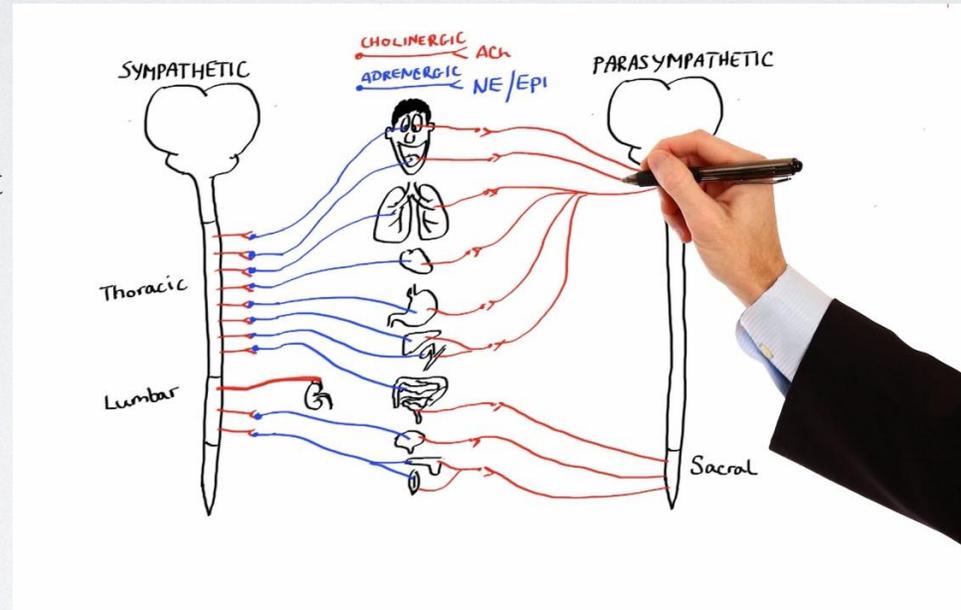


FIGHT OR FLIGHT OR ?

Autonomic Nervous System (ANS)

- Acceleration of heart rate and breathing
- Flushed skin or pale skin (or an alternating of both)
- Slowing digestion
- Constriction of blood vessels in many internal organs
- Liberation of metabolic energy sources (particularly fat for muscular action)
- Dilation of blood vessels for muscles
- Dilation of pupil
- Inhibition of erection
- Loss of hearing
- Loss of peripheral vision
- Disinhibition of spinal reflexes
- Shaking



- Constriction of pupils
- Decreased heart rate and breathing
- Drop in the blood pressure
- Stimulation of digestive glands
- Stimulation of secretion of saliva
- Increased blood flow to the reproductive organs
- Feelings of safety and wellbeing

SEXUAL STIMULI

- Among all stimuli the olfactory and visual stimuli is most important for the sexual arousal.
- The courtship behaviors will end in immobile stance/willingness to mate by the female, which stimulates the significant sexual arousal in male animals.
- Lordosis behavior or presenting, is the naturally occurring body posture for sexual receptivity to copulation present in most mammals including rodents, elephants, and cats.



ERECTION & EJACULATION

Stimulation

Somatic

Sympathetic

Erection

Parasympathetic

Emission

Sacral Splanchnic

Pudental

Ejaculation

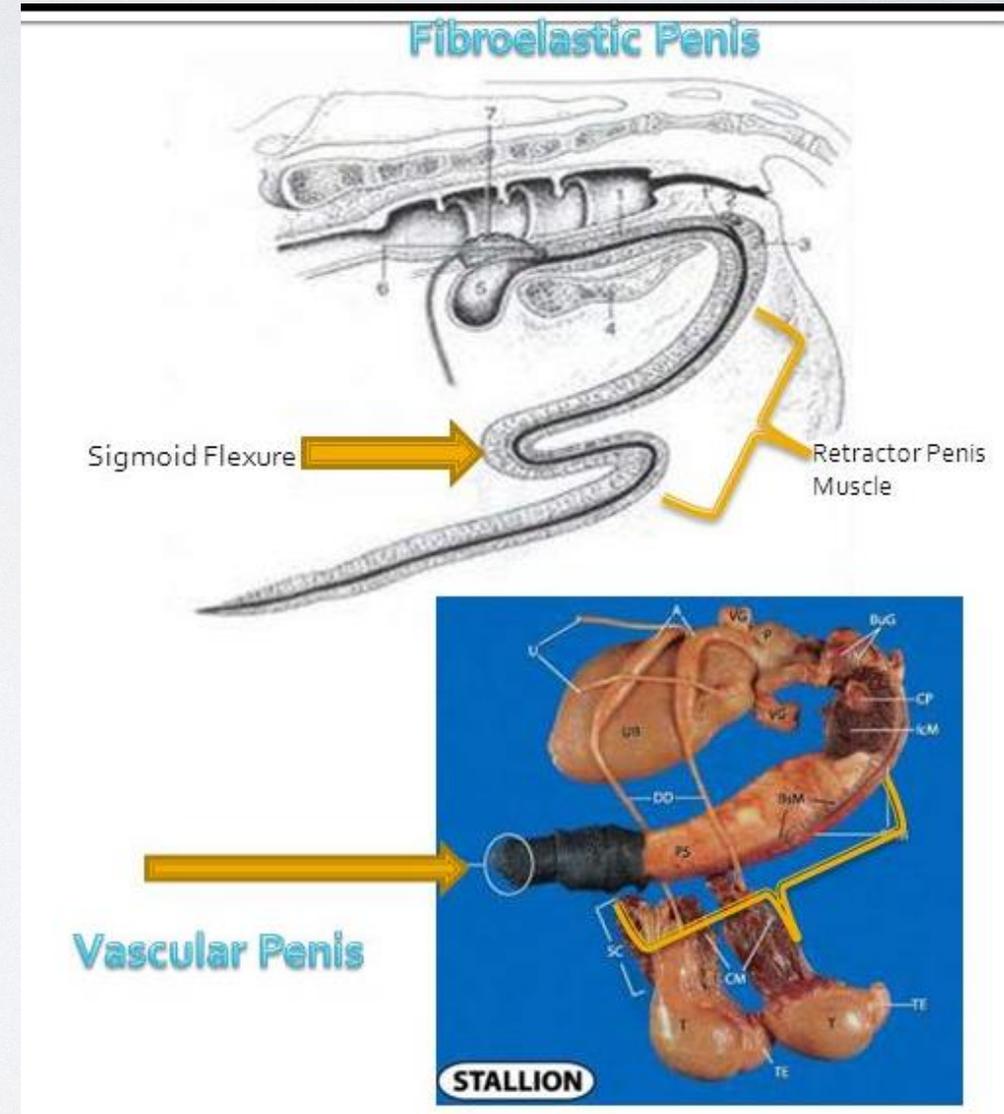
Pelvic Splanchnic

ERECTION OF THE PENIS

The penis of bull, ram and boar is fibroelastic hence during penile erection the diameter of penis do not increase much

Penile protrusion

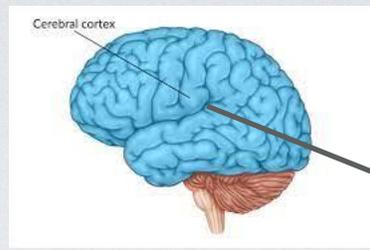
The erection will lead to the separation of the glans penis from the prepuce and protrusion of the penis. During this period, the dribbling of the secretions of Cowper's gland are noticed in bulls.



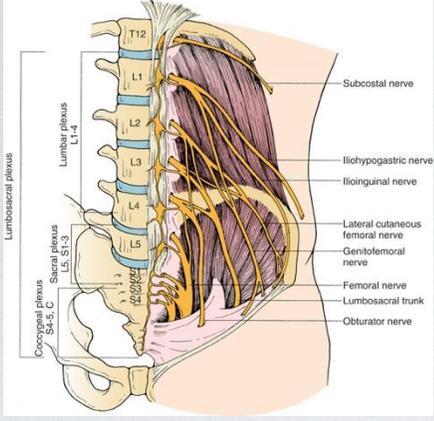
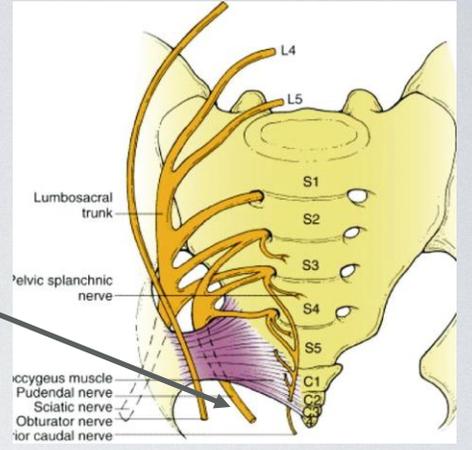
Erection

Emission

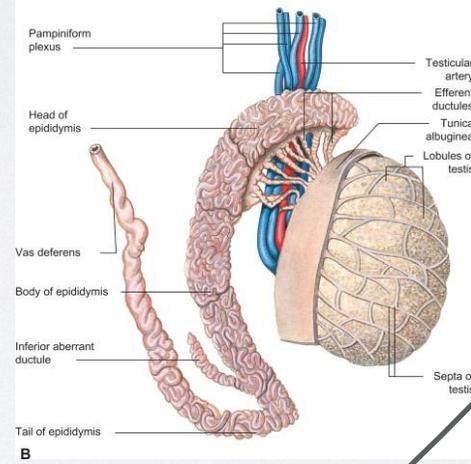
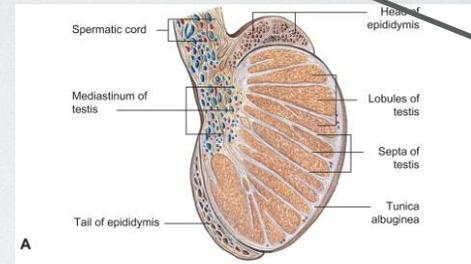
Ejaculation



Parasympatetic Stimuli

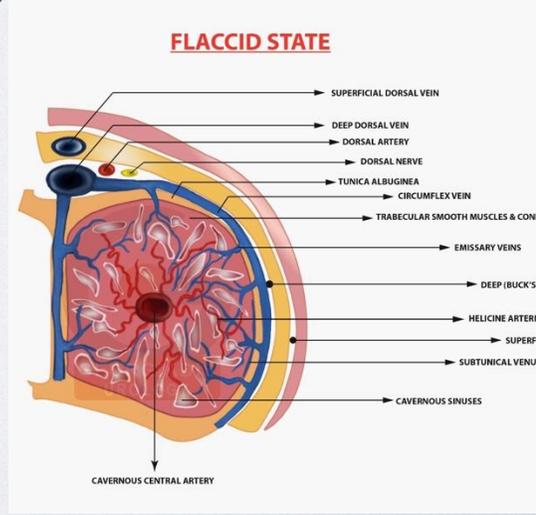
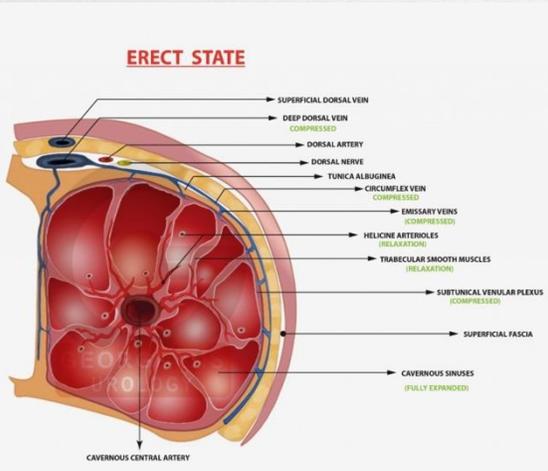
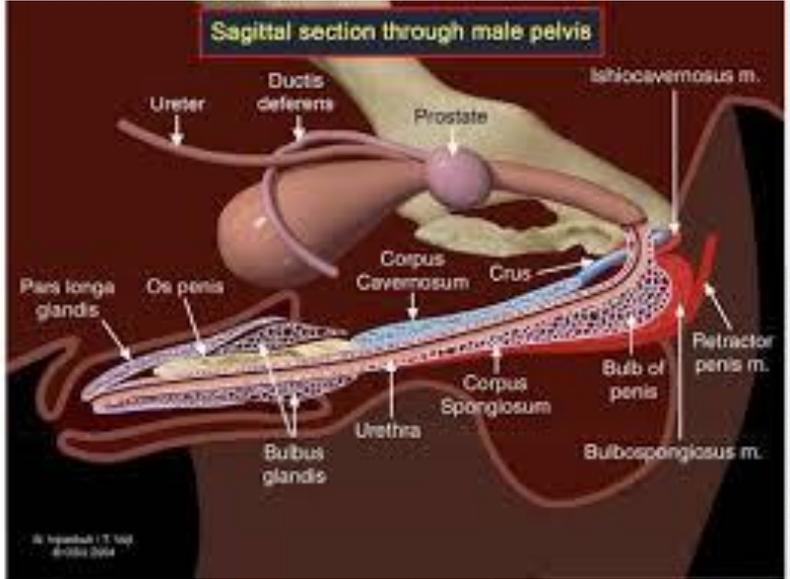


Inf. Mes. gang.

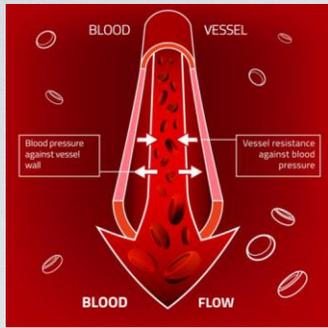


S 2-4

T 12- L2



Pelvic Nerve



Guanyl Cyclase
NO

Ach

ERECTION AND PROTUSION

Blood flow in penile artery



Corpus cavernosum



Dilatation of corporal sinusoids



Elevated intra-penile pressure



Stretched and rigid penis



Erection



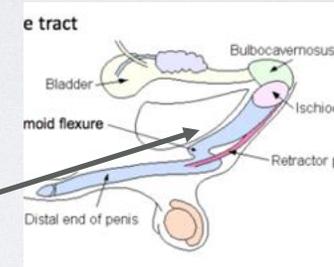
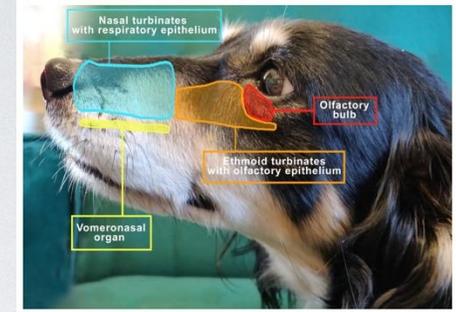
Stimulation



Relaxation of retractor penis muscle



Relaxation of flexure sigmoid





COPULATORY BEHAVIOUR

Social & hierarchy

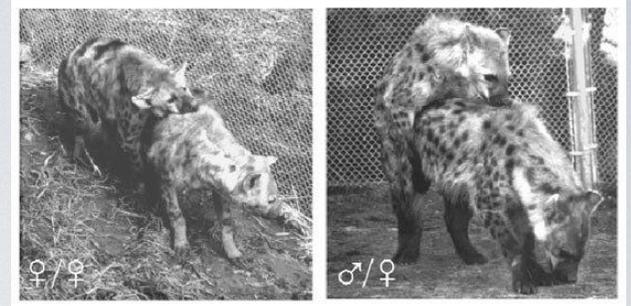
Homosexually

Mounting Behavior

Mammals



Common in same sexes



To attract the males

The sexually stimulated active male mounts the female

There could be possible false mounting behavior and the preparation of external genital organs (bulbourethral and bartolin gland) secretions.

Mounting movement of hind limbs and contractions of rectus abdominis muscle will align the penis horizontally and vertically to seek the vulva for intromission

The male will fix the fore limbs around the female body and will perform the rhythmic thrusts



INTROMISSION

Successful entry of the penis into the vagina is called as intromission.

- The thrusting movement of the pelvis will help intromission.
- The vulvar moisture and heat is identified by to and fro movement of the penis and the sensory nerves of the penis is stimulated.
- This is major factor for intromission. Stallion oscillates the pelvis many times, engorgement of penis occurs and finally the intromission occurs



EJACULATION

Specie	EJACULAT VOLUME (ML)	SITE OF DEPOSITION	MATING TIME
BULL	2-8	ANTERIOR VAGINA, EXTERNAL CERVICAL OS	1-3 SN
STALLION	30-120	CERVIX AND UTERUS	20-60 SN
RAM/BUCK	0.8-2	FORNIX VAGINA	1-2 SN
PIG	200-250	UTERUS	5-30 DK
DOG	1-60	VAGINA	20-30 DK
CAMELID	1-12	SOME INTRAUTERINE AND CERVICAL	10-20 DK

EJACULATION

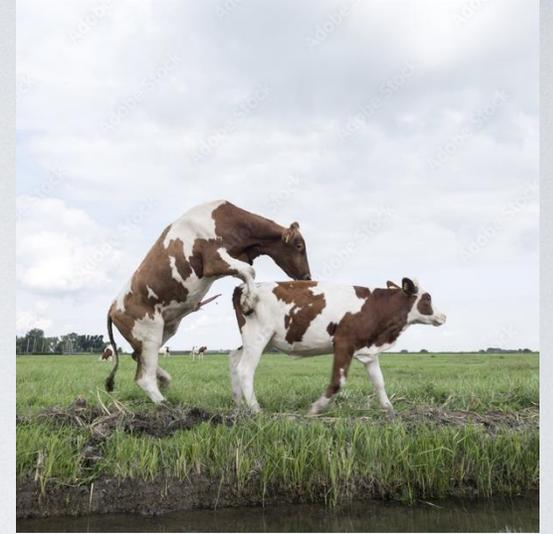
Pelvic thrusts ends
with ejaculation

Short ejaculation
Bull, Ram and
Buck (1-3 sec)

Long ejaculation (30
min) Dog,
alpaca ve camelids

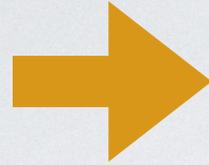
Mid-ejaculation (20 sn-1
min) aygır

While temperature is very important for bull
and ram, pressure is very important for
ejaculation in stallion.



POST COPULATORY BEHAVIOR

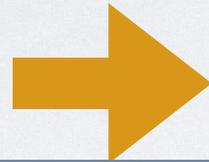
Dismounting



Following ejaculation the male dismounts the female and penis is withdrawn in the prepuce

Post coital play is rare in farm animals

Refractory Behaviour

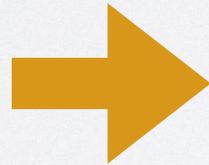


Resting period

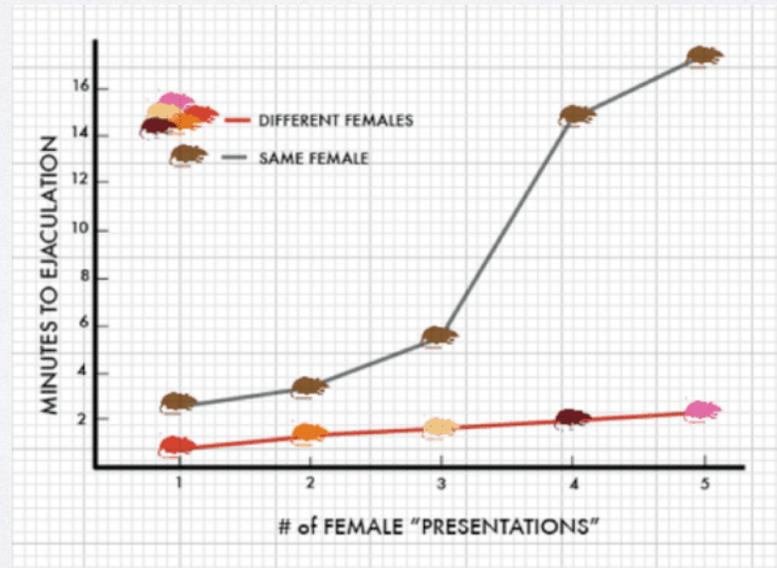
For semen collection try to minimize

Memory !!

Coolidge effect



Restoration of male mating behavior with replacement of novel female

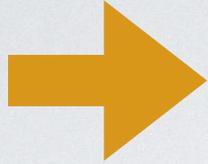


The power of estrogen -- male snakes attract other males

Male rats, for example, are inactive but produce an ultrasonic vocalization after ejaculation.

PUBERTY AND SEXUAL MATURITY

Puberty



Puber



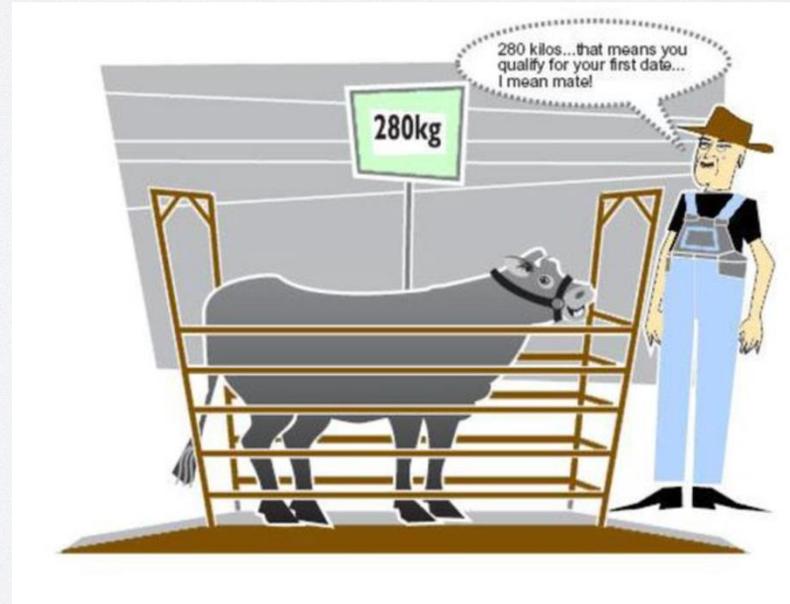
In front of the pelvic area (Covered with hairs)



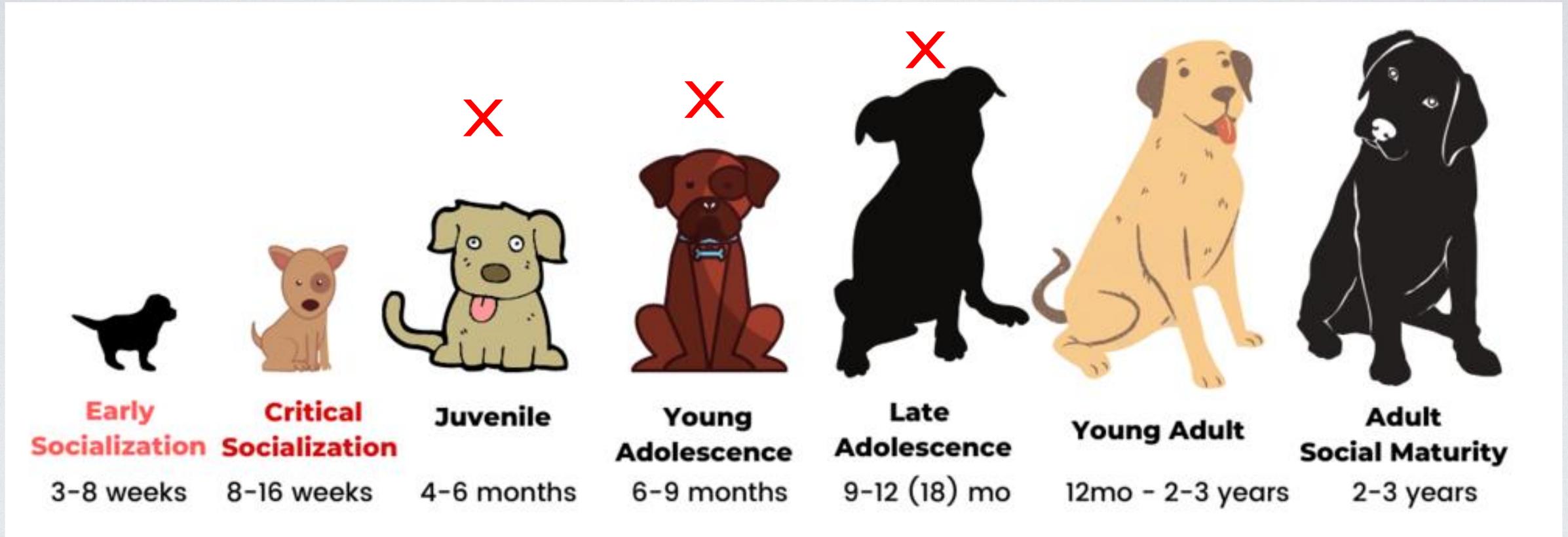
Puberty in male animals is defined by Lincoln [8] as the period when accessory organs and secondary sexual characters develop under the influence of the testes and the animal first becomes fertile.

Sexual Maturity

Age at which the male obtains full reproductive capacity



WHEN TO BREED ?



PUBERTY AND SEXUAL MATURITY

Hypothalamus controls the puberty in animals

Two center in the hypothalamus

* Tonic center

* Surge center

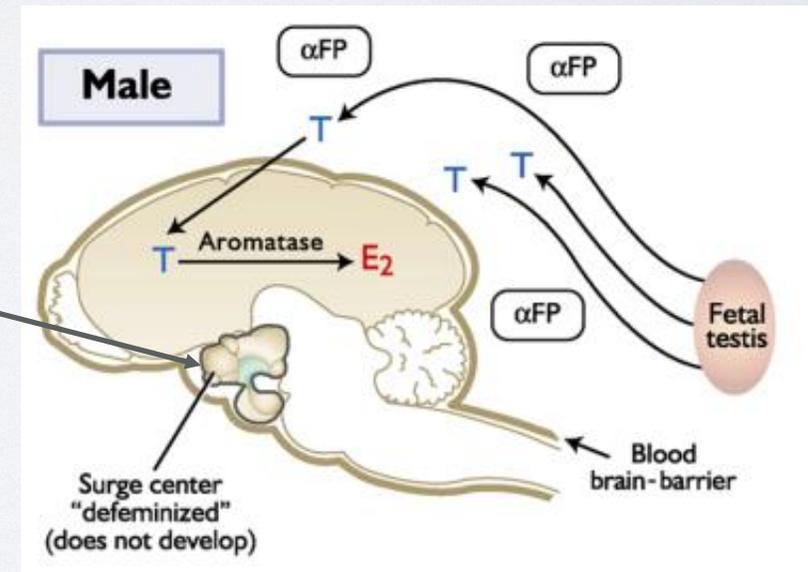
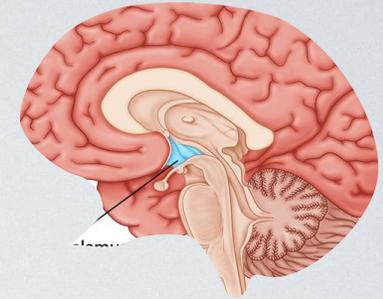


Does not developed due to de-feminisation by testosterone

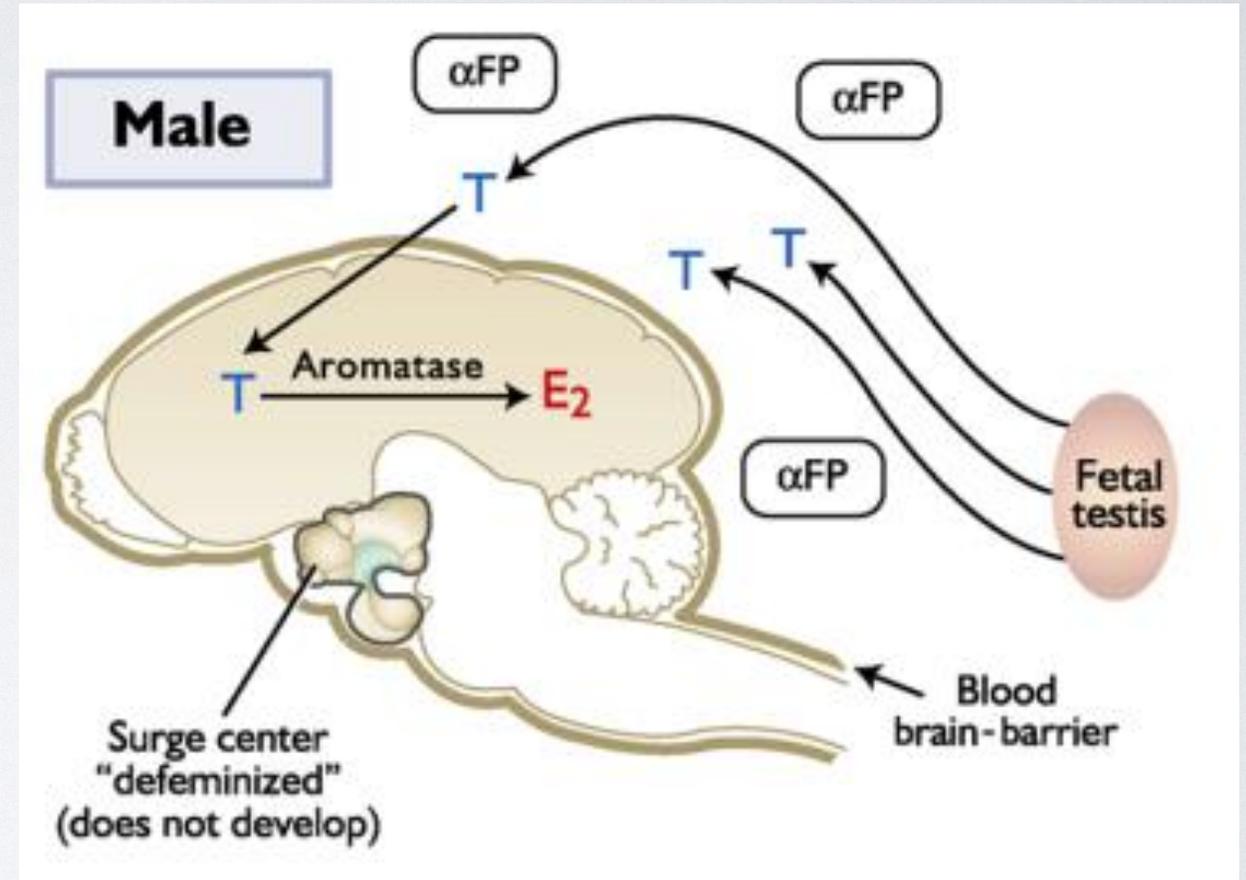
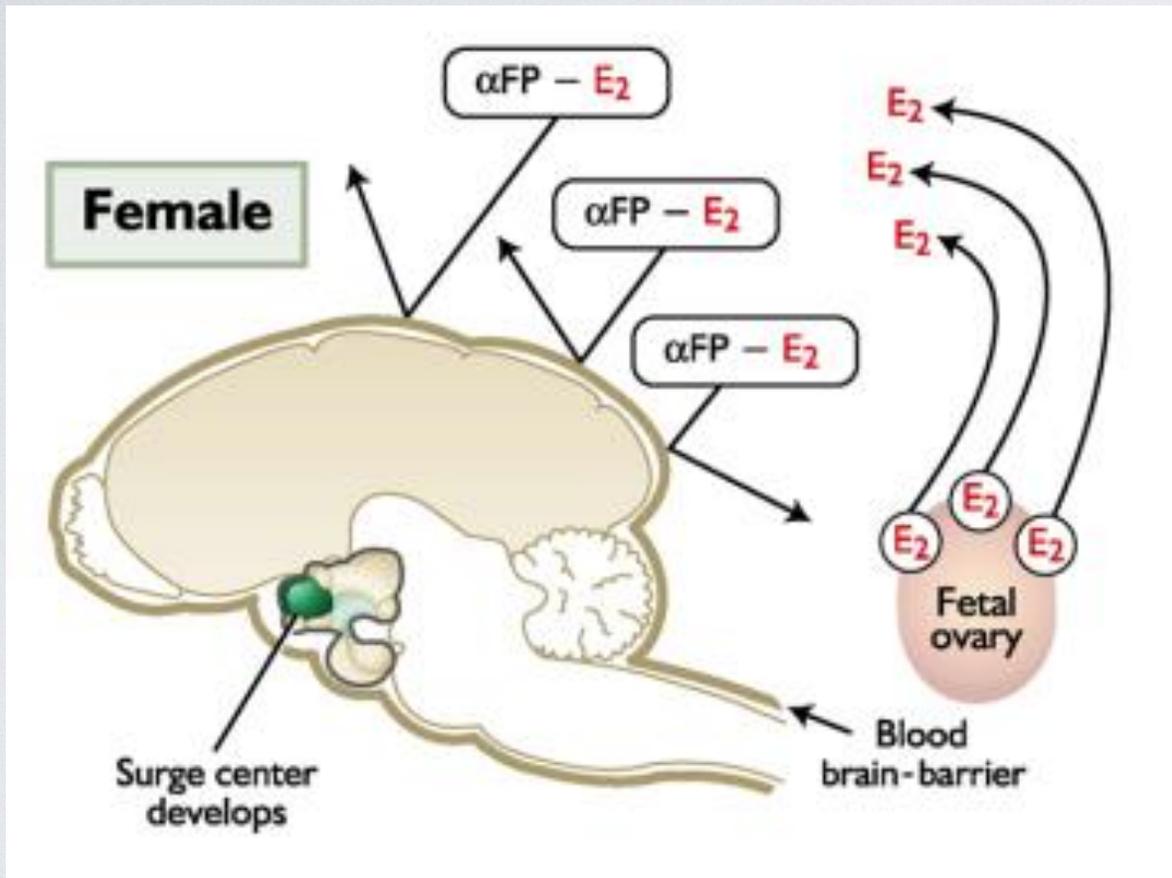


Aromatase

Ostrodiol



PUBERTY AND SEXUAL MATURITY

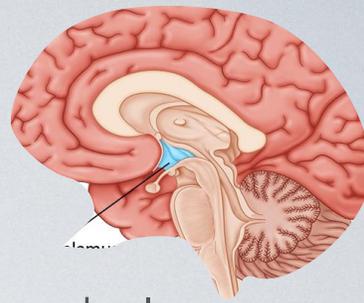


In females, the Oestradiol released from the foetal ovaries is bound to α-fetoprotein which pro

PUBERTY DEVELOPMENT

* Puberty in males is characterized by first appearance of spermatozoa in an ejaculate.

■ The peri-pubertal period begins about 50 days before puberty.



Hypothalamus

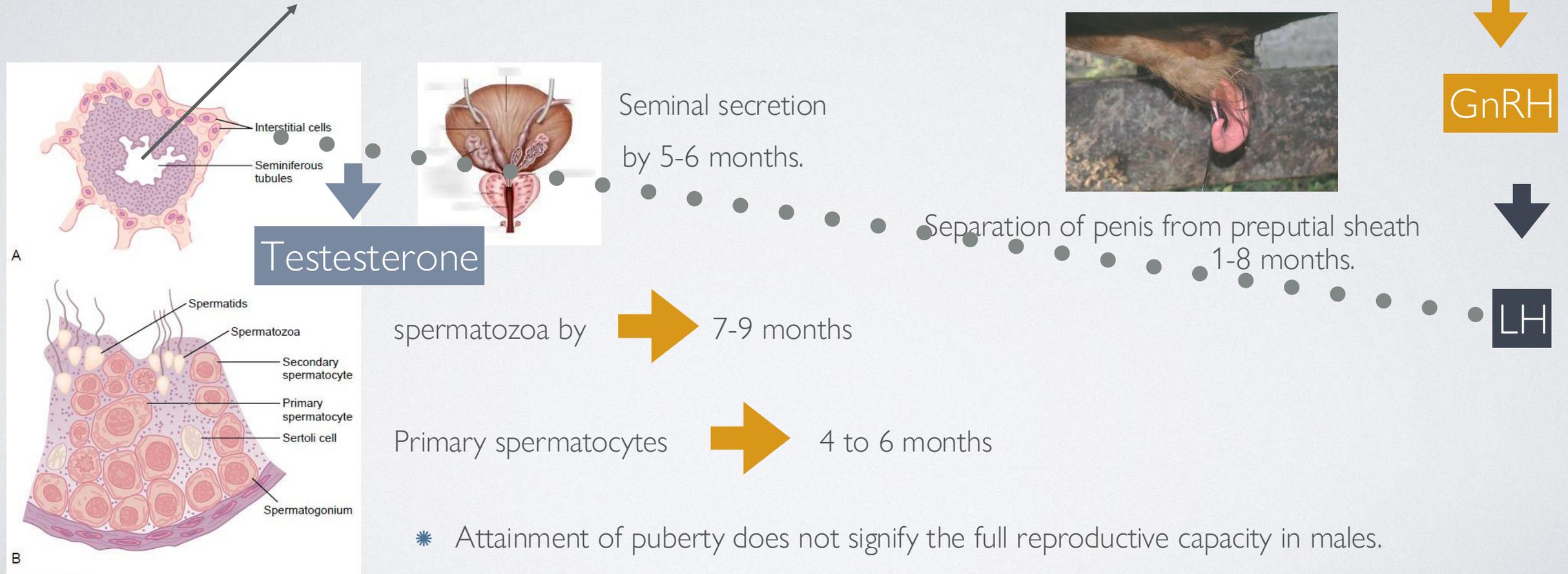
6 to 10 months



GnRH



LH



* Attainment of puberty does not signify the full reproductive capacity in males.

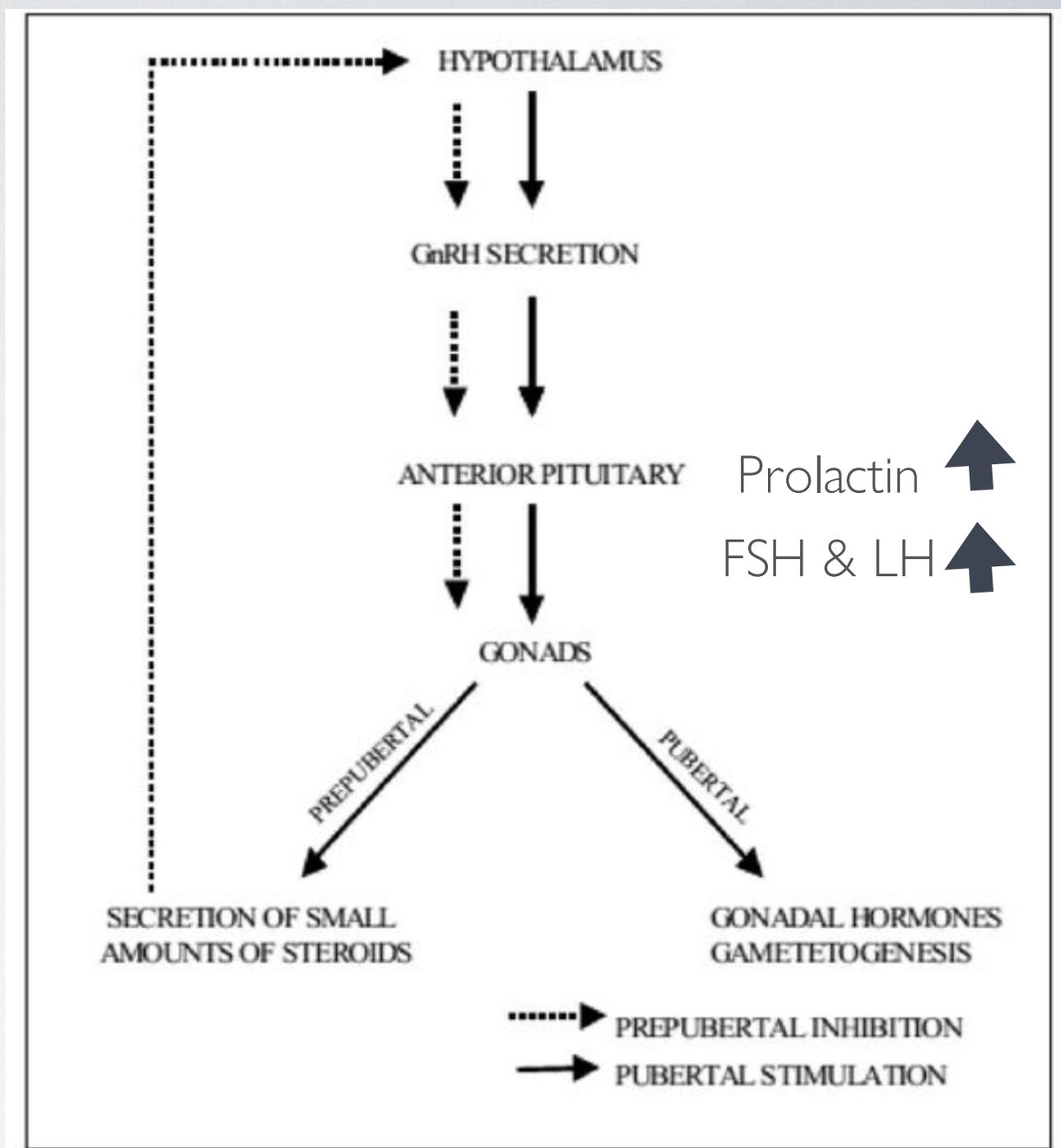
The T values of the males increased with the age from 5-6 months

Prolactin levels increased at the time of first T

A frequency of about 1-2 LH and FSH pulses/8 h

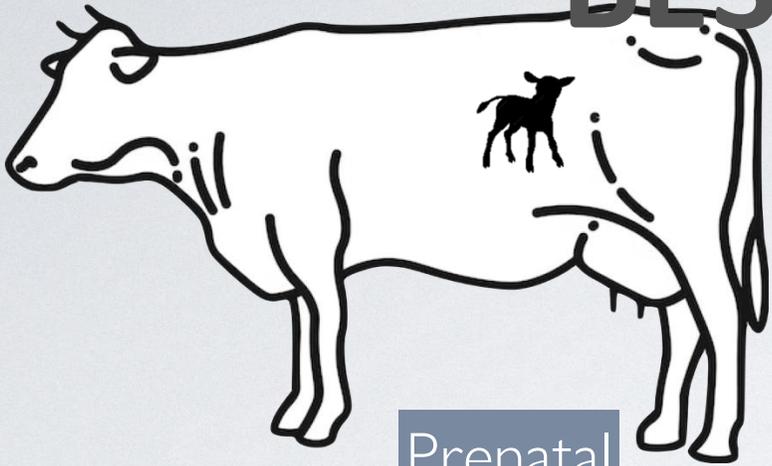
At the month of age 1, 2, 5 and 10

Increased frequency of GnRH, LH and FSH precede puberty



PRENATAL VE POSTNATAL

BESLENME



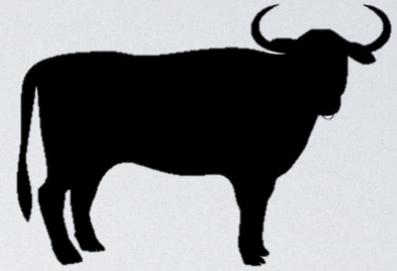
Prenatal



İnfantil



Juvenil

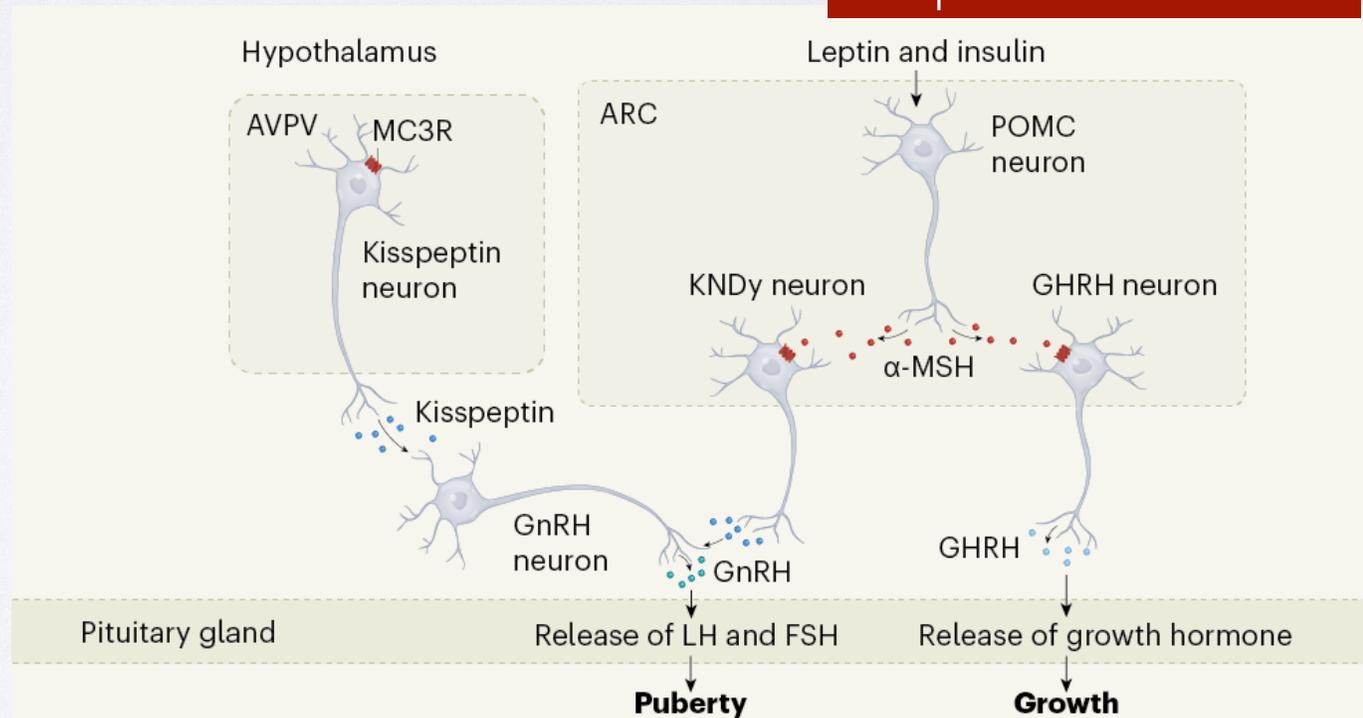


Pubertal

Propiomelanokortin

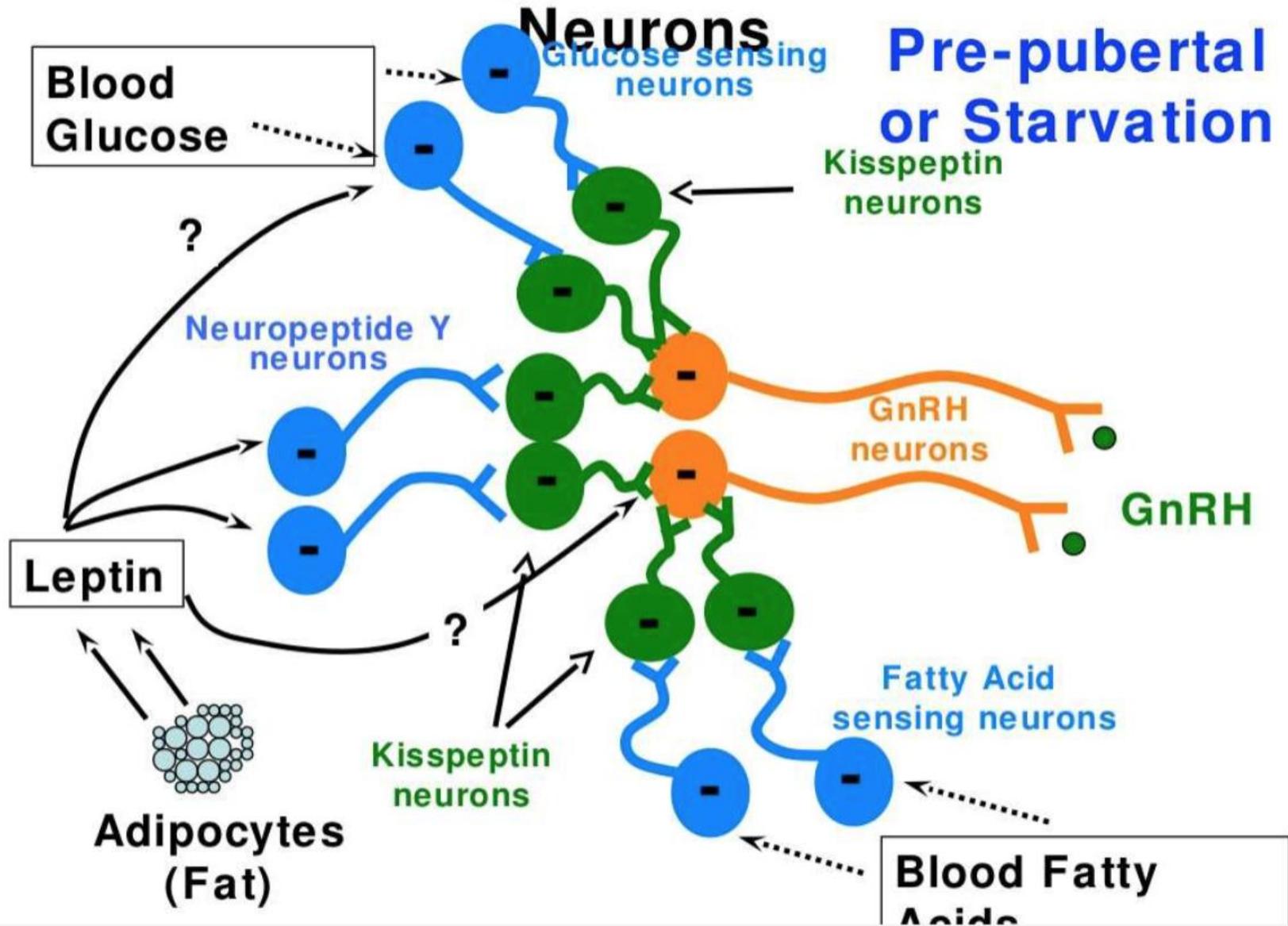
Adequate prenatal and early postnatal nutrition

- Reduced NPY (inhibitory) tone
- Increased POMC (eksitasyon) tone
- Differential DNA methylation
- Increasead GnRH ve LH pulse frequency,
- Advanced pubertal maturation

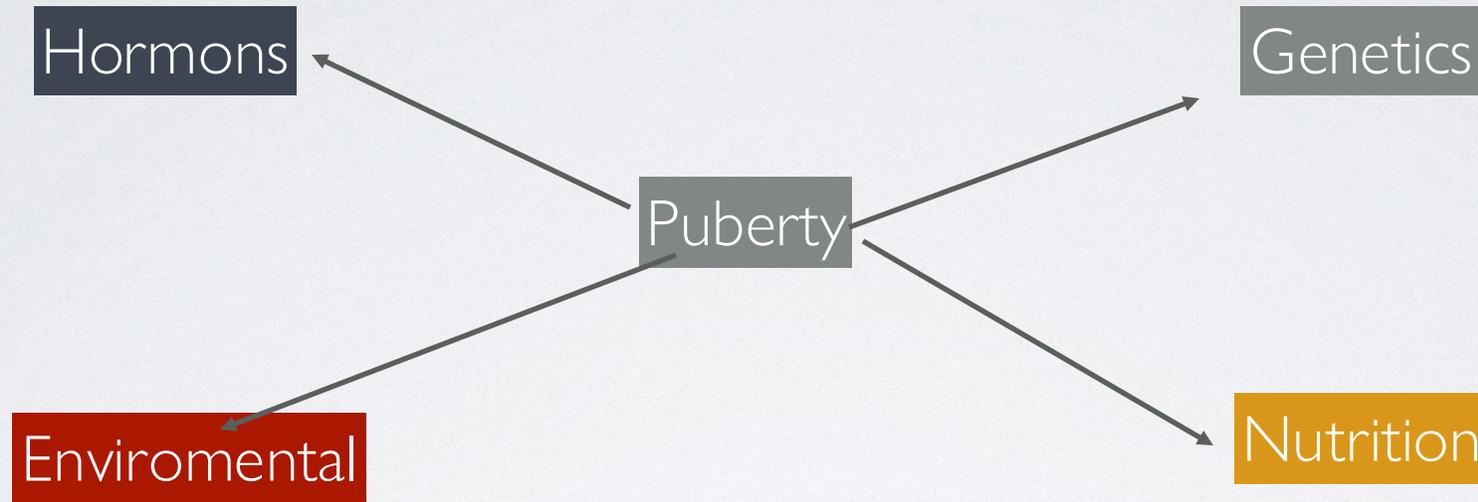


Metabolic Signals Influence GnRH

**Pre-pubertal
or Starvation**



FACTORS EFFECTING PUBERTY



THE AGE OF PUBERTY

Specie	Age of puberty
Bull	9 to 12 Months (range 6-18 months)
Stallion	18 Months (range 12 to 24 months)
Ram & Buck	7 to 8 Months (range 4 to 12 months)
Canine	7 to 10 months (range 5 to 12 months)
Feline (tomcat)	8 to 10 months (range 6 to 15 months)