Do males have a surge and tonic center?

NO → only tonic

What animal does NOT have an ampulla?

Boar

What are the 2 stages of the luteal phase?

Metestrus & diestrus

Match the following terms to their definition:

B Luteinization A Luteotropic D Luteolytic C Luteolysis

a. Something that stimulates an action to develop/maintain the CL
b. Process where granulosa and theca cells are transformed into luteal cells (terminal differentiation)
c. Luteal tissue undergoes regression/cell death
d. Something that promotes luteolysis

If False, correct the statement to be True :

True / False: Functional luteolysis is always 1st second because it must undergo structural changes before it can changes its function. → luteolysis (6-10hrs later)

↓ P_4 must decrease before structural changes can occur.

True / False: The testes need to be warmer than the body to help the sperm not deal with ~~cold shock~~. cooler (4-6°C) heat stress

True / False: Progesterone induces max secretion of histotroph production so it's a ~~negative~~ feedback. positive

True / False: Progesterone ~~causes an increase of~~ myometrial contractions. "quiets"

What are the muscles associated with the penis?

- Retractor penis muscles: Maintains "S" shape (sigmoid flexure) - paired
- Ischiocavernous: paired: stops return of blood flow [Steaks]
- Bulbocavernosus/bulbospongiosus: single muscle: empties the extra pelvic part of penis [not bulb]

List the parts of the sperm head and the function:

- Nucleus (haploid): condense DNA stabilized by disulfide bonds until fertilization occurs.
  - inactive until fertilization
- Acrosome: Similar to lysosome: enzymes facilitate sperm penetration to oocyte.
  - Hyaluronidase, acrosin, corona penetrating enzymes, upper 2/3 of sperm head.
- Plasma membrane: little cytoplasm remains in sperm; surrounds the tail.
- Apical ridge: indicates viability - if not present = sperm death 😵. binds to zona pellucida
- post acrosomal ridge: sperm attaches to vitelin membrane of oocyte during fertilization

What binds to the zona pellucida?

Apical Ridge

What's the difference between primary and secondary sperm abnormalities?

1° → arise in TESTES due to faulty differentiation

2° → arise in EPIDIDYMUS due to faulty transit or/and maturation.

In what order, do spermatozoa get transported? (1-11)

Corpus Epididymis	6
Seminiferous Tubules	1
Urethra	11
Rete Tubules	2
Caput Epididymis	5
Vas Deferens	8
Cauda Epididymis	7
Ampulla	9 — except in boars
Efferent Duct	4
Colliculis Seminalis	10
Mediastinum	3

Cycle of Seminiferous Epithelium

Species:	Length of Time (days):
Bull	13.5
Boar	8.3
Ram	10.1
Stallion	12.2

How long is a bull's length of spermatogenesis in days?

~61 days boar - 34 ram/stallion - 49

What would a producer look out for in their male species? (hint: breeding soundness exam)

Daily sperm production, scrotal circumference/size, motility, morphology

Sertoli cells are....

a. Have FSH and T receptors
b. Are the only somatic cells in the tubule compartment
c. "Nurse" cells for spermatogenesis
d. Form part of the blood testes barrier
e. All of the above

Leydig cells are...

a. Produce T
b. Are within the interstitial compartment
c. Stimulated by LH
d. All of the above

What are some changes that sperm undergo that are necessary for fertilization to occur?

↑ in specific gravity (relative density, lose H_2O), Nucleus is more condensed & stable, Sperm become less resistant to cold shock, migration of cytoplasmic droplet.

Where do spermatozoa acquire their fertility?

Corpus

What does non-fractionated ejaculate mean?

The ejaculate is mixed together (sperm + accessory fluid)

Where are no two sperm the same?

Secondary spermatocytes + b/c its they go through meiosis 2

What inhibits the frequency of the release of luteinizing hormone? (LH)

Progesterone

Where does Luteinizing Hormone come from?

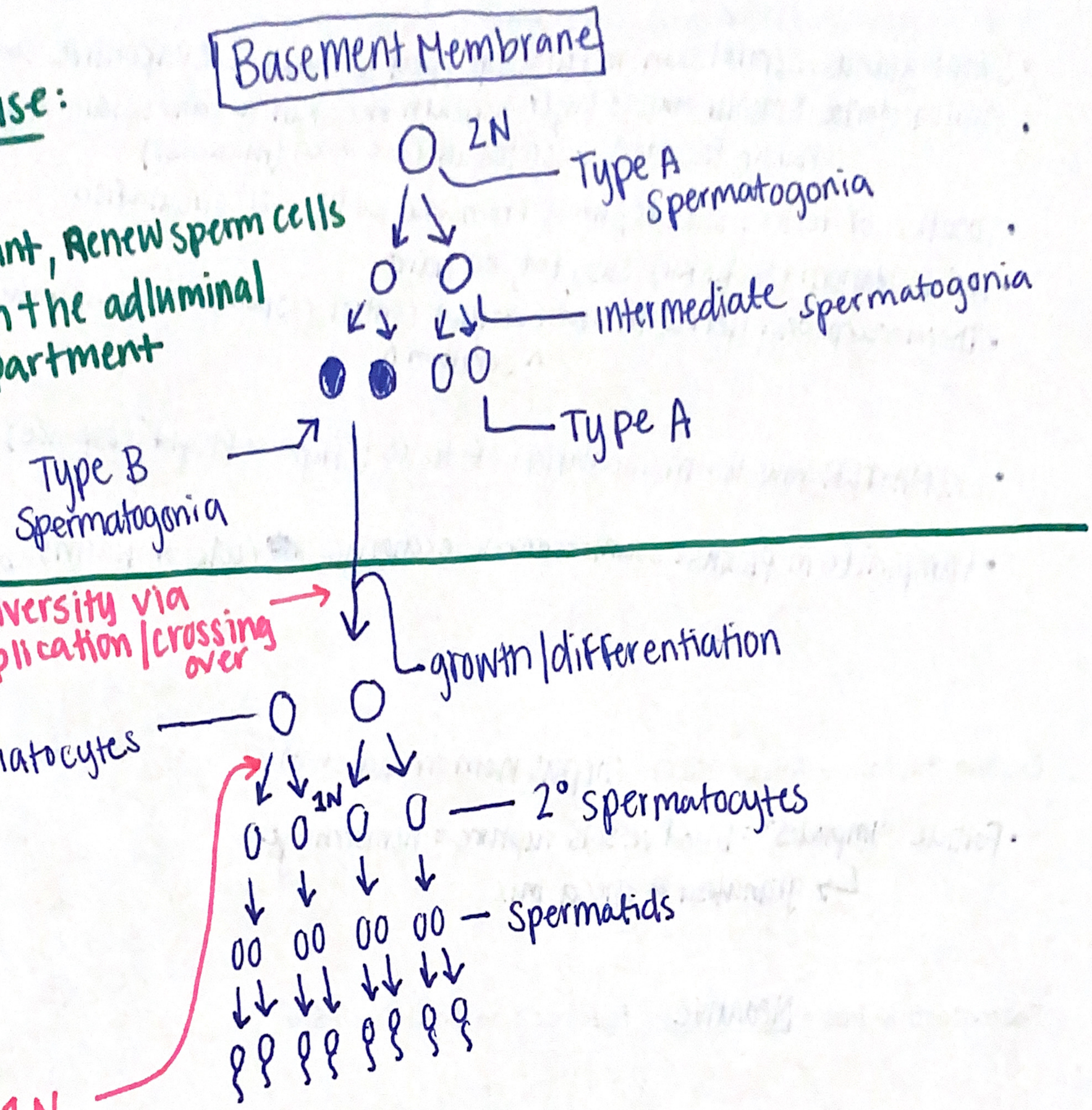
Anterior Pituitary

Let's move into some important information regarding spermatogenesis!

Spermatogenesis:

Proliferation Phase:

- Mitotic divisions
  - → Type A: dormant, Renew sperm cells
  - → Type B: Migration the adluminal compartment



Differentiation Phase:
- NO cell division, morphological changes
- Spermination: released by sertoli cells into seminerous tubules

- Golgi Phase: making acrosome. golgi apparatus receives protins/lipids from ER. It modifies, sorts, concentrates, & packs them into sealed tubules.
- Cap phase: granules flatten to form "cap" over nucleus & primitive tail forms
- Acrosomal Phase: Sperm head begins to take shape - nucleus elongates, acrosome spreads over 2/3 of nucleus. Chromatin condensing. Extension of flagellum, mitochondria migrates towards the neck.
- Maturation Phase: results in spermatids w/motile potential, DNA compacts, & sperm is inert.

What are some / all the functions of thermoregulation?

- sweat glands: scrotal skin is fully equipped w/ them = evaporitive cooling
- Tunica dartos: smooth muscle layer beneath the skin & can sustain muscle contractions to change location + scrotal surface area (thickness)
- Location of testes: outside/away from the body = air circulation
- low insulation: thick skin, subq fat, or hair
- Thermoreceptors: nerves in the scrotum control response to temperature of testes
  ^ scrotum ^
- CREMASTER muscle: manipulation of testes ("fight or flight" response) (skeletal muscle - voluntary
- Pampiniform plexus: countercurrent exchange cools or warms blood

Explain the formation of the CH: corpus hemorrhagicum

- Follicle "implodes" = blood vessels rupture = hemorrhage
  ↳ granulosa & theca mix

Testosterone has a Negative feedback on GnRH/LH/FSH

Spermatids are most sensitive to heat stress. Why? B/C of them undergoing morphological changes.