

Do males have a surge and tonic center?

NO - only a tonic center

What animal does NOT have an ampulla?

Boar

↳ enlargement of
vas deferens.

What are the 2 stages of the luteal phase?

Metestrus + diestrus

Luteinization is ...

- a. the process by which granulosa cells (large luteal cells) and theca cells (small luteal cells) are transformed into luteal cells
- b. the process whereby luteal tissue (CL) undergoes regression and cell death
- c. a material that promotes luteolysis (death of CL)
- d. having a stimulating action on the development or assisting in maintaining the CL

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If False, correct the statement to be True :

True / False: Functional luteolysis is always second because it must undergo structural changes before it can change its function.

its always 1st b/c P₄ production
↓

True / False: The testes need to be warmer than the body to help the sperm not deal with cold shock.

(4°-6°) The testes need to be cooler than the body to help sperm not be heat stressed

Explain the difference between functional and structural luteolysis:

Functional: (always 1st) - decreases P₄ production

• Uterine PGF_{2a} binds LLC = ↑ in Oxytocin

• PGF_{2a} signaling = ↓ LDL receptors on luteal cell + LH recep.

Structural: (6-10 hrs after ^{functional} luteolysis) = luteal cell death (apoptosis)

- Small luteal cells + endothelial (blood) cell die 1st; LLC die 2nd.

- Immune cells digest/remove fragments.

PGF_{2a} ↓ blood flow to the CL

↑ in Oxytocin (LLC)

SLC have an oxytocin Receptor

What is required for luteolysis?

Uterine PGF_{2a}

Is testosterone still produced in cryptorchids?

Yes, thermoregulation is hindered

What are the 3 parts of the penis?

- Base: (root) - attachment portion
- Shaft: main portion
- Glans penis: (tip) - homologous to the clitoris in female - heavily populated w/ nerves

List and describe the types of penile tissue and what species may be associated with each:

- Musculovascular: lots of erectile tissue, little connective tissue

ex: Stallion, human, dog

- Fibroelastic: dense/more CT, Sigmoid flexure allows penis

Ex: Bull: 1 ~ 300° counter clock wise

Boar: (it turns erect; it turns

Ram: (sprays fornx vagina) flacid

(Filiform appendage)

What are the muscles associated with the penis?

- Retractor penis muscle: paired - maintains "s" shape & helps push the penis out. "kinda"
- Ischio cavernosus: paired - stop the return of blood flow [staks]

- Bulbo cavernosus: single muscle - empties the extra pelvic part of the penis (shot bulb)

List the parts of the sperm head and the function:

- Nucleus (haploid): condensed DNA stabilized by disulfide bonds until fertilization occurs - inactive until fertilization

- Plasma membrane: little cytoplasm remaining in sperm; surrounds tail.

- Apical Ridge: indicates viability - not present = sperm death. Bind to zona pellucida

- Acrosome: similar to lysosome: enzymes facilitate sperm penetration of oocyte. upper 2/3 of sperm head. Hyaluronidase, acrosin, corona penetrating enz.

- Post acrosomal ridge: sperm attaches head to vitelin membrane of oocyte during fertilization

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

- 1° - arise in TESTES b/c faulty differentiation
- 2° - arise in EPIDIDYMIS b/c faulty transit and/or maturation

Describe the 3 portions of the epididymis and their functions:

- Caput: (put a cap on your head - top): fertilization factors are added. Sperm are NOT motile or fertile. Proximal cytoplasmic droplet is present.

- Corpus: (middle/body): (army gear) decapitation factors added. Some motility & fertility. cytoplasmic droplet moves down.

- Cauda: (bottom/lower): "Swimming" factors are added. forward moving motility ↑. Caudal
Sperm stored here. • ↑ed fertility & distal cy-droplet.
↓ pH, ↓ O₂ / ↑ CO₂, ↑ of K/Na to reduce Metabolism.
acidic

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
Efferent Duct	4
Colliculus Seminalis	10
Mediastinum	3

- NOT present in boar

What binds to the zona pelucida?

The apical ridge

What are most sensitive to heat stress? Why?

Spermatids b/c they undergoing morphological changes.

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?

Bull: ~~13.5~~ 61 days

Boar: 34 days

Stallion/Ram: 49 days

What would a producer look out for in their male species?

- Scrotal circumference/size
- Morphology
- motility
- daily sperm production

Draw out and label the male reproductive tract:

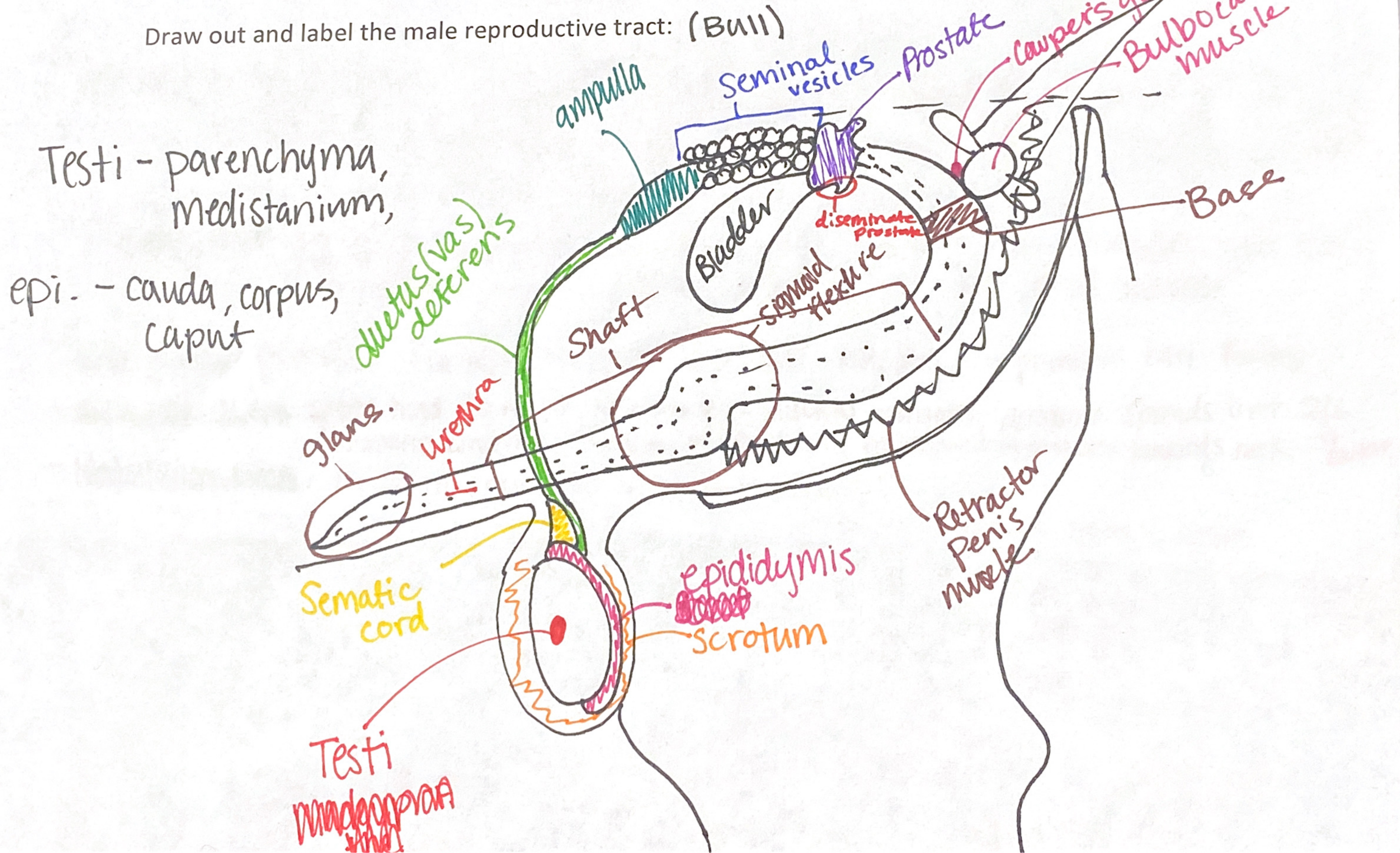
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What would a producer look out for in their male species?

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

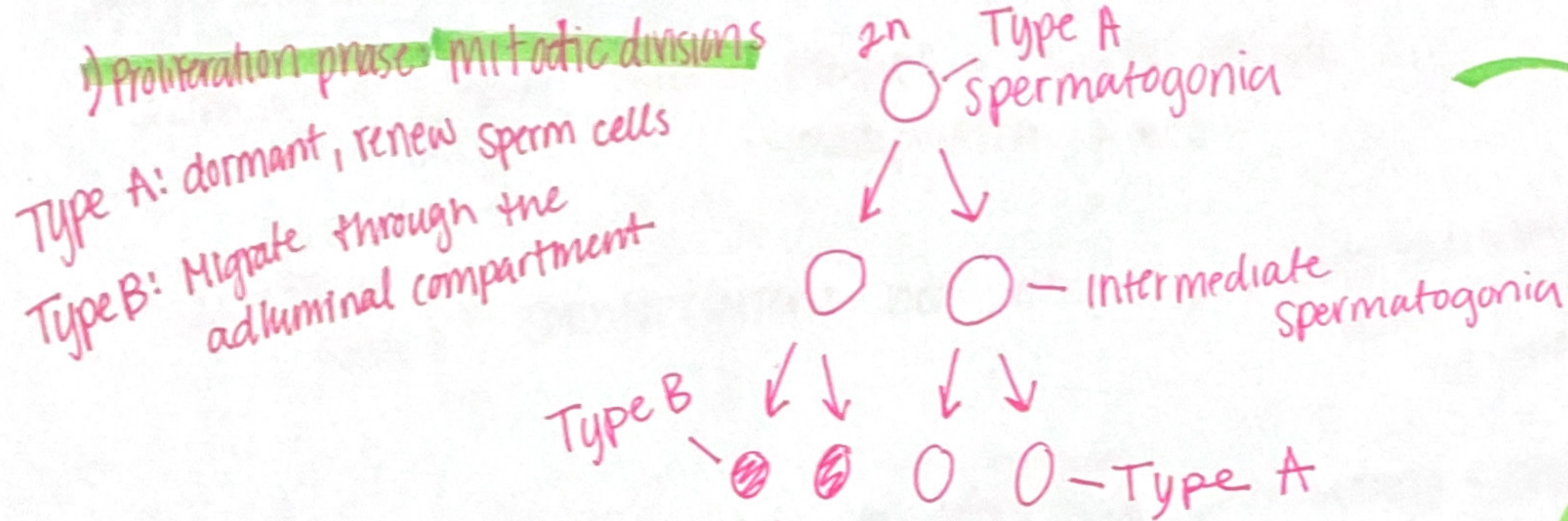
Draw out and label the male reproductive tract: (Bull)



Spermatogenesis:

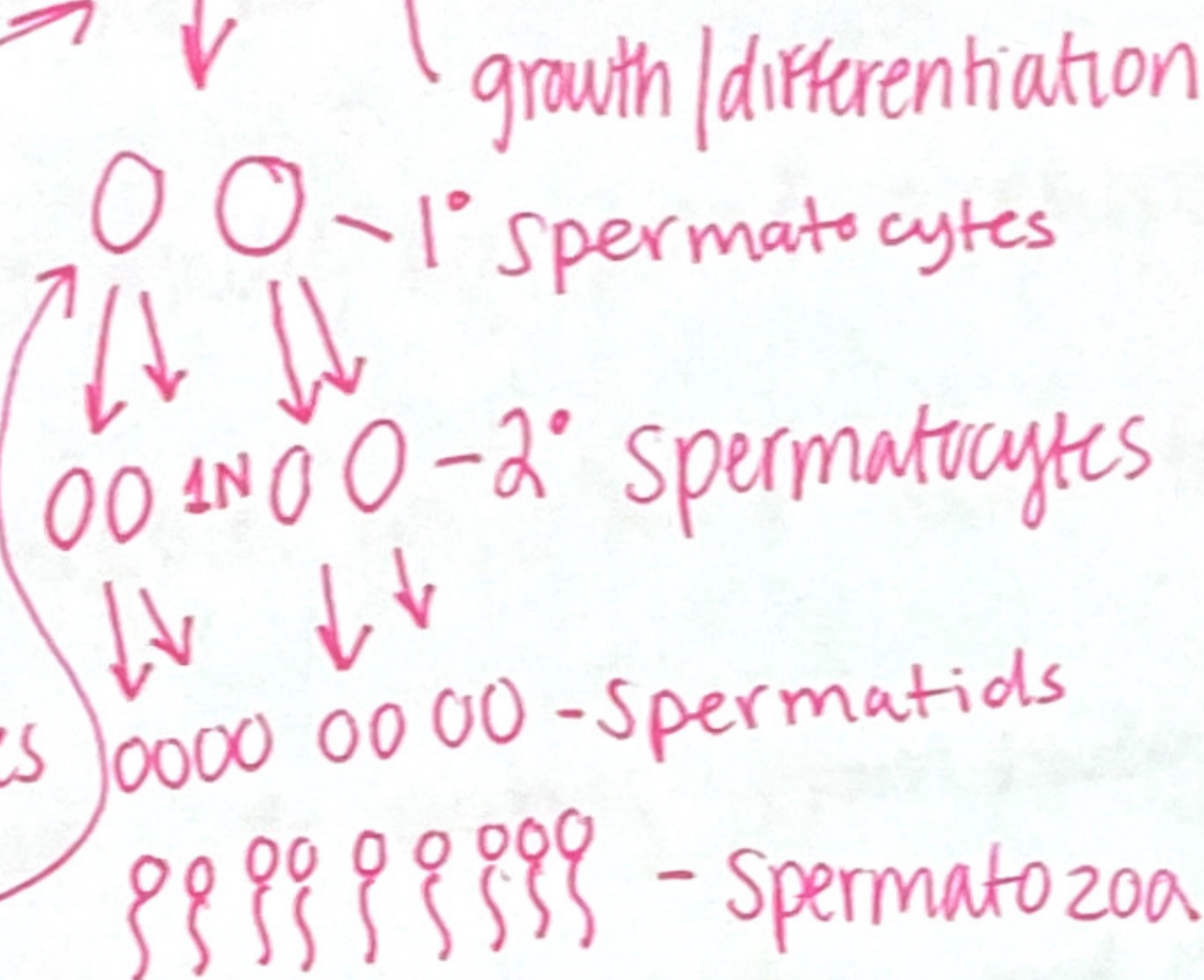
happens in seminiferous tubules.

Test Prep #2
Session 2.5
02.25.2020



2) Meiosis phase:

Meiosis I: genetic diversity
via DNA replication/
crossing over
- produce Spermatocytes



Meiosis II: produces
1N Spermatids

Lumen

3.) Differentiation phase

• No cell division

• Morphological changes

• Spermiogenesis: released by Sertoli cells into seminiferous tubules

- **Golgi phase:** making of acrosome. Golgi apparatus receives proteins + 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 condenses, extension of flagellum, mitochondria migrates towards neck.

- **Maturation phase:** results in spermatids w/ motile potential

• DNA compacts + sperm is inert.

What are some / all the functions of thermoregulation?

- Cremaster muscles: "fight or flight" → skeletal muscle
→ manipulation of testes.
- Pampiniform plexus: counter current heat exchange; cools the blood to testes & warms blood to body.
- Tunica Dartos: smooth muscle: can ~~with stand~~^{sustain} contractions: change location & surface area
↳ beneath skin in scrotum.
- Sweat glands: scrotum is fully equipped. = evaporative cooling
- Thermoreceptors: Nerves - control response of testes temperature
- Location of testes: outside & away from body
- Low insulation: thick skin, subq fat, and hair.