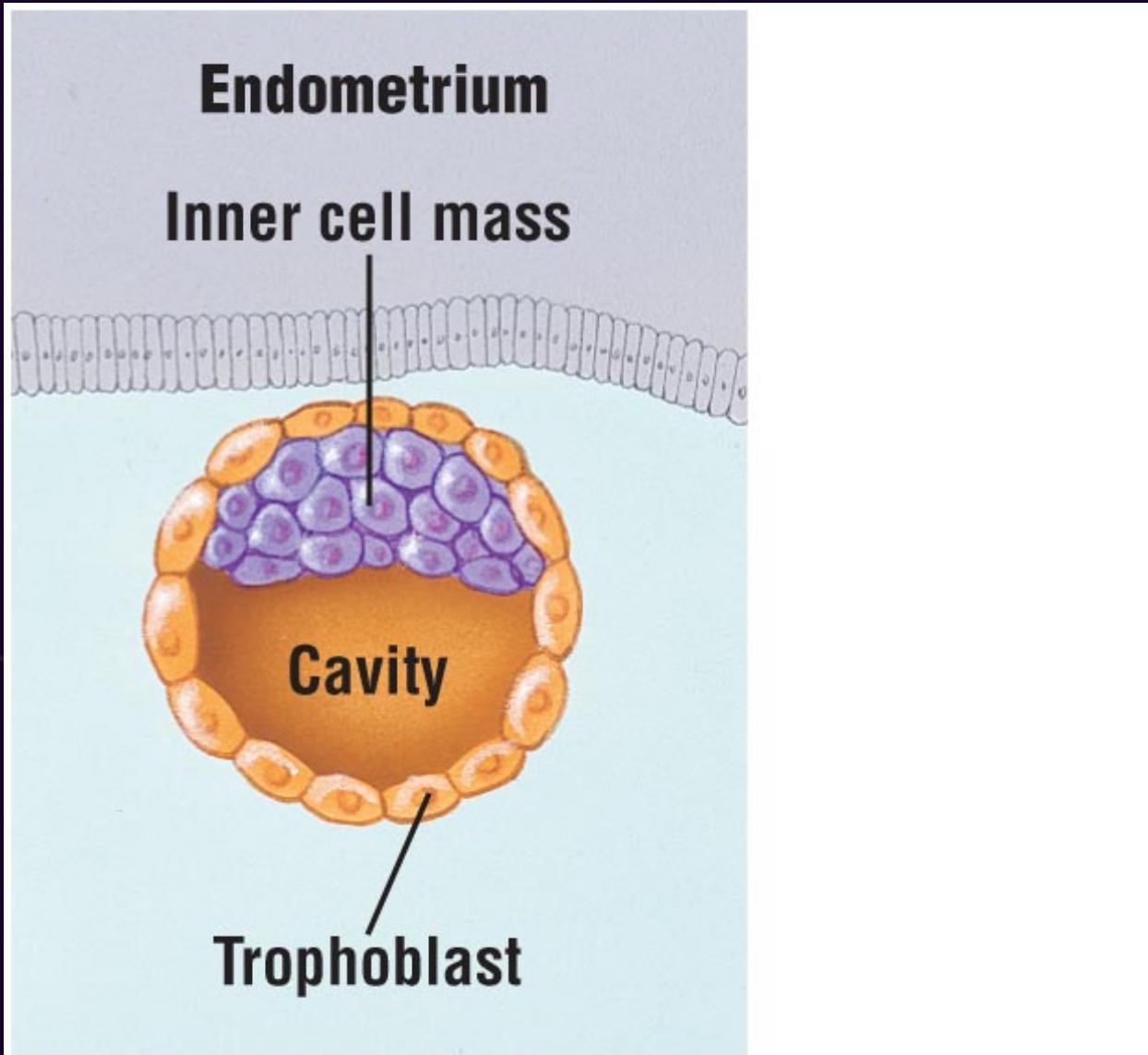


Day 4  
(morula)

# Early Events

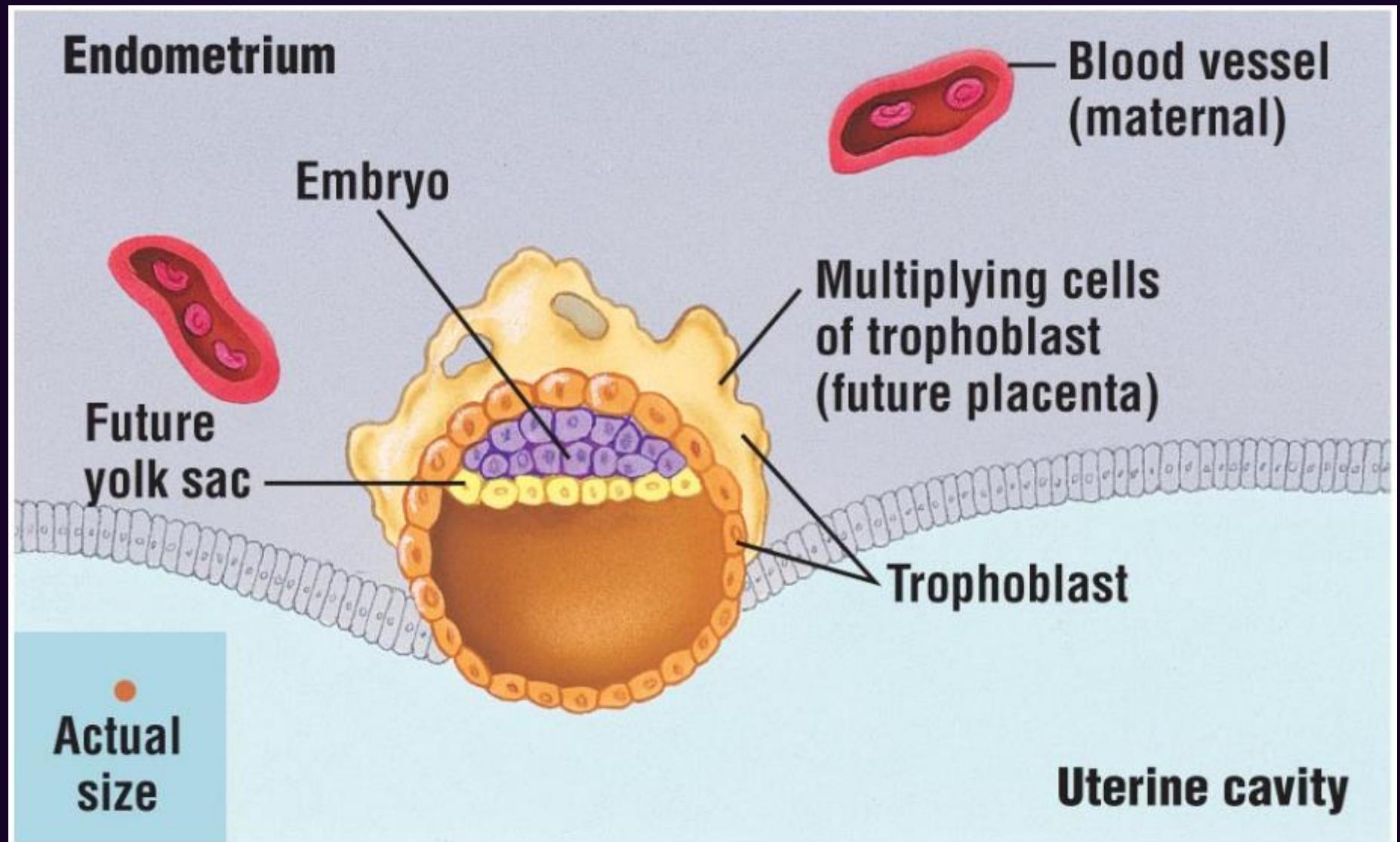
- Day 5 : Blastocyst forms
- Day 6/7 : Implantation into endometrium





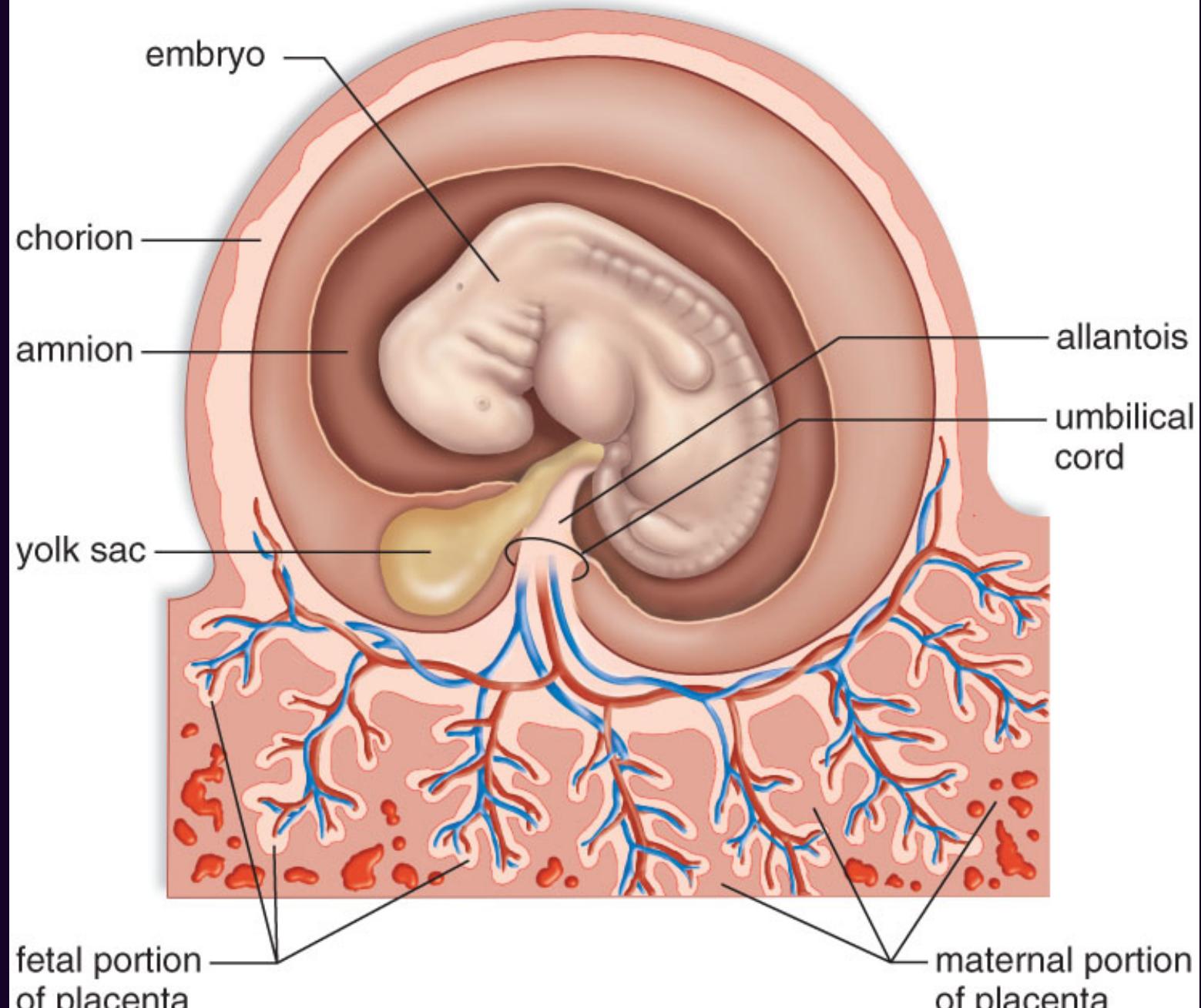
**(a) Before implantation.**

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## (b) Implantation under way.

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Human

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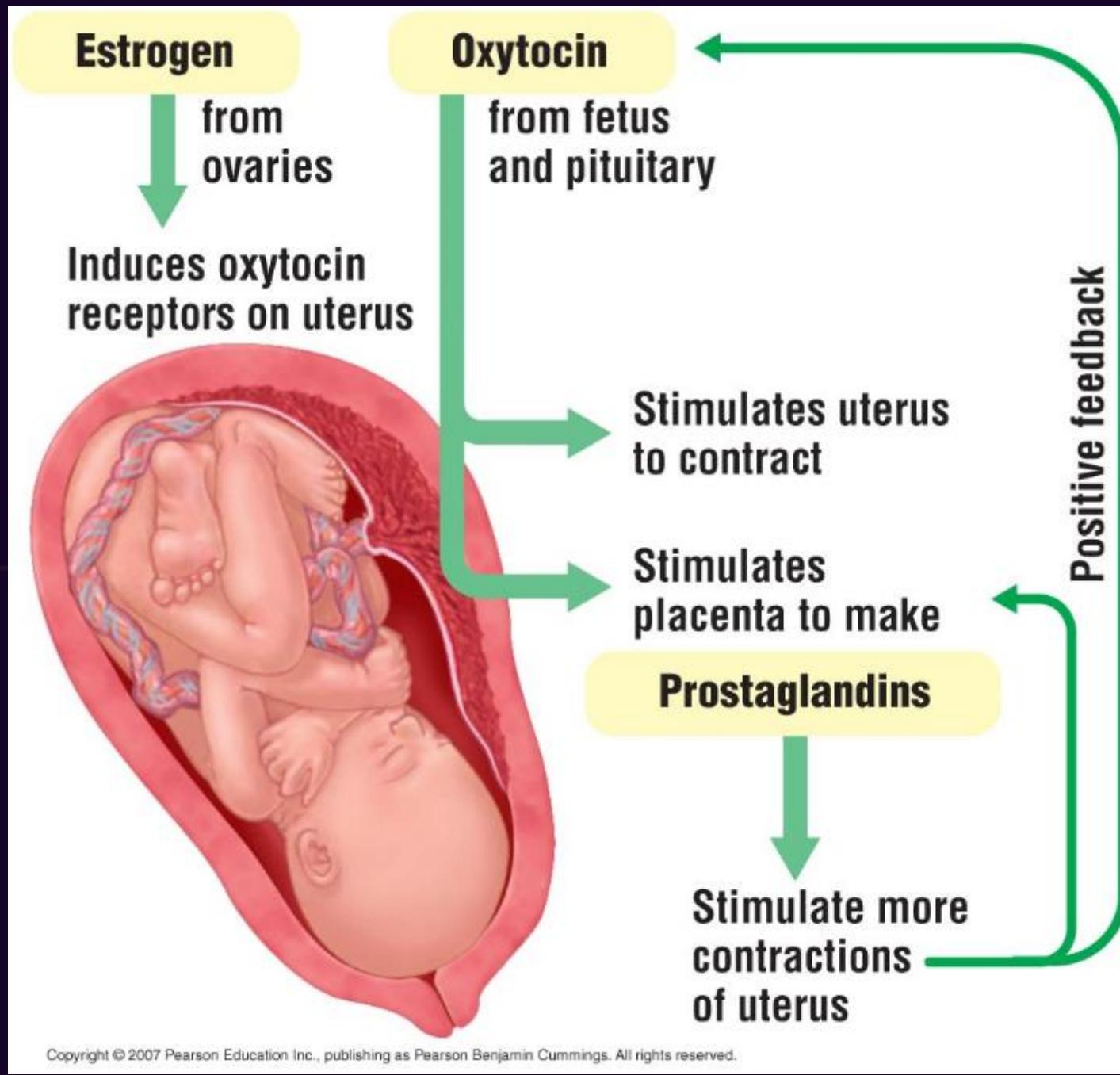


© Lennart Nilsson, *A Child is Born*, Dell Publishing

9-week fetus

# Human Pregnancy

- Lasts ~266 days (or about nine months)
- Divided into trimesters
  - First trimester : Week 1-12
  - Second trimester : Week 13-26
  - Third trimester : Week 27-until birth
- Embryonic development (months 1 and 2)
  - Major organs are formed
- Fetal development (months 3-9)
  - Structures are refined



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