The normal physiology of the sow

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Agenda

- **Know the normale physiological conditions**
  - Inseminationdepartment
  - Gastationdepartment
  - Farrowingdepartment

– Respond at inappropiate behaviour or disease!

What is our goal in the sowherd?

- Effective reproduction and high performing sows

L Pedersen 2019

The reproduction of the sow

- Cycle : 21 days
- ”Not-seasonal” dependent, polycyclic

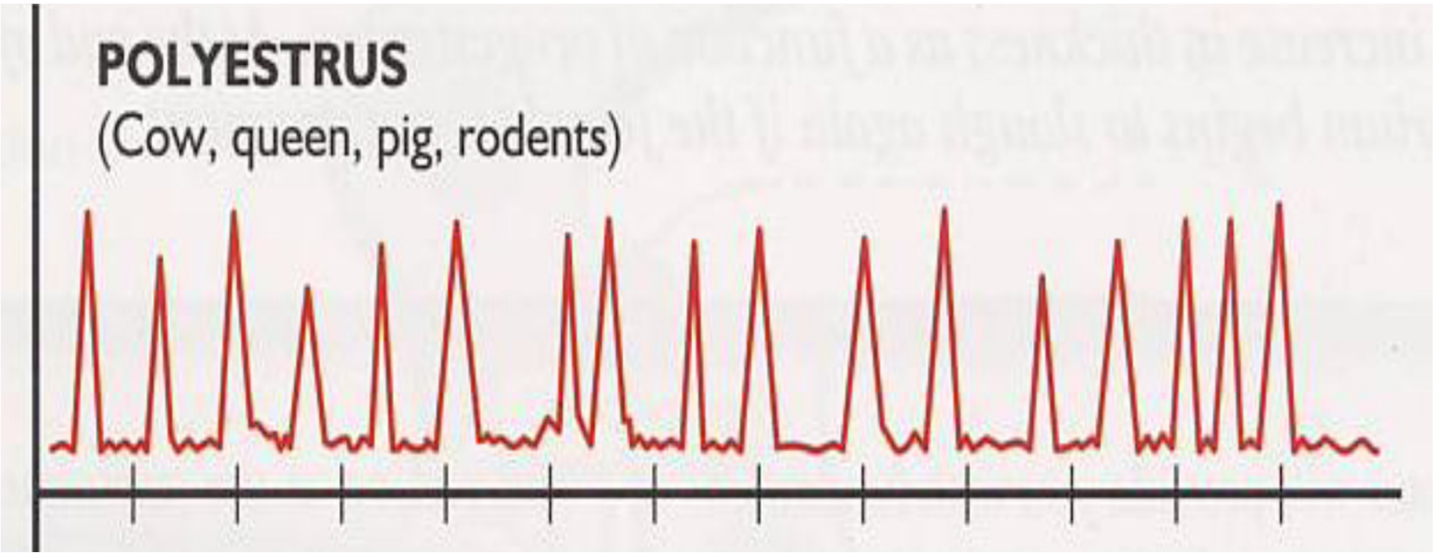
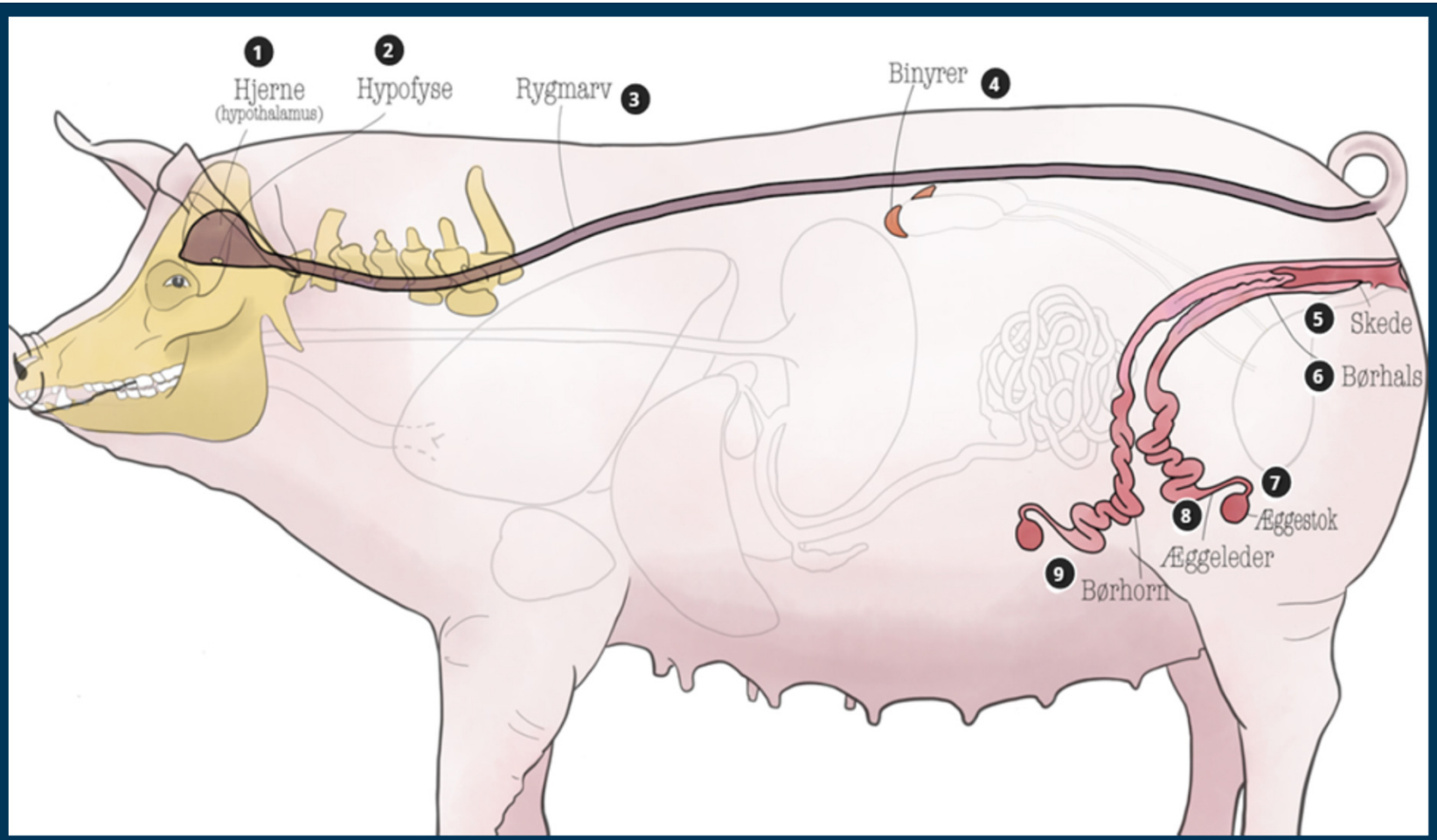
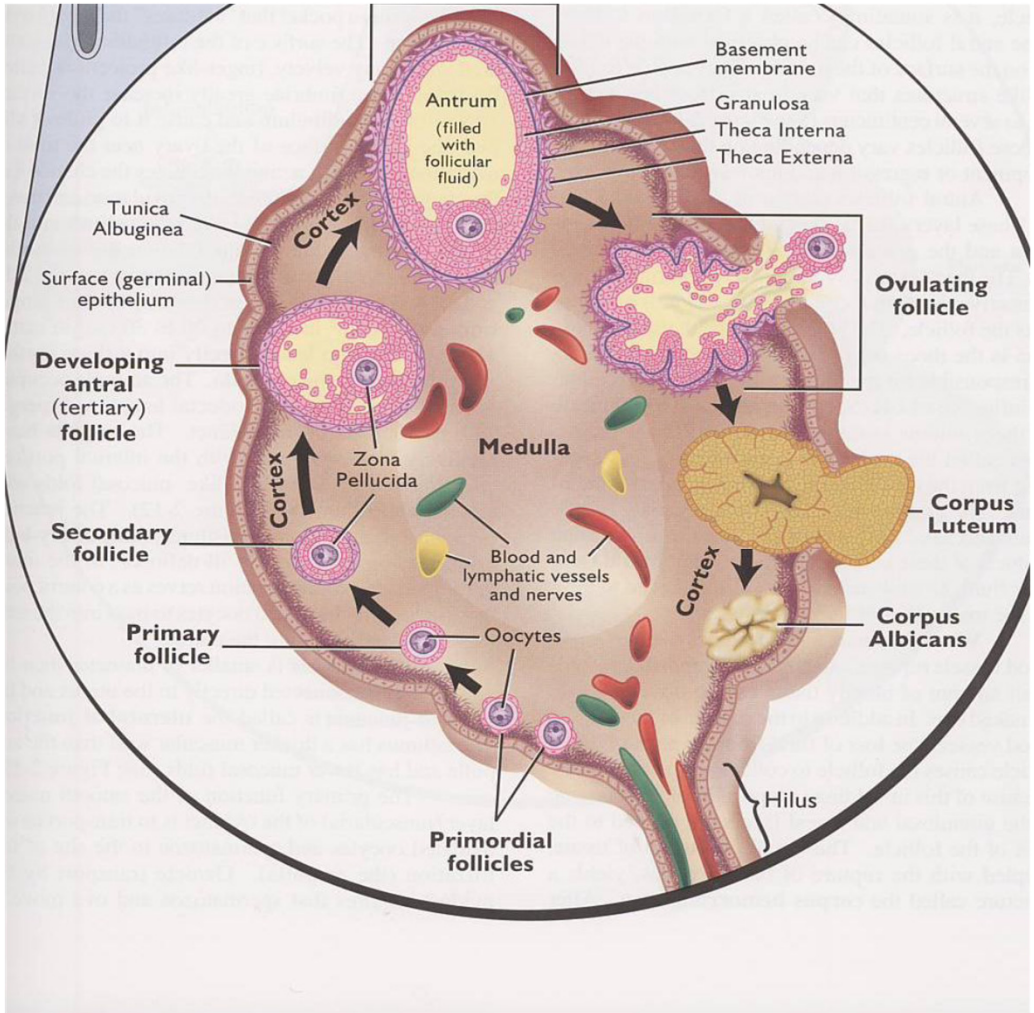


Illustration fra Senger: Pathways to pregnancy and parturition

Hormones are controlled several places



Ovary



- Overy in different stages in the cycle
- Follicles matures
- Ovulation
- Corpus luteum is formed

Illustration fra Senger: Pathways to pregnancy and parturition

Normal cycle

PROGESTERONE

ESTROGEN

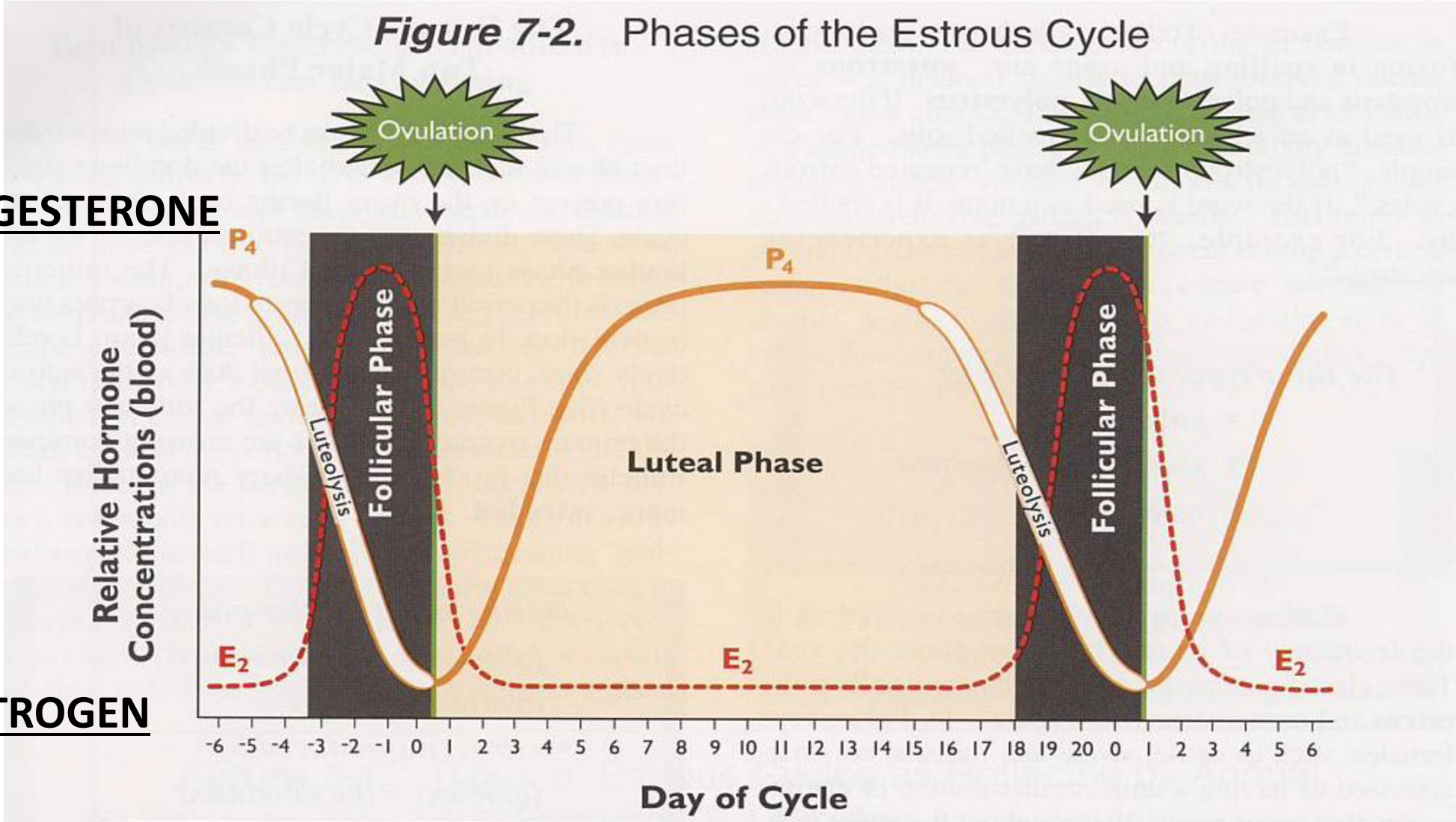


Illustration fra Senger: Pathways to pregnancy and parturition

What happens?

- No pregnancy:
  - Corpus luteum is removed
  - New cycle
- Pregnant:
  - The fetus ”gives a signal”
  - Corpus luteum persists → Progesteron maintains the pregnancy
- Farrowing:
  - The fetus´ increases the level of stress hormon → corpus luteum passes away → the farrowing will start

What can go wrong?

- Stress in the pregnancy → Abortion or early farrowing
    - Injurys/pain
    - Fight/movment
    - Lack of feed
    - Endotoxins from bacteria

Normal bodytemperatur in sows

SOW	
24 hours prepartum	38.7
Birth of first pig	39.4
24 hours postpartum	40.0
1 day postweaning	38.6
BOAR	38.4

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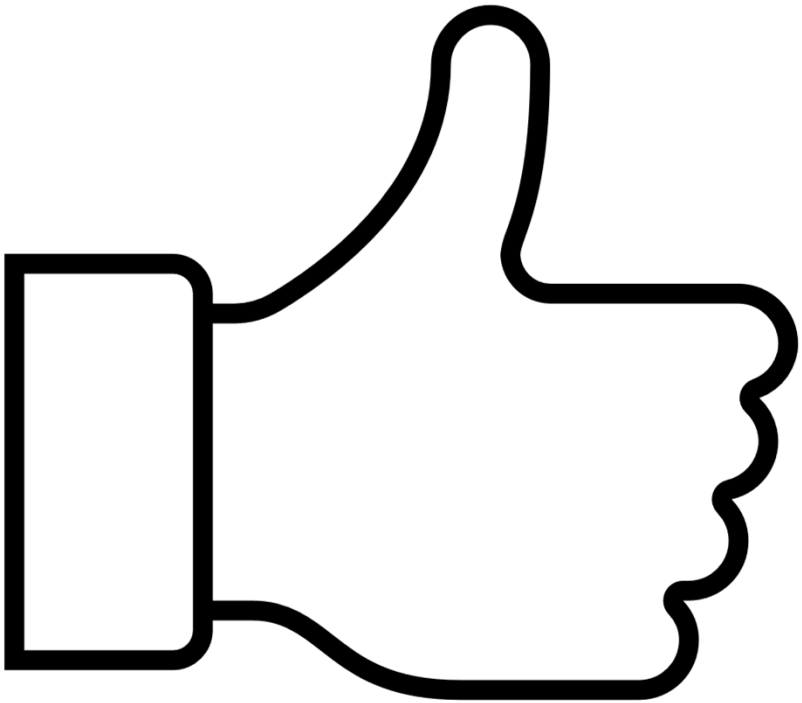
If everything is going well

- Progesteron decrease → prolactin increase (udder matures, colostrum)
- Fetus movement cause increased level of oxytocin causing a successful farrowing
- A well etablished lactation can begin ....



Colostral phase (Colostrum)

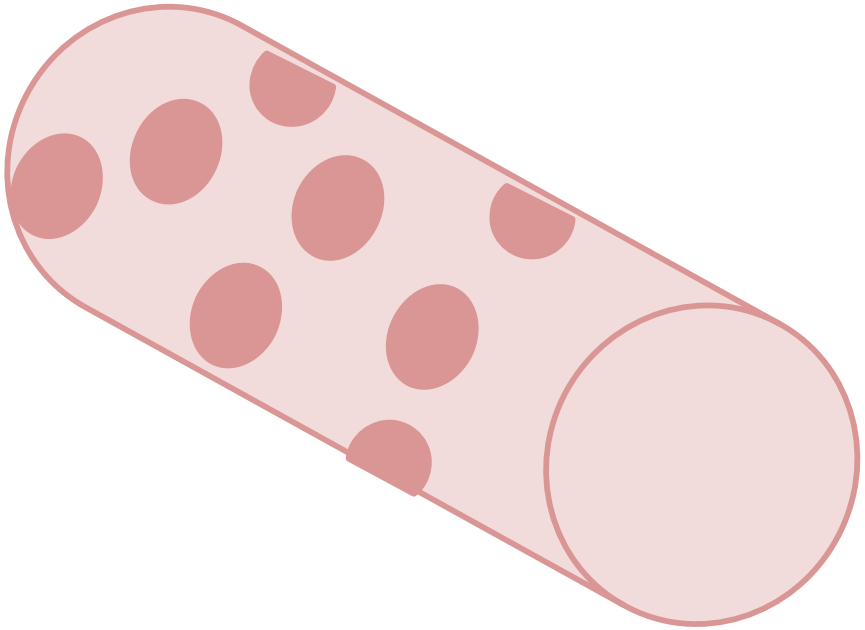
- From farrowing – 12 hours ahead
- Milk – freely availble

Time after farrowing (hours)	Proteins/antibodies (g/L)
1 h.	157 g
6 h.	130 g
12 h.	9 g

- Antibodies can pass the intestine (No passing antibodies in the fetal stage)

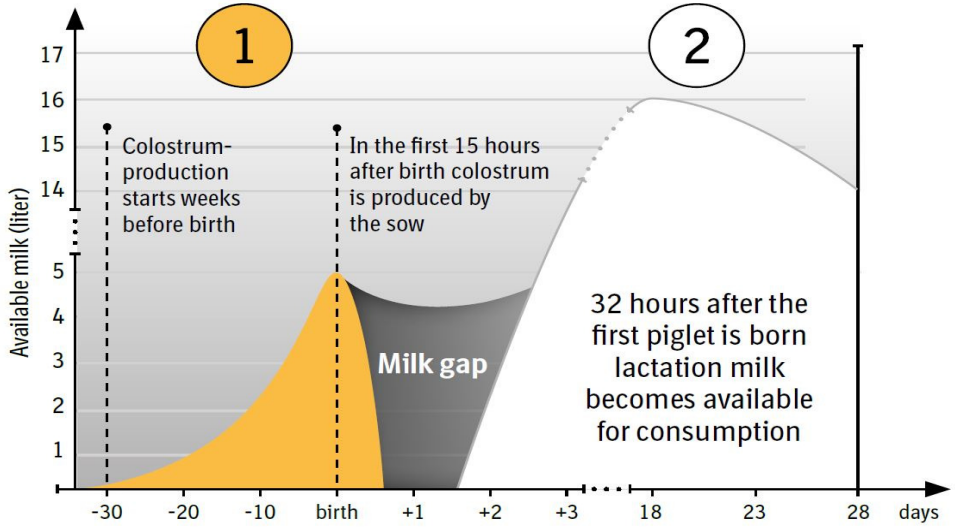
Colostrum

- Antibodies – large molecules
- Gaps in the intestinal wall
- Gab closing after 12-48 hours
- Goal: 250 ml colostrum/pig
- 40-60 ml colostrum ≈ 1 h. lactation



Transitional phase– critical!

- Colostrum expire after 12-24 h.
- Milkproduction 48-72 h.
- Lactation ca. 17 times per day
- The teat order will be etablished



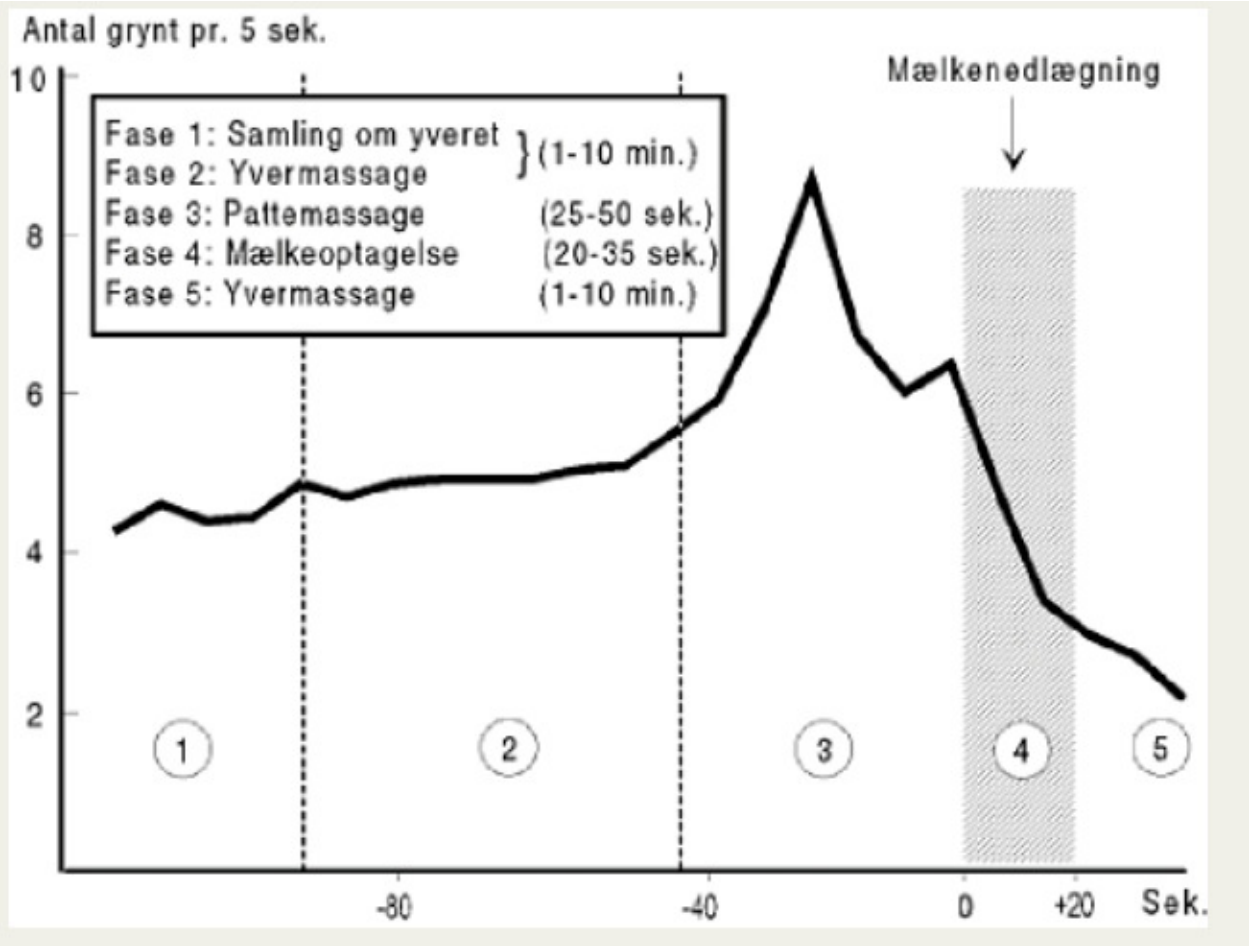
Figur fra Boehringer Ingelheim : www.preventionworks.info

2. Caretaking phase

- Number of lactations doubles
  - Day 10 ca. 35 lactations
  - The pigs regulate the yield
  - Yield proportionel with number of pigs

	amount the pig consume pr. lactation (g)
1. Lactation week	29 g
2. Lactation week	53 g

Lactation in phases



- Oxytocin and prolactin increases by each lactation

Figur fra svineproduktion Forplantning (svineproduktion.dk)

Lactation video

Video from V Moustsen SEGES

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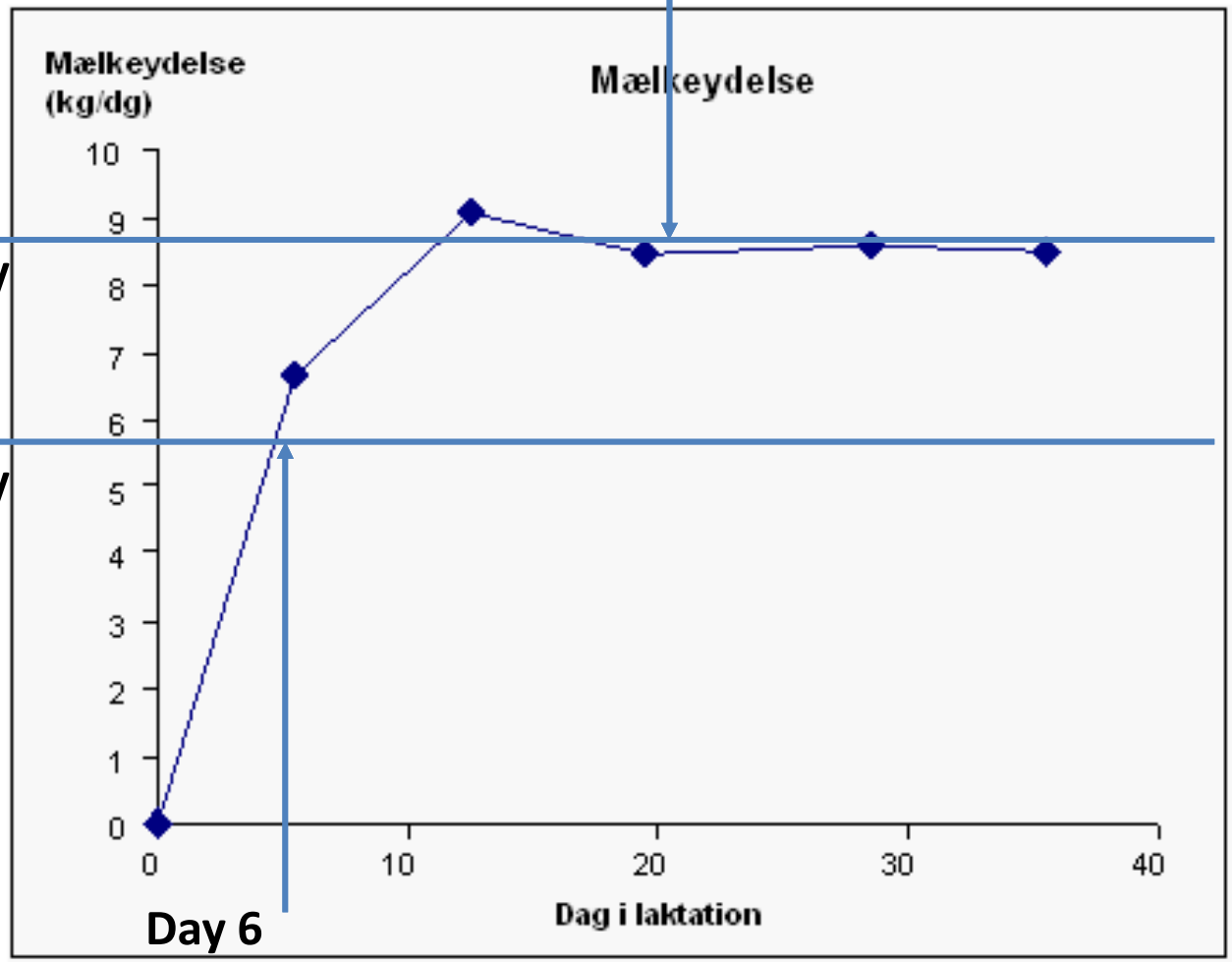
Milkproduction

Day 21
1 step: Sow for newborn

Day 21
Milkprod. 8,8 kg/day

Day 6
Milkprod. 5,7 kg/day

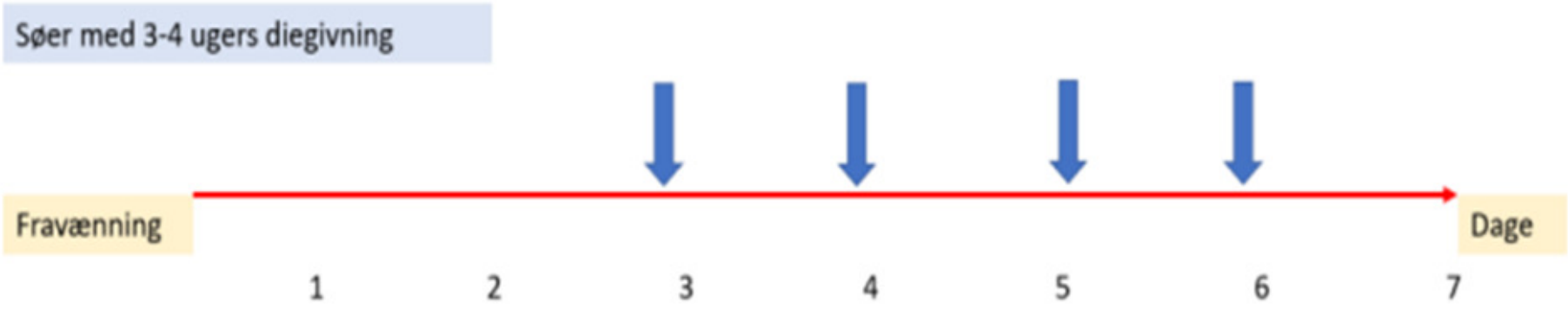


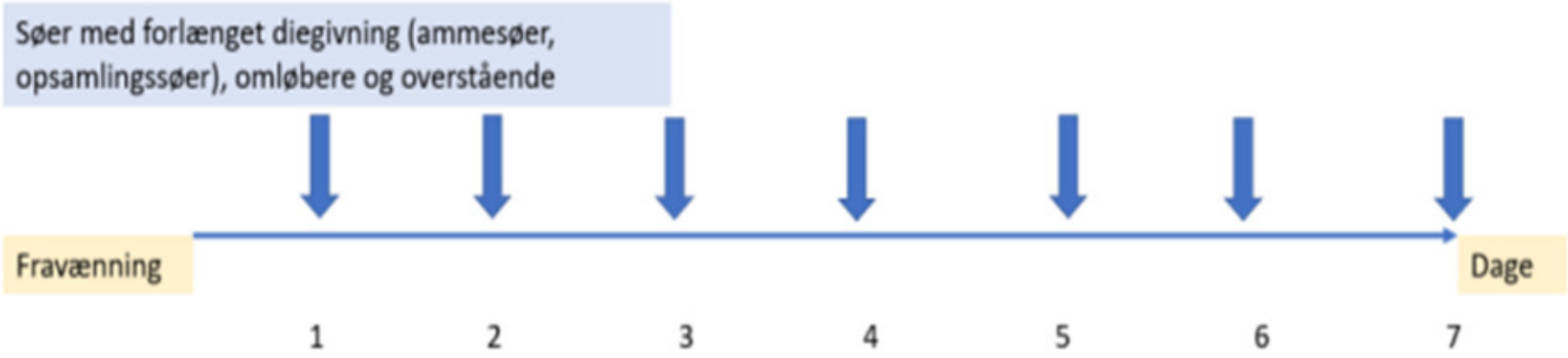
Day 6
2 step: Sow for newborn

Pay attention: nurserysows and collection-sows

- **A sow will not be in cycle when she is lactating (lactation-anestrus) BUT…**
  - Nurserysows (No lactation for 5-12 hours)
  - Sows lactating more then 10 days
  - Sows with small piglets insufficient stimulating

Check sows for heat at following days:





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Take home message

- **The sow is polycyclic**
- **If many sows enter heat in the farrowingsection pay attention to nurserysows, sows for collected pigs and sows with the smallest piglets**
- **Stresshormon is <u>only</u> usefull related to farrowing**
- **NO STRESS!**
- **Temperatur variation around farrowing is normal**
  - Not all sows need antibiotics
- **Colostrum avalible for 12 hours – 250 ml/pig**