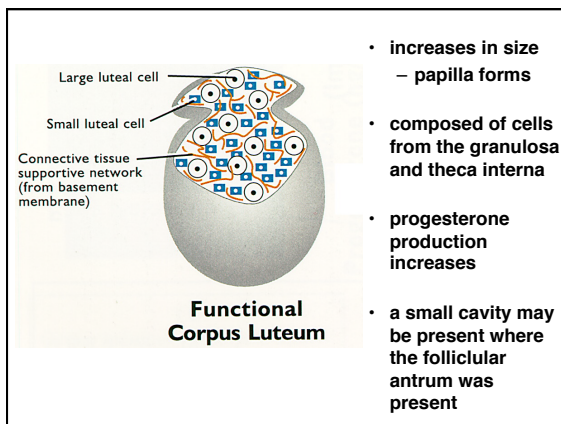
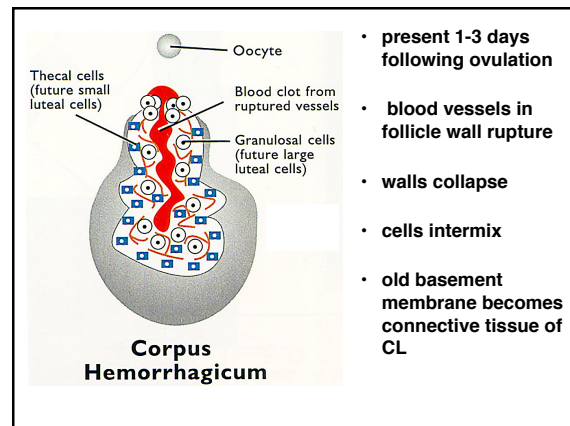
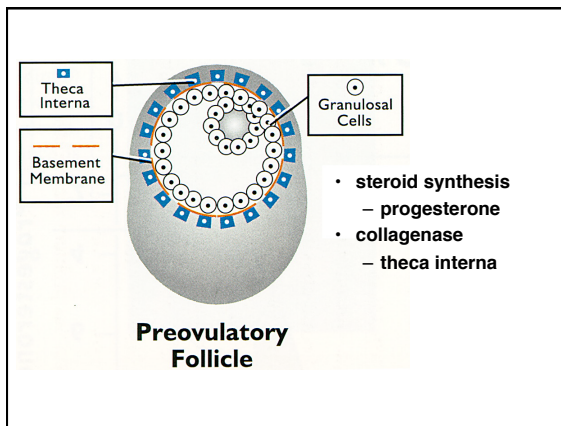
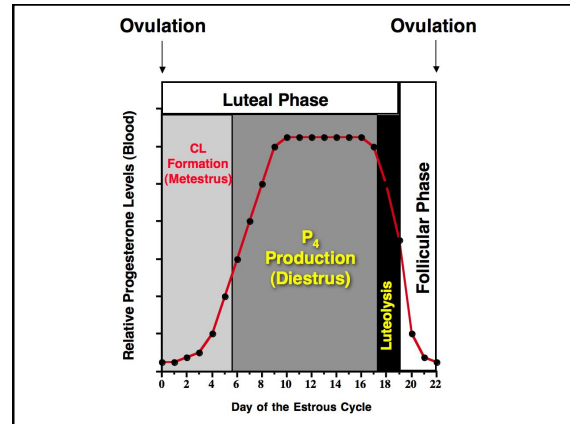


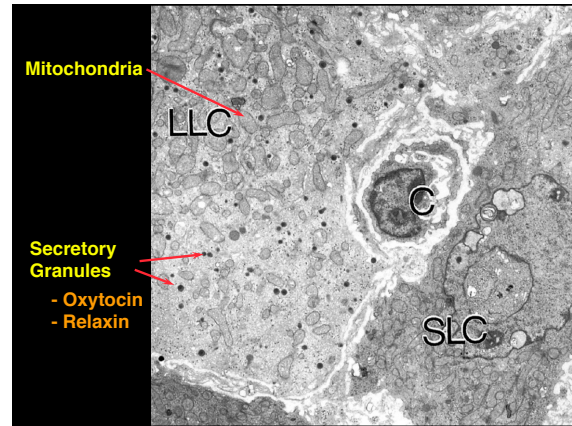
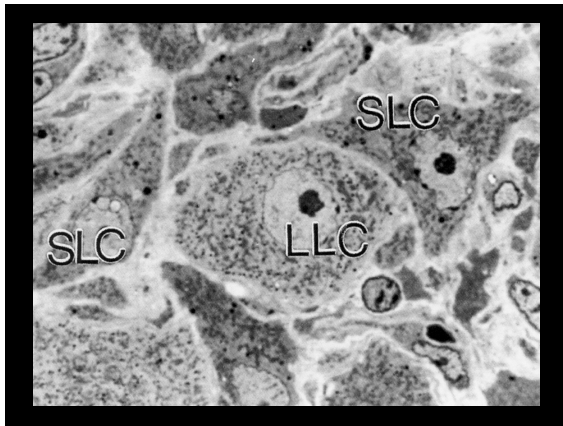
The Luteal Phase of the Estrous and Menstrual Cycle

John Parrish



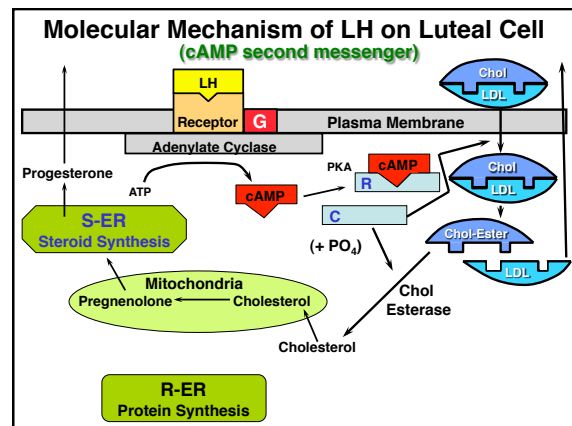
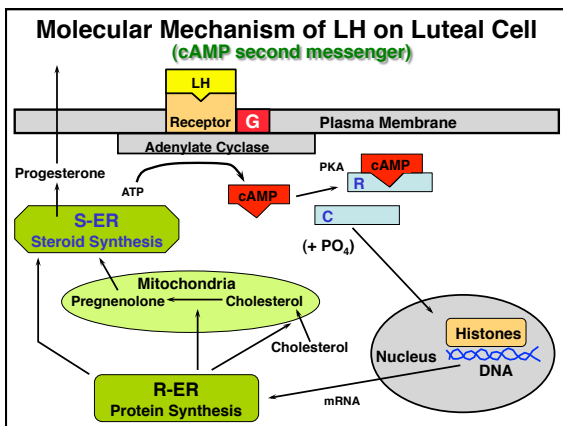
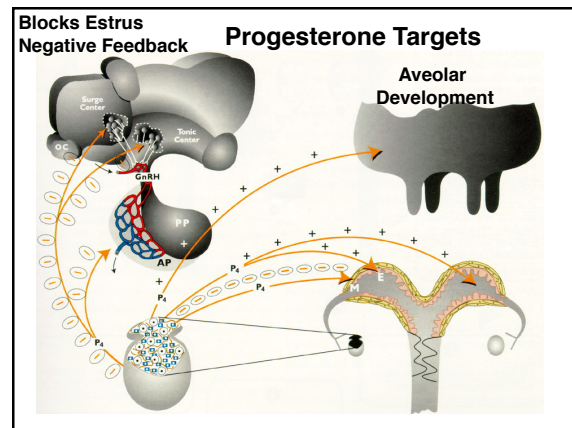
Luteal Tissue

- Large cells from granulosa
- Small cells from the theca interna



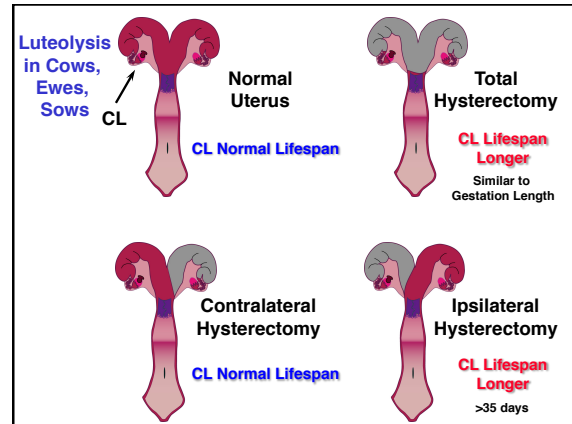
Functional Capability of CL

- the number of luteal cells
 - large cells undergo hypertrophy (3 fold)
 - small cells undergo hyperplasia (5 fold)
- vascularization of CL
 - Initiated by angiogenic factors from follicle
 - Vascularity effects CL steroid synthesis and delivery of hormones
- Insufficient CL function
 - Failure to maintain pregnancy
 - Important in domestic animals



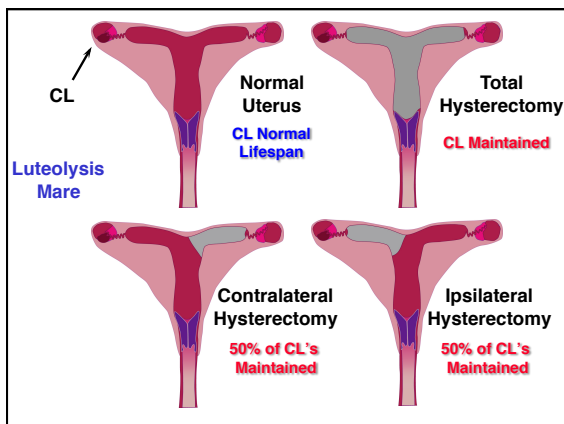
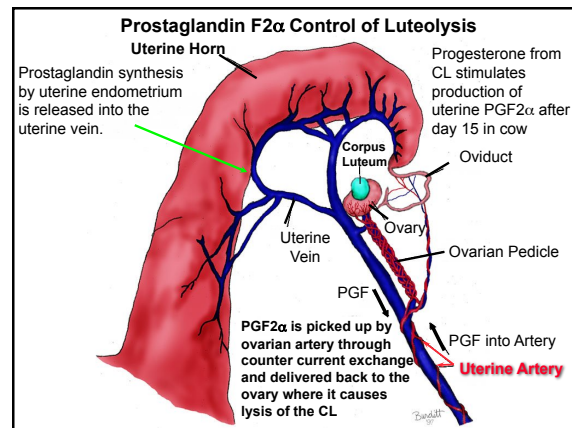
Luteolysis

- Uterus
- $\text{PGF}_{2\alpha}$
- Oxytocin

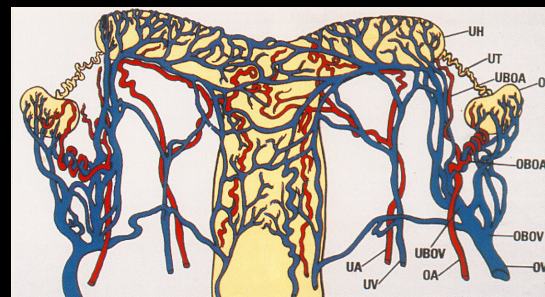


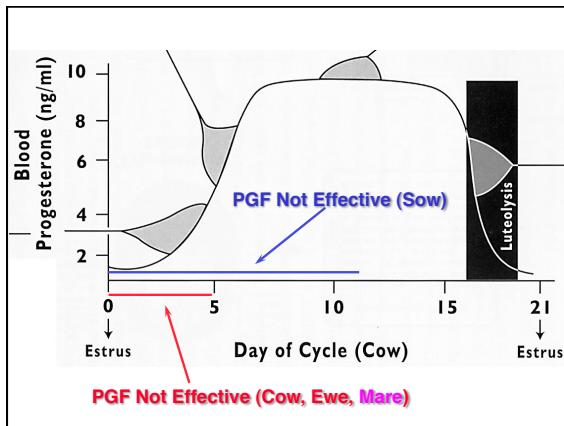
Luteolysis

- Uterus
- $\text{PGF}_{2\alpha}$
- Oxytocin



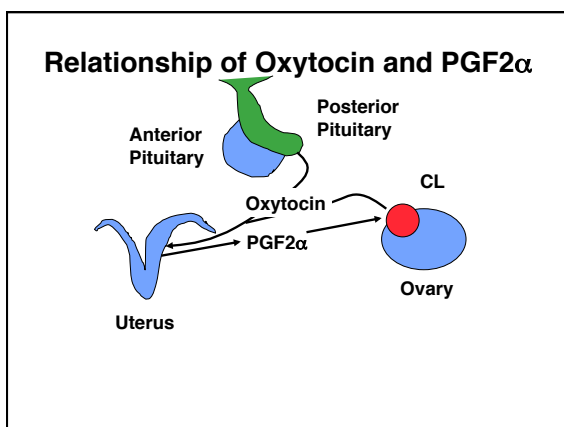
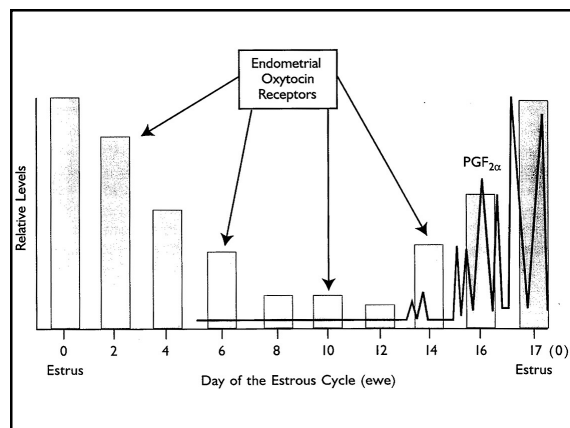
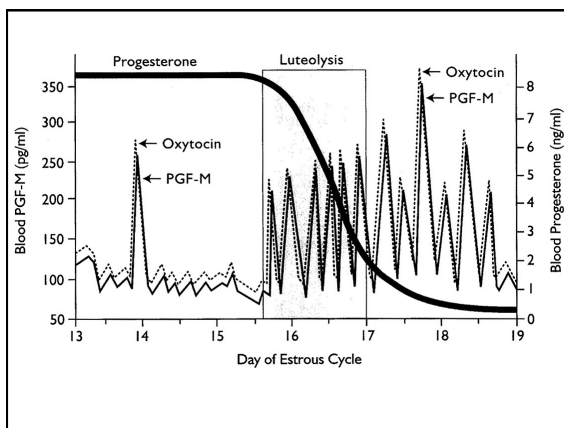
Blood Supply to Uterus and Ovary in the Mare





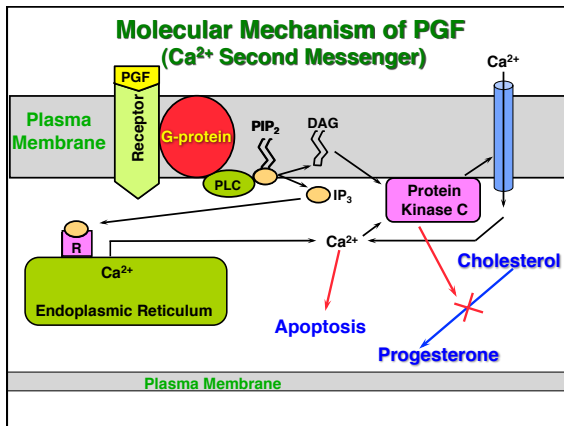
Luteolysis

- Uterus
- $\text{PGF}_{2\alpha}$
- Oxytocin



Luteolysis

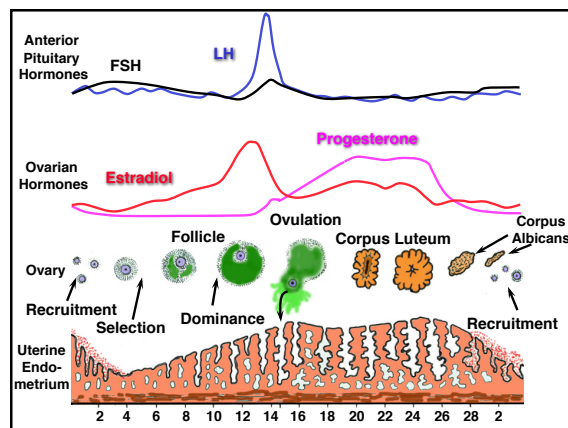
- decreased blood flow
- cellular response
 - apoptosis
 - progesterone synthesis
- Immune response
 - Lymphocytes
 - Macrophages



Luteolysis

- decreased blood flow
- cellular response
 - apoptosis
 - progesterone synthesis
- Immune response
 - Lymphocytes
 - Macrophages

Menstrual Cycle



Luteolysis in the Primate

- Does not require the uterus
- CL lifespan in the human is 12-14 days unless pregnancy occurs
 - In the absence of pregnancy, CL self destructs
 - Possible intra-ovarian oxytocin receptors and PGF_{2α} production
- Menstruation
 - Drop in P₄ and E₂
 - Endometrial PGF_{2α}, vasoconstriction, necrosis
 - Endometrial inflammation and tissue degeneration