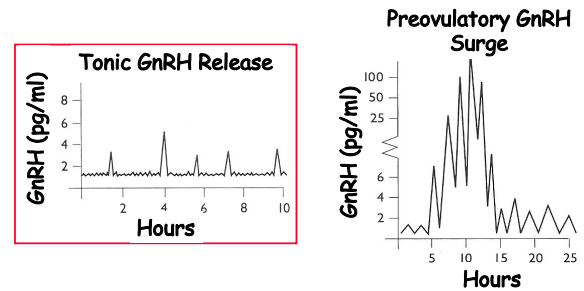


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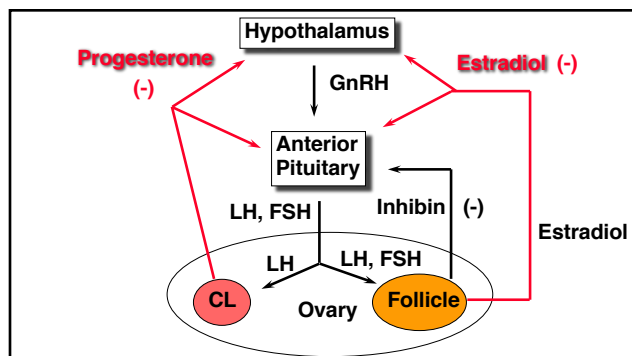
The Follicular Phase of the Estrous Cycle

1

Tonic and Preovulatory Surge of GnRH

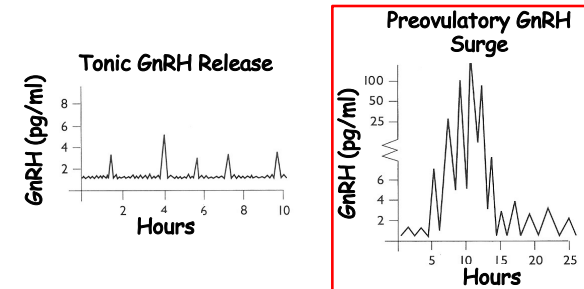


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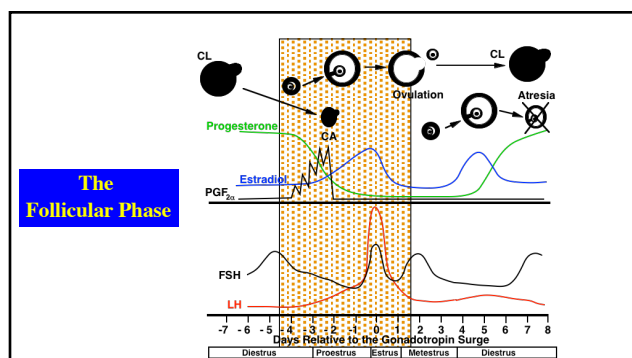


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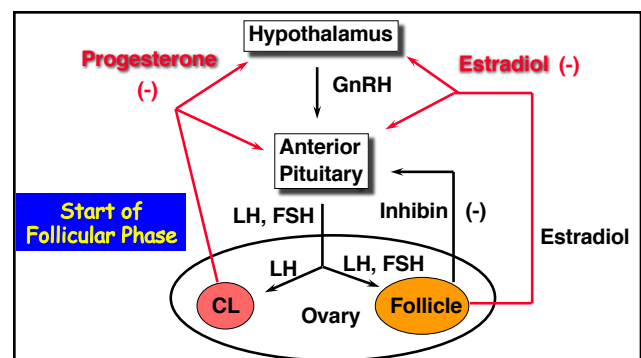
Tonic and Preovulatory Surge of GnRH



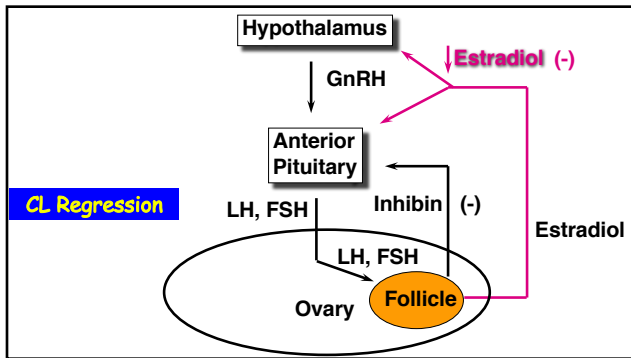
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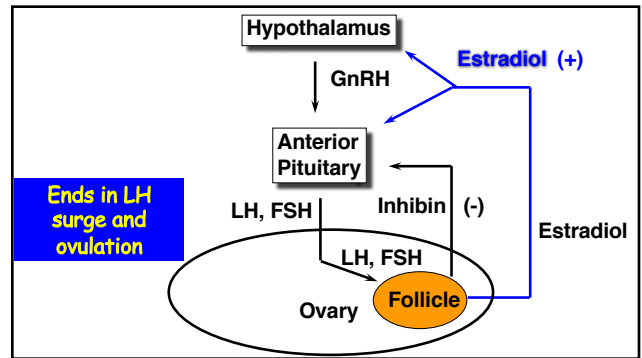
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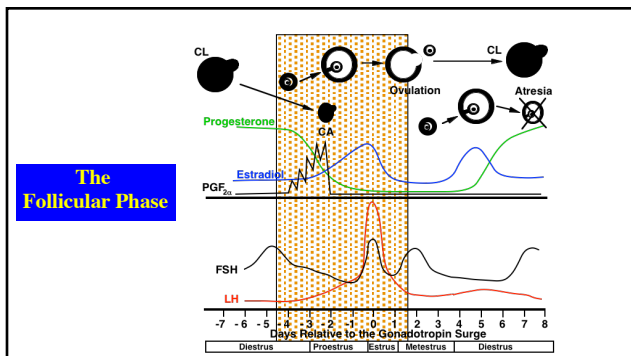
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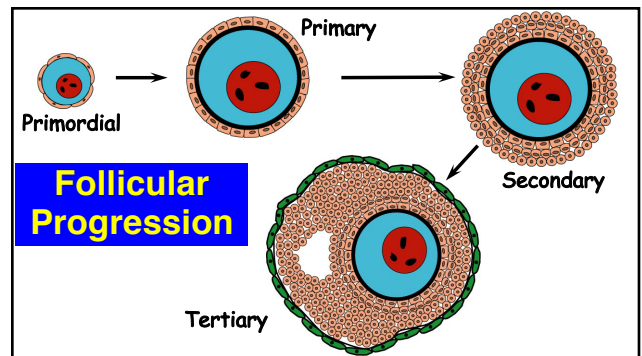
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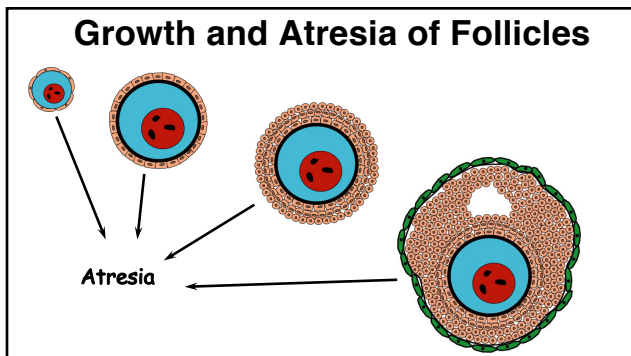
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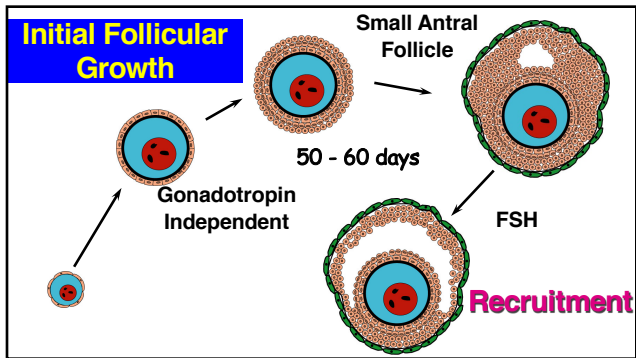
11

Fate of follicles and oocytes

At birth	100,000	100 Days of Gestation 2.9 million
12 months	75,000	
4-6 years	21,000	
Aged cow	2,500	

- Follicles undergo atresia at all stages of development.
- Maximum number of oocytes ovulated for a cow
17 cycles/year x 8 year = **136 oocytes ovulated / lifespan**
Superovulation or Ovum Pick-up (OPU) - rescue some follicles from atresia

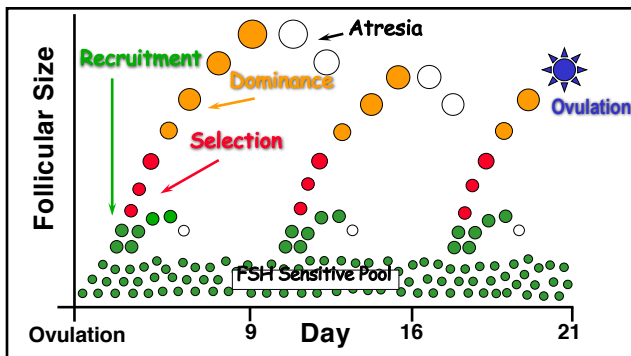
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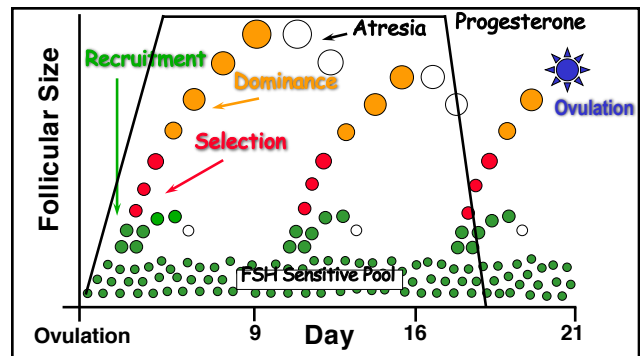
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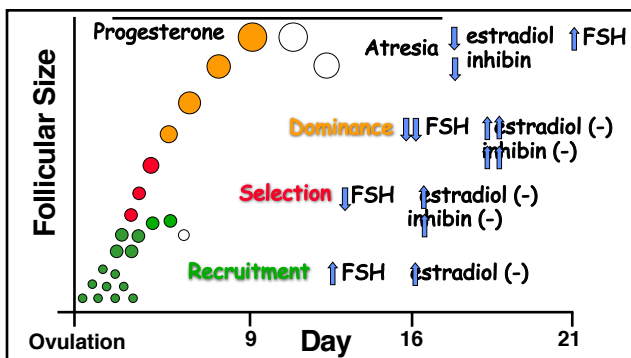
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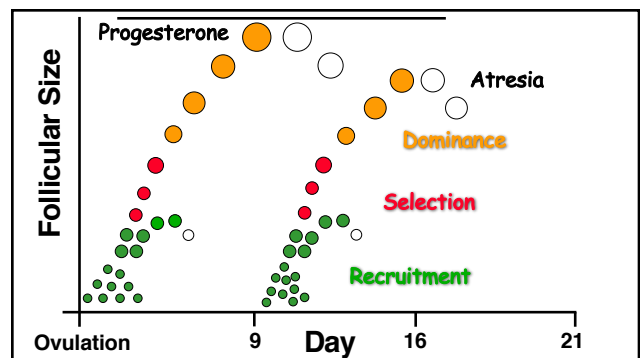
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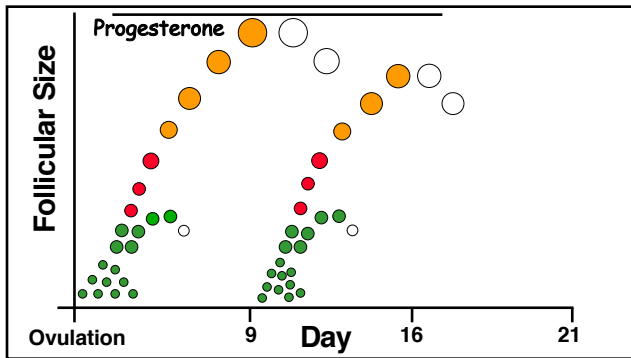
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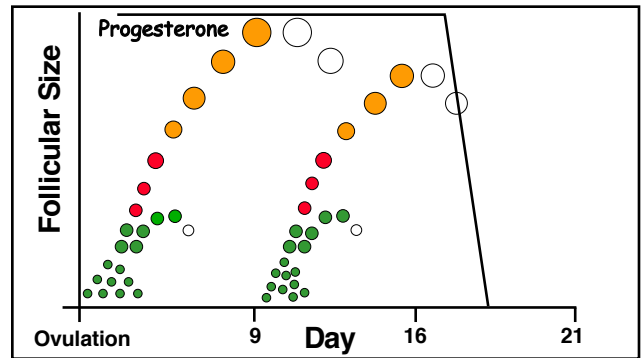
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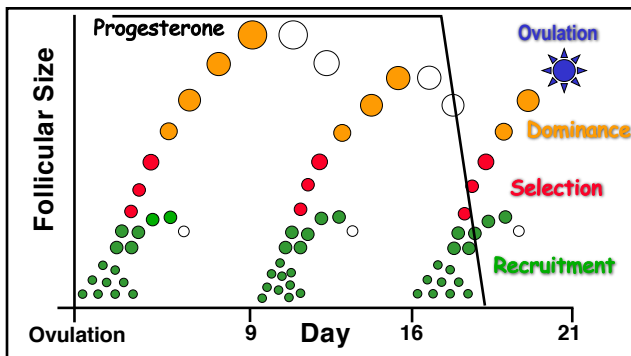
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19



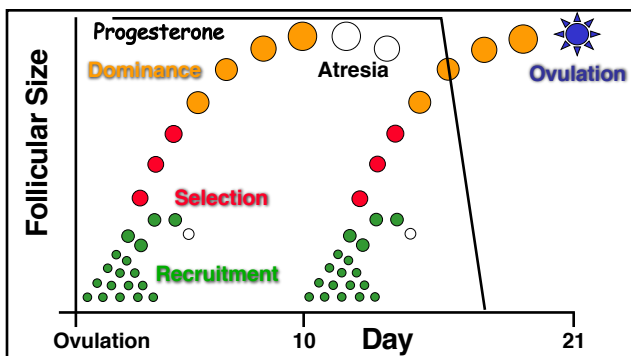
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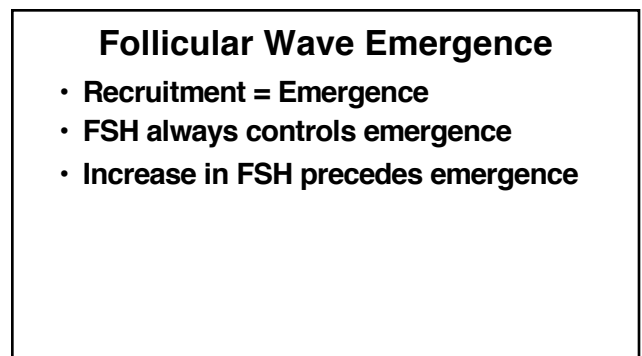
21



22



23



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Species Variation in Follicular Waves

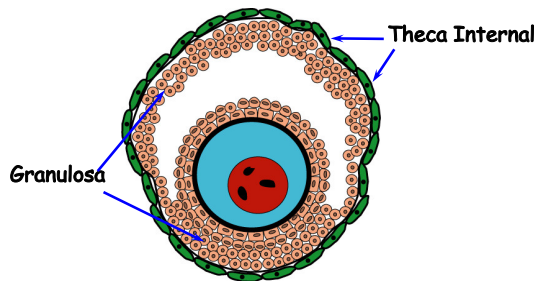
- Cattle - 2 or 3 / cycle
 - Sheep - 4 or 5 / cycle
 - Pigs - 1 / cycle
 - Horses - 1 / cycle
 - Human - 1 / cycle
- Cl-progesterone
- Cl-progesterone, inhibin
- If first wave stops/fails, then a second wave emerges!!!

25

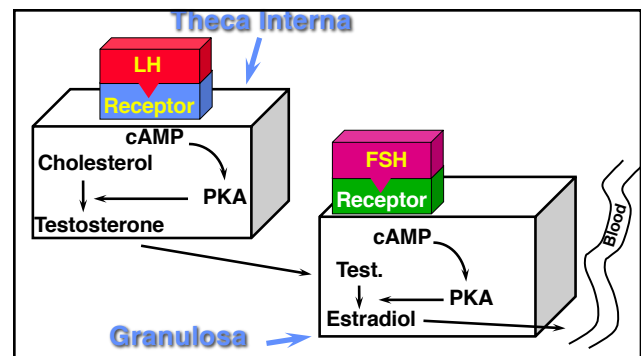
Gonadotropin Action Within the Follicle

26

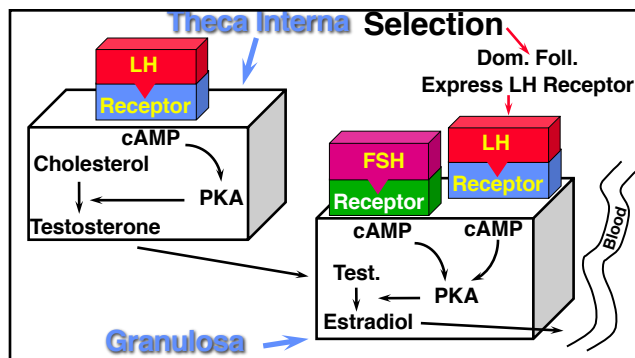
Antral Follicle



27



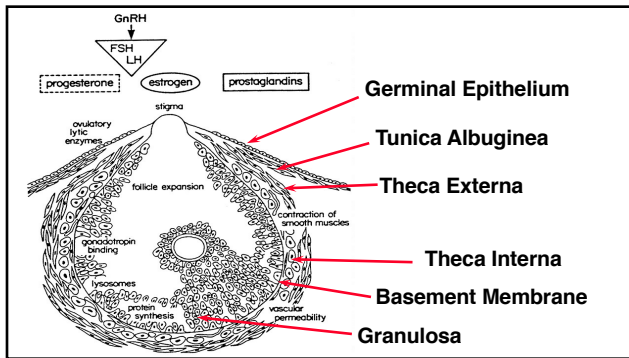
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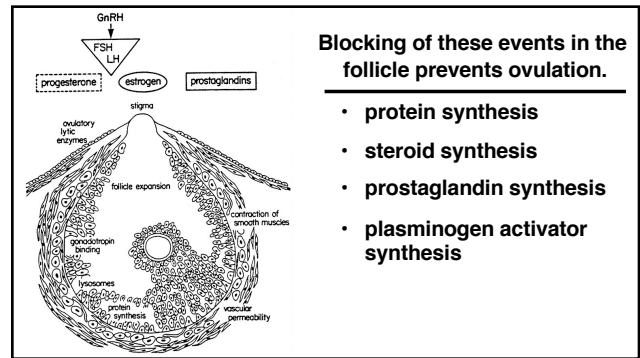
29

Ovulation

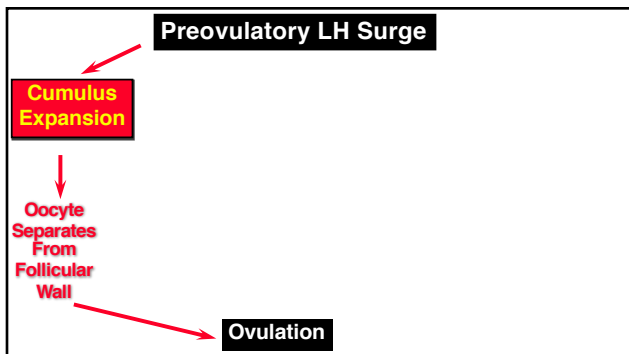
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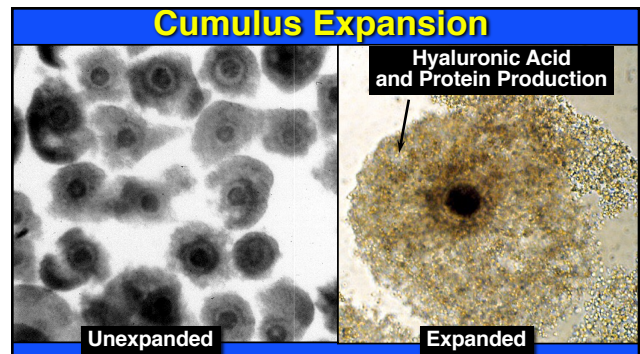
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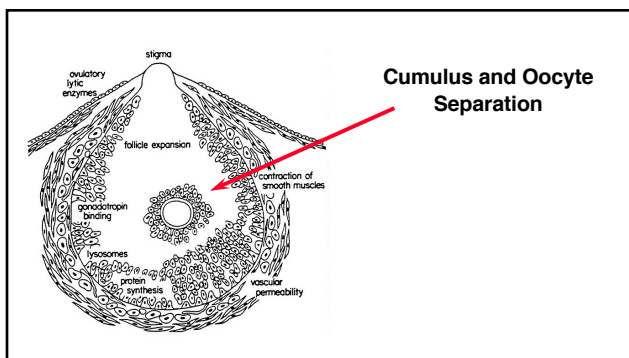
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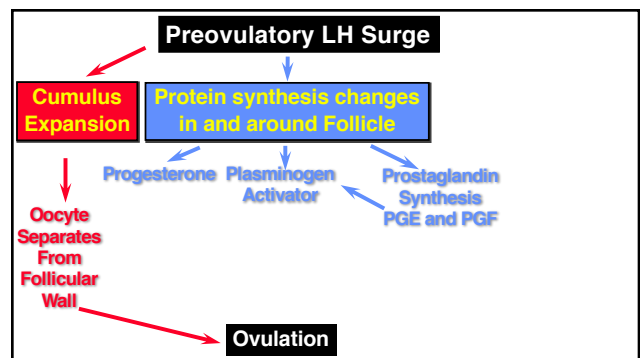
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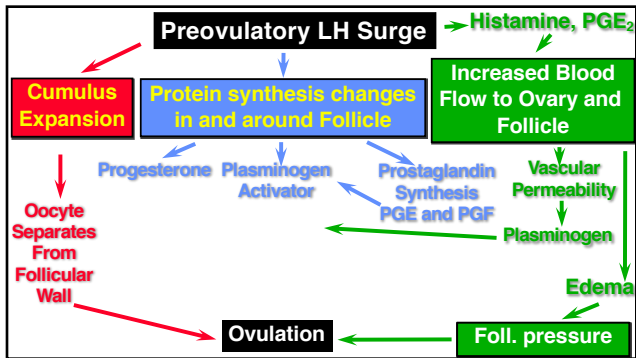
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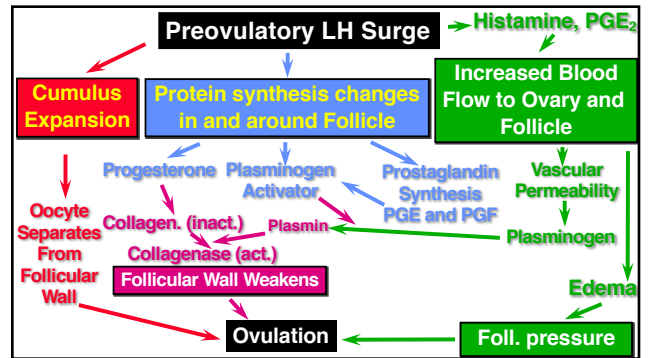
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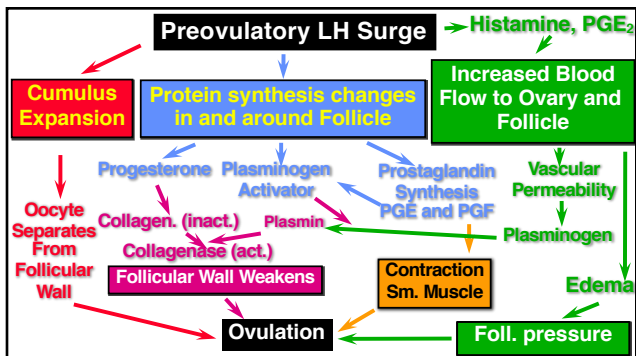
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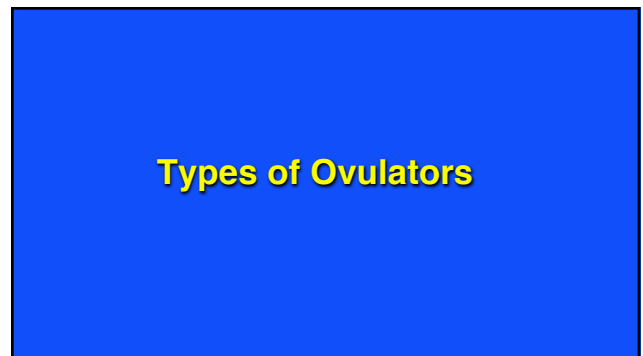
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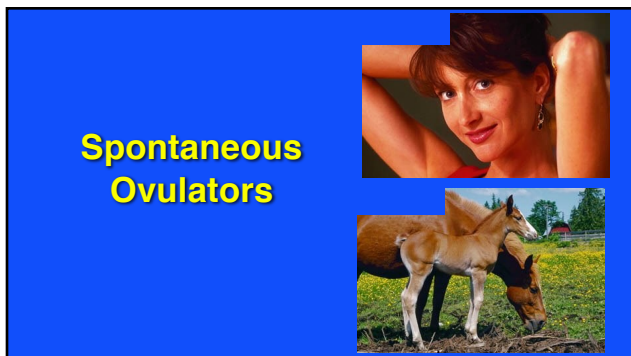
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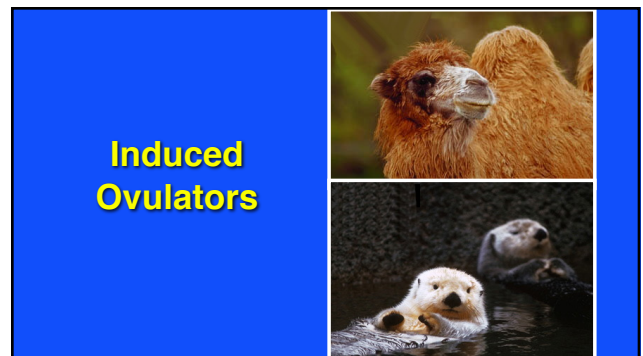
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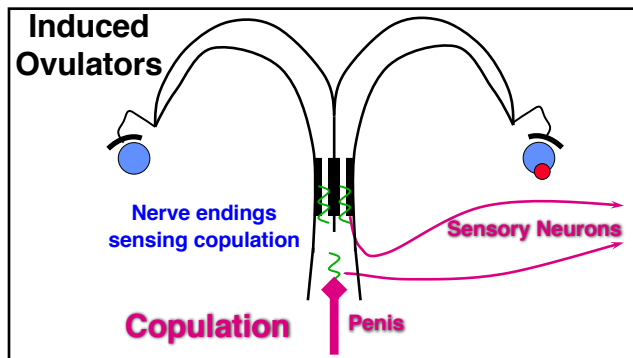
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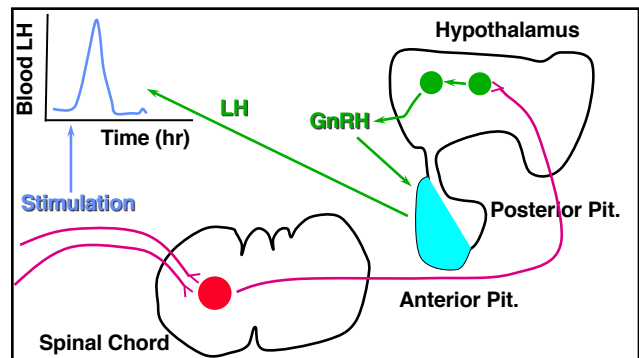
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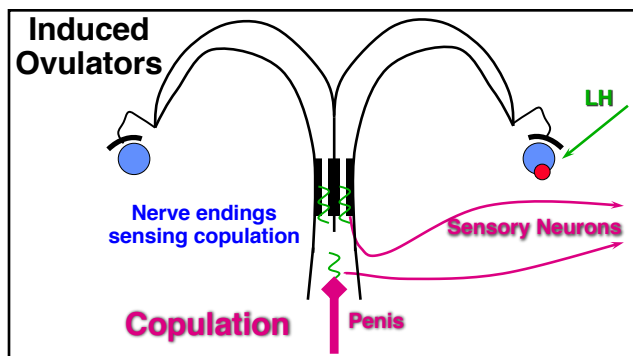
42



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Cats

Induced Ovulators

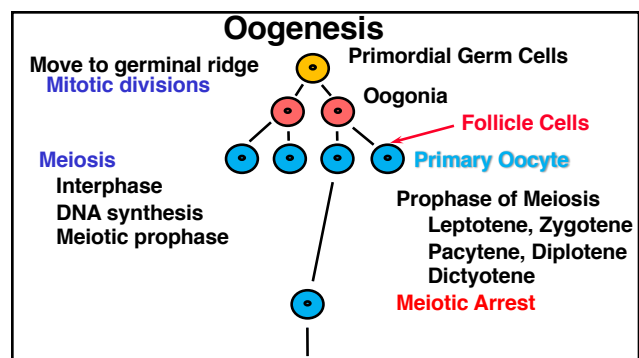
- Single copulation
 - Only works 50% of the time
- Multiple copulations
 - Higher LH surge

46

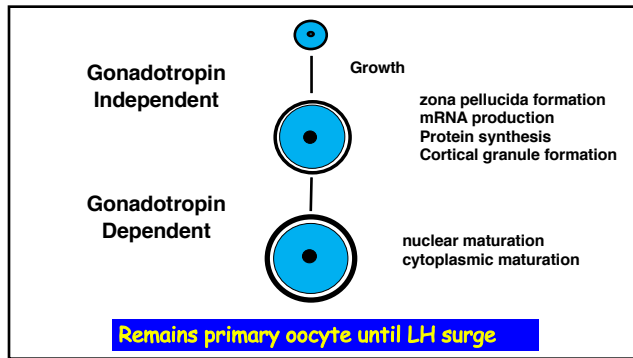
Spontaneous Ovulators

- Retain some neural control of ovulation
 - heifers can alter the timing of the LH surge by clitoral stimulation
 - human rape cases result in higher than expected pregnancy rates

47



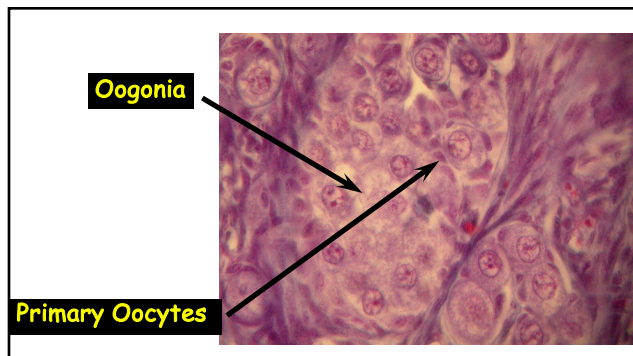
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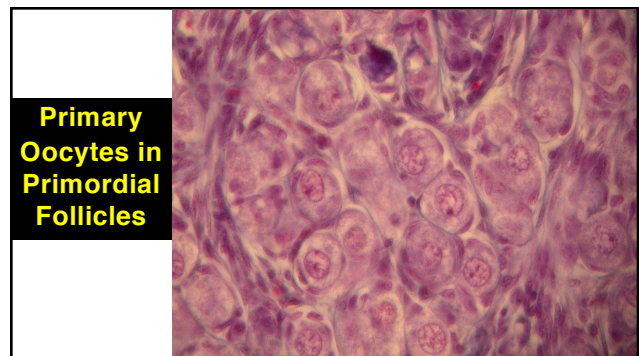
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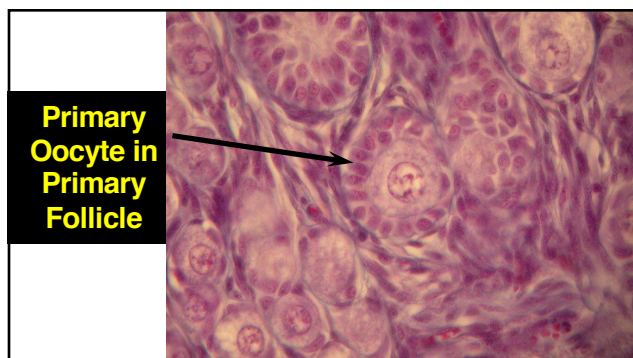
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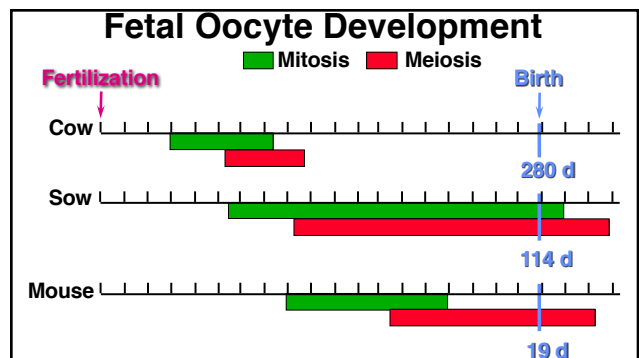
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52

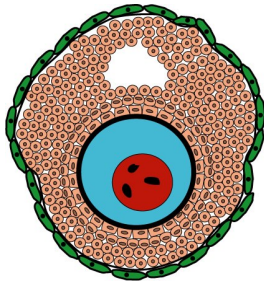


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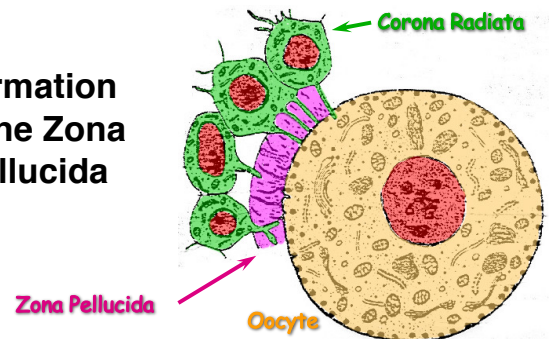
54

Ovulation of Tertiary Follicle

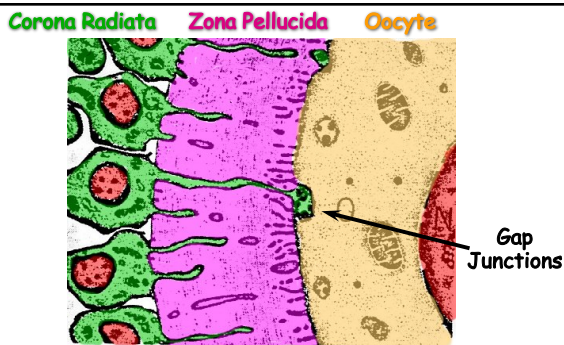


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Formation of the Zona Pellucida



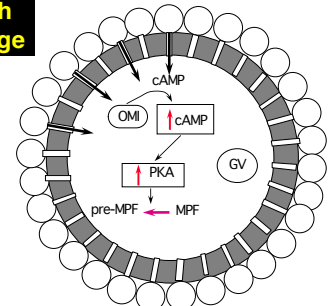
56



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During Oocyte Growth and Before the LH Surge

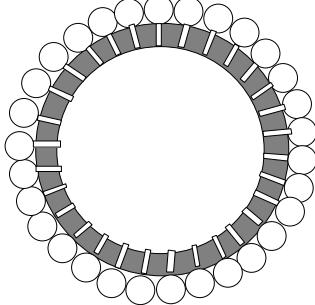
- OMI - Oocyte Maturation Inhibitor
- MPF - Maturation promoting factor
- GV - germinal vesicle (nucleus)



Gap Junctions Allow Cell to Cell Communication!

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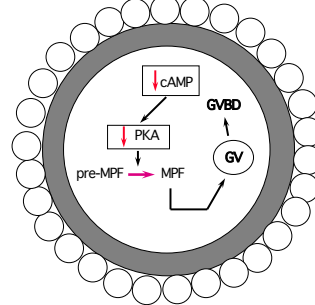
The LH Surge



Gap Junctions are Destroyed!

59

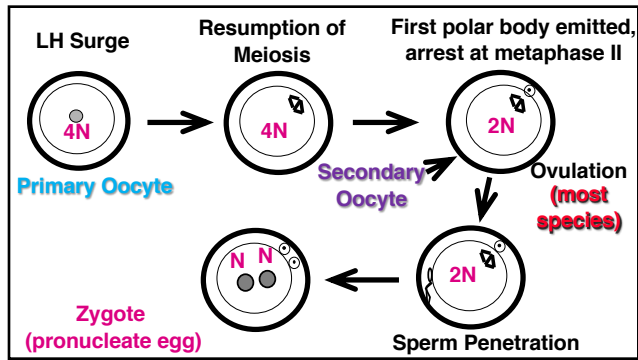
The LH Surge



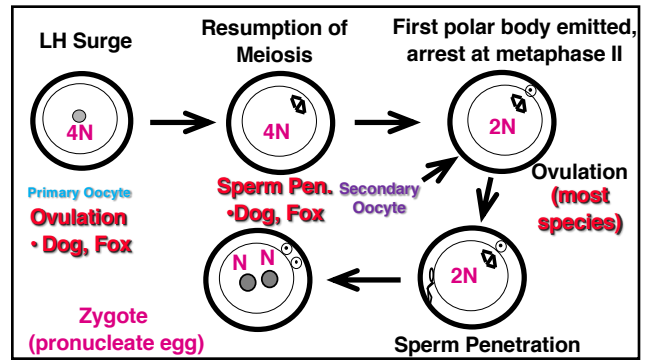
Resumption of Meiosis

Gap Junctions are Destroyed!

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