

Weibliche Geschlechtsorgane  
Menstruationszyklus

Männliche Geschlechtsorgane  
Becken

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# Geschlechtsorgane

**1. Gonaden** – produzieren Geschlechtszellen:

**Hoden** – kontinuierlich, viel

**Eierstock** – zyklisch, wenig (~ 400),

**2. Ausführungsgänge** – mit Schleimhaut bedeckt:

♂ **Wolff-Gang**: paarig

♀ **Müller-Gang** – unterer Teil verschmelzt miteinander → Gebärmutter

*Aufgabe:*

♂ Ausführungsgang für Spermienzellen

♀ Versorgung und Schutz von Fetus

**3. Drüsen:** Hauptmasse von Samen

**4. Copulationsorgan**

Maybe vagina jokes are  
funny and I'm just ovary  
acting.



somee cards  
user card

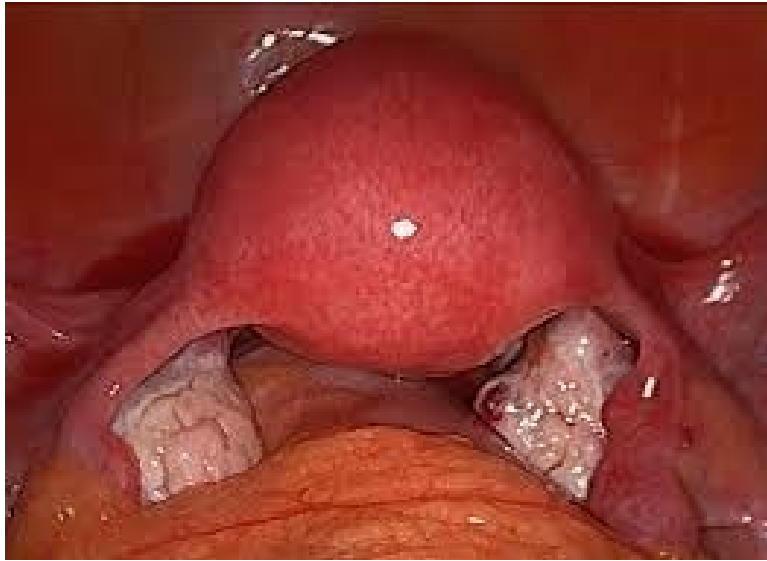
Eierstock  
(*Ovarium*)

Eierleiter  
(*Tuba uterina*)

Gebärmutter  
(*Uterus*)

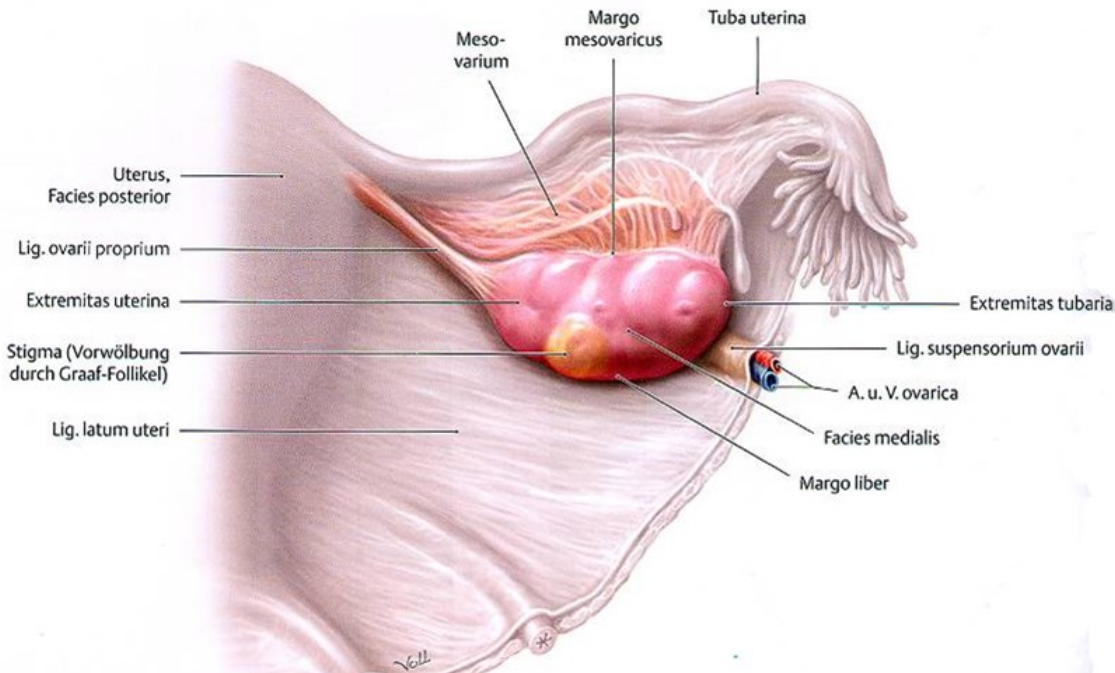
Scheide  
(*Vagina*)

# Eierstock (*Ovarium*)



- mandelförmig
- „intraperitoneal“ – mit Bauchfell (*Peritoneum*) bedeckt

Blutversorgung:  
A. ovarica





1200  $\mu$ m

Peritoneales Epithelium – einschichtiges kubisches Epithel

Tunica albuginea - Bgw

Cortex ovarii - Rinde

Medulla ovarii - Mark

# Eizellbildung

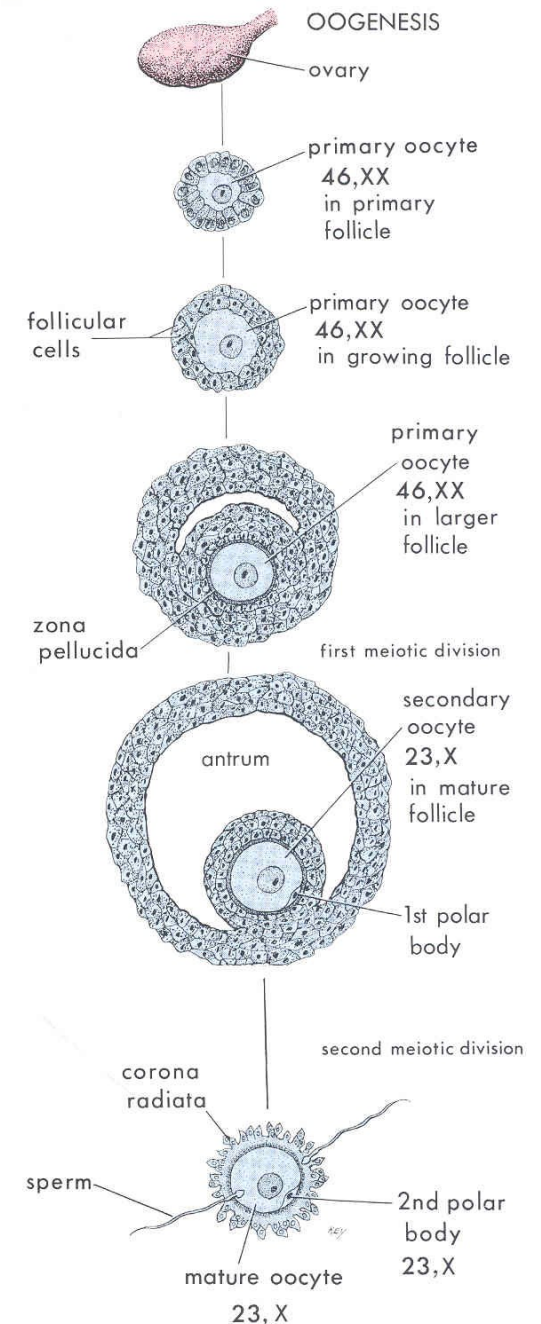
Oogenese:

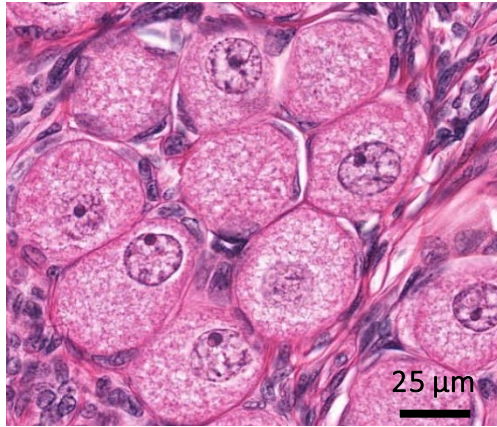
Vermehrungsperiode

während der Fetalentwicklung abgeschlossen  
Urkeimzellen = Oogonien (1 Million)

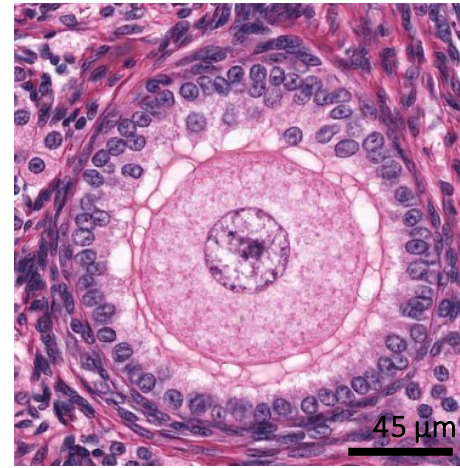
Reifungsperiode

primäre Oozyten (400.000) – 1. Reifeteilung  
sekundäre Oozyten – 2. Reifeteilung wird nur bei  
Befruchtung beendet

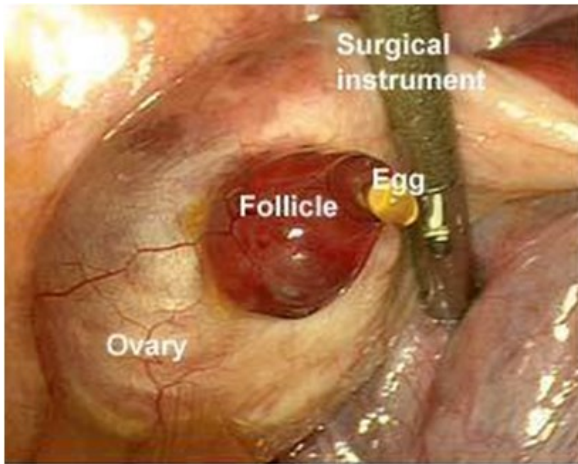




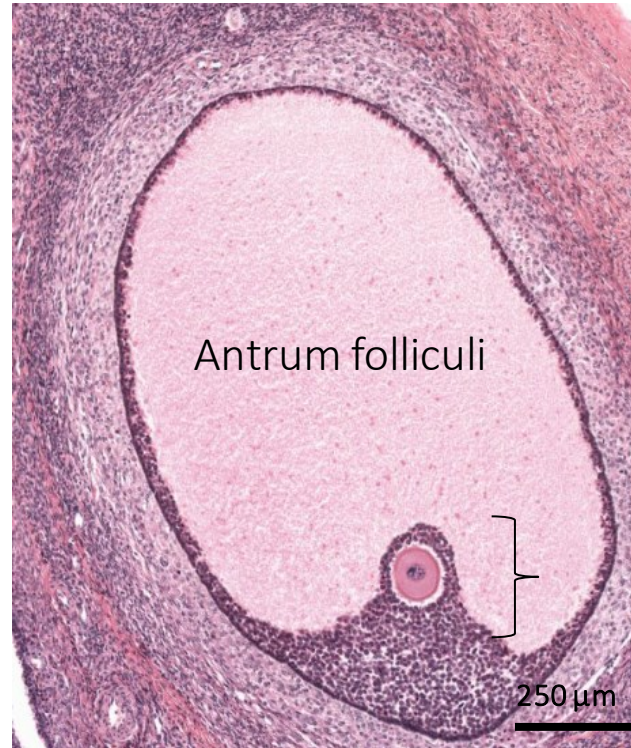
Primärfollikel



Sekundärfollikel



Tertiärfollikel/Bläschenfollikel  
 Sprungreifer/Graafscher Follikel  
 Hormonproduktion: Follikelhormone,  
 Östrogene



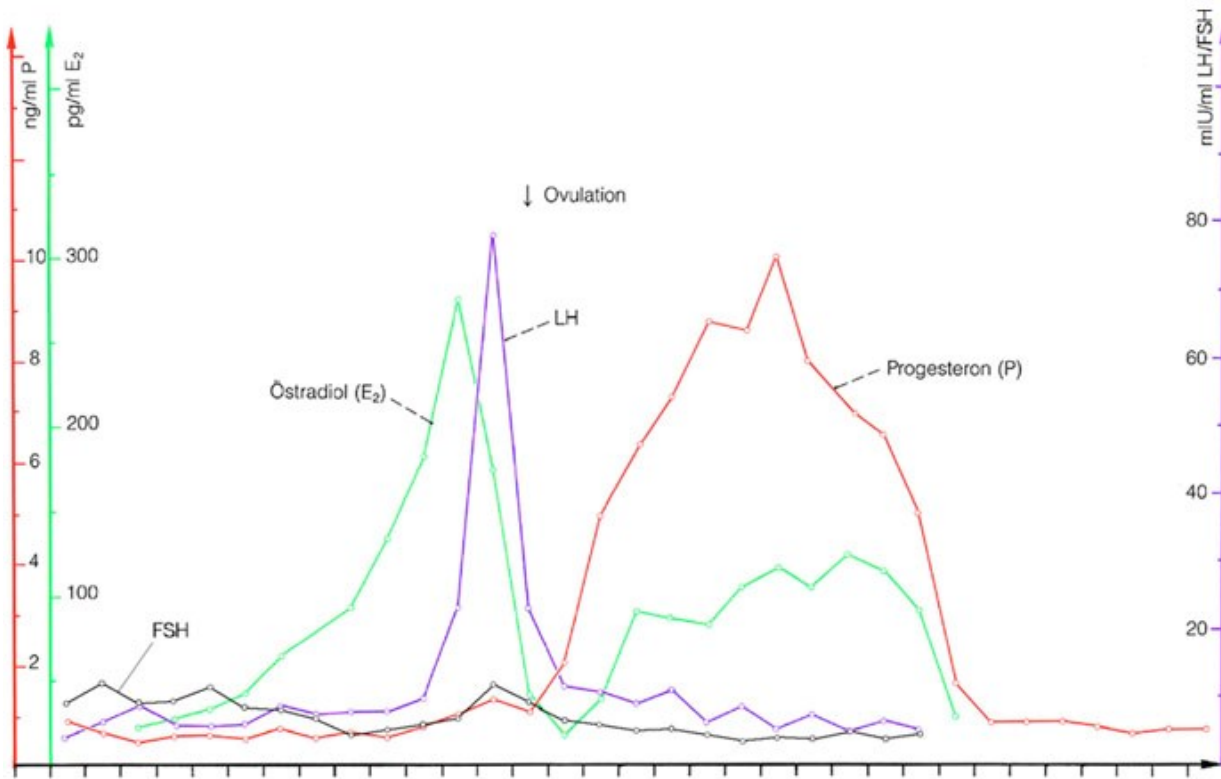
Cumulus oophorus  
 Primäre Oozyt



3000  $\mu$ m

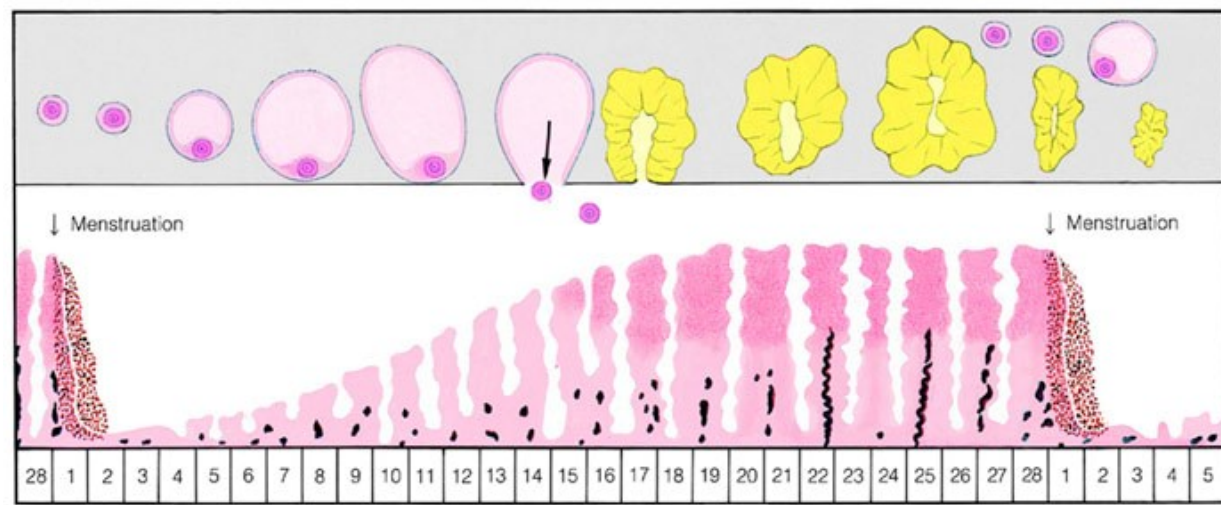
Blutung – *Corpus haemorrhagicum*  
Gelbkörper (*Corpus luteum*)  
Hormonproduktion: Progesteron, Östrogene





Menstruationszyklus:

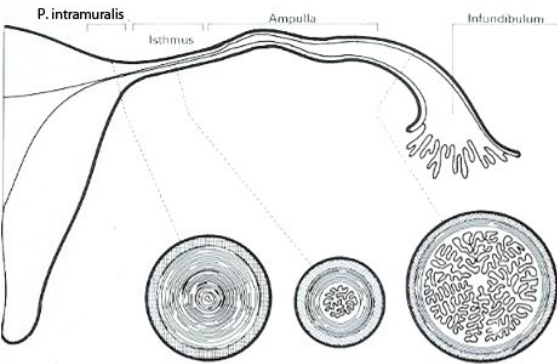
1. Regenerationsphase  
1-4. Tage  
Ausfalls des Progesterons  
Anstieg der Östrogene
2. Proliferationsphase  
5-15. Tage  
„östrogene Phase“  
die Drüsen werden vergrößert  
Spiralarterien entstehen  
prämenstruelle Hyperthermie



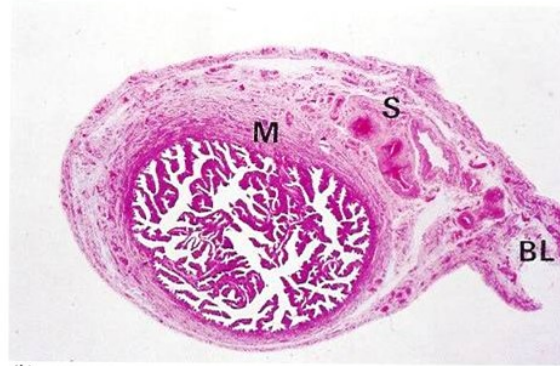
3. Sekretionsphase  
15-28. Tage  
„Progesteron Phase“

-> Ischämie, Blutung, Abstoßung  
-> Schwangerschaft

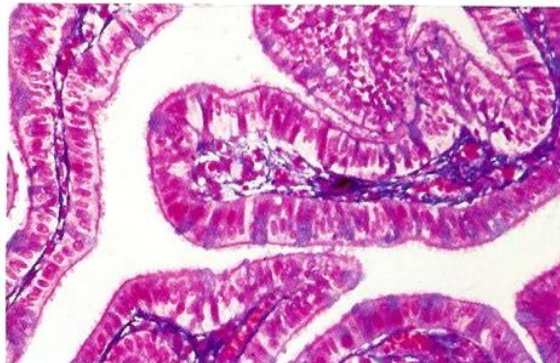
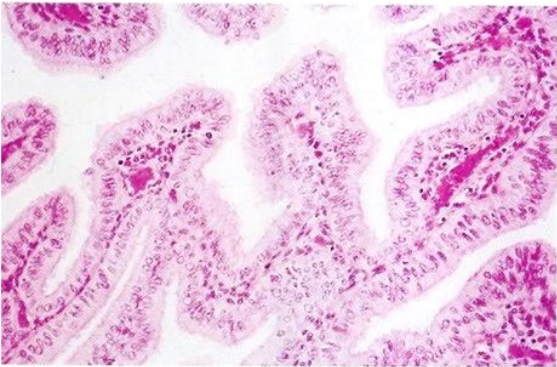
# Eileiter (Tuba uterina)



(a)



(b)



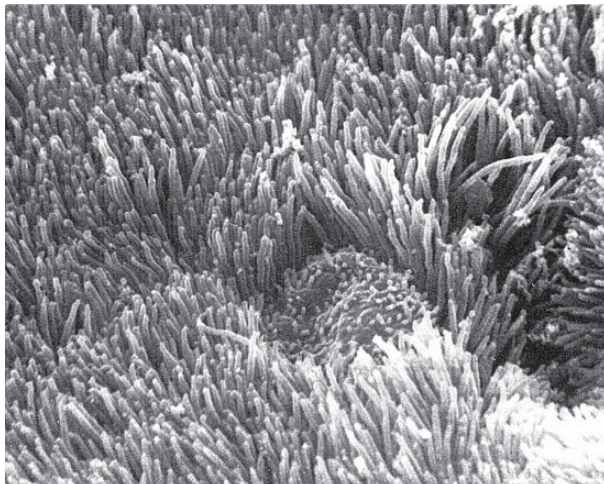
- 10-13 cm lang
- d= 2-5 mm
- Intraperitoneal

## Flimmerepithel

Blutversorgung:

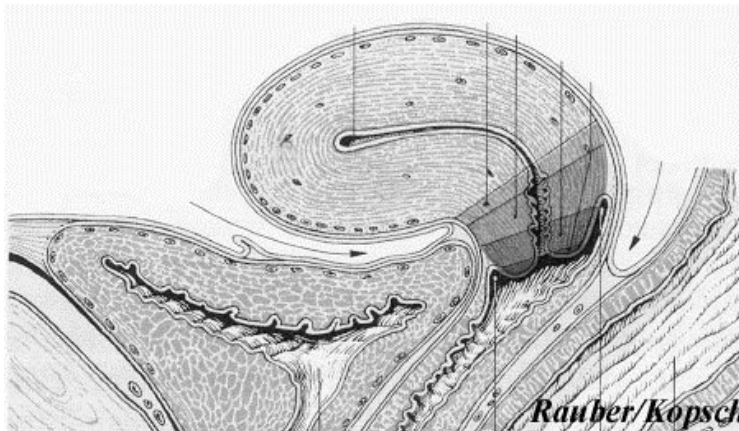
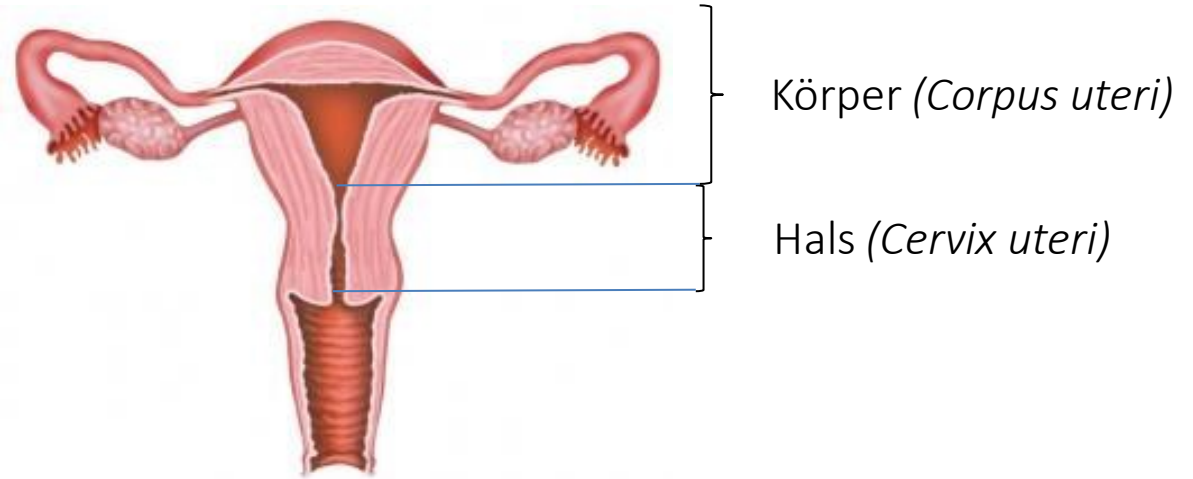
A. ovarica

A. uterina rr. tubarii



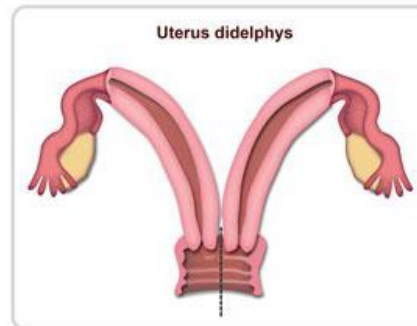
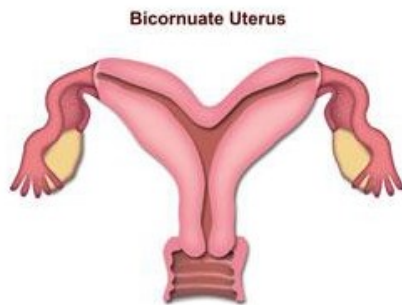
# Gebärmutter (Uterus)

- biernenförmig
- Muskelorgan
- infraperitoneal



- Excavatio vesicouterina
- Excavatio rectouterina (Douglas-Raum)

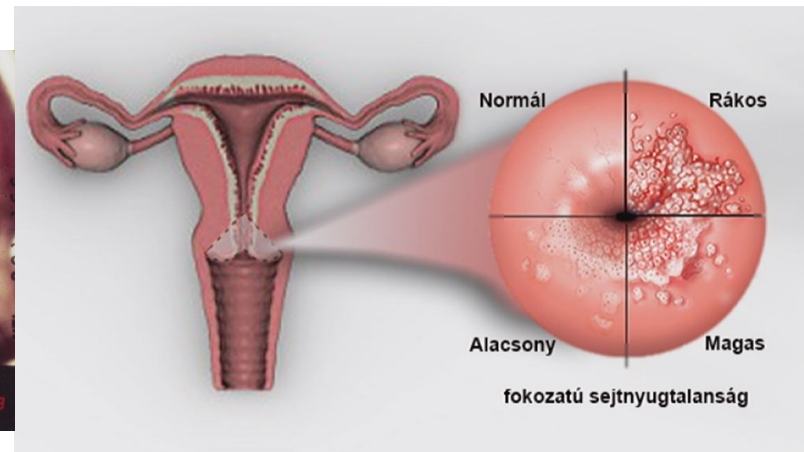
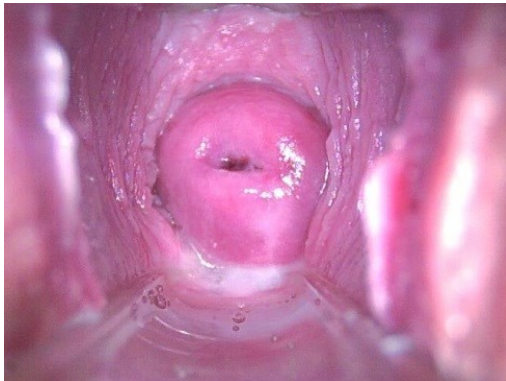
Blutversorgung: A. uterina



# Äußere Muttermund (*Ostium uteri externum*)

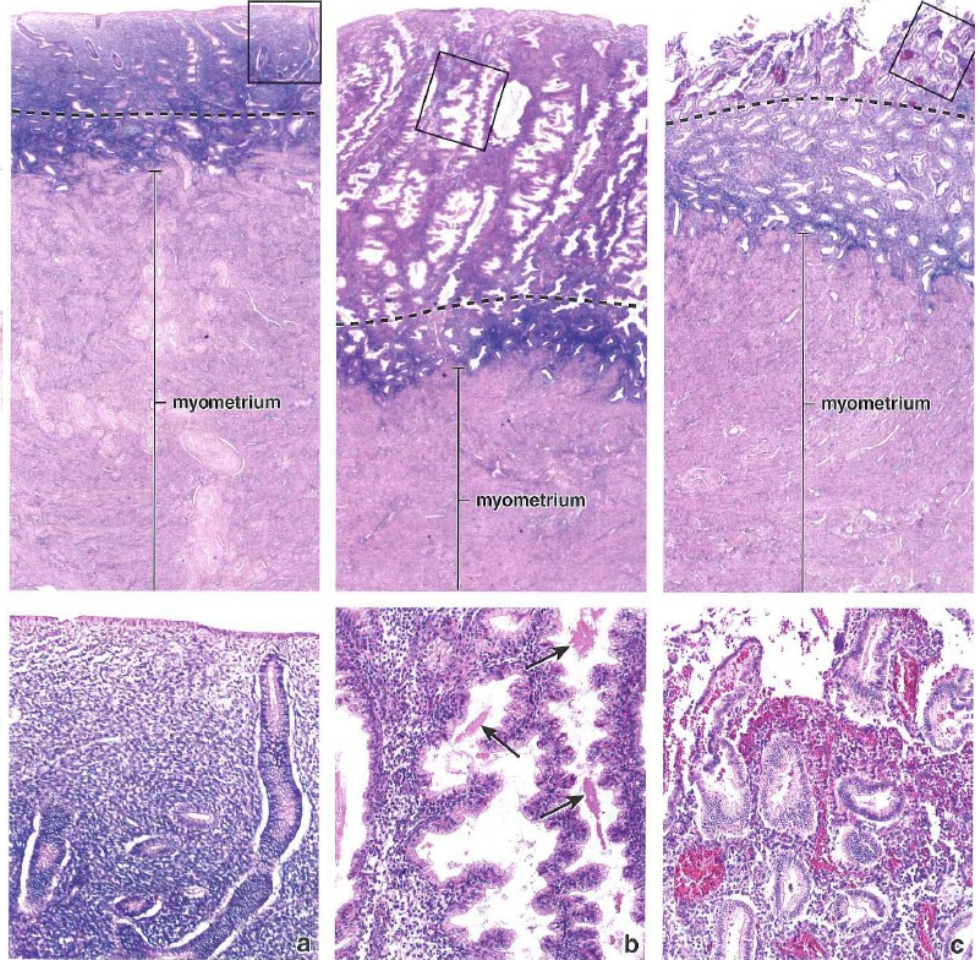


Nullipara  
Multipara



1. Perimetrium
2. Myometrium
3. Endometrium

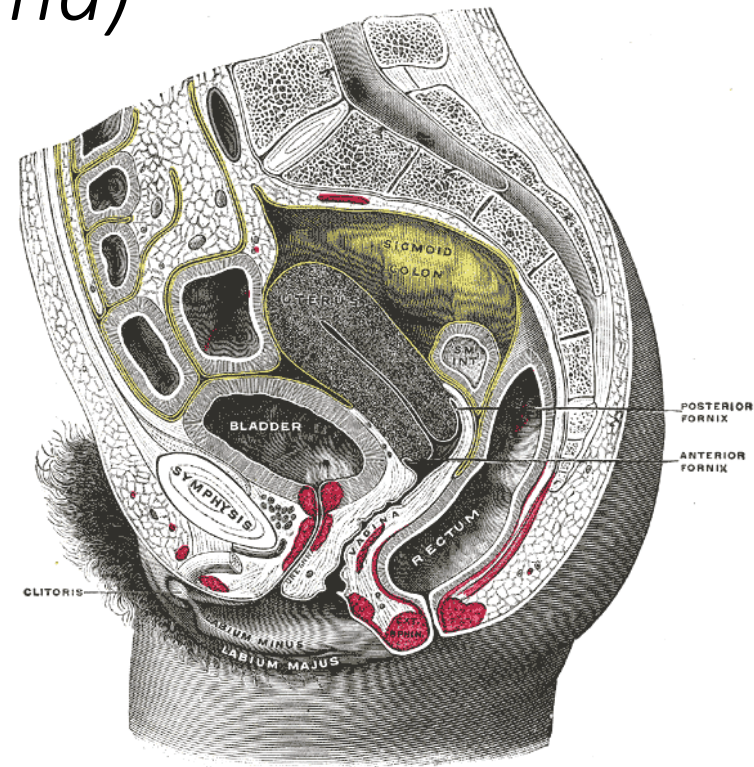
1. Proliferationsphase
2. Sekretionsphase
3. Regressive phase



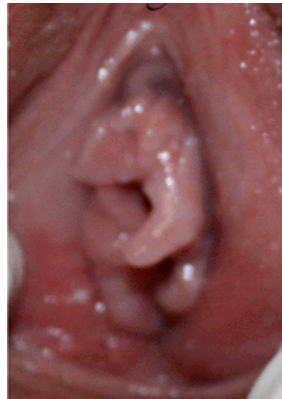
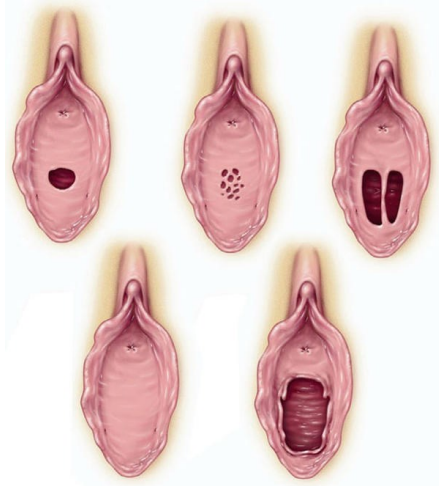
# Scheide (*Vagina*)

- häutig-muskuläres Rohr
- neigt 30-40° nach hinten
- Fornix vaginae anterior et posterior
- Vestibulum vaginae
  
- Mehrschichtiges unverhorntes Plattenepithel

Blutversorgung: A. vaginalis (A. uterina)



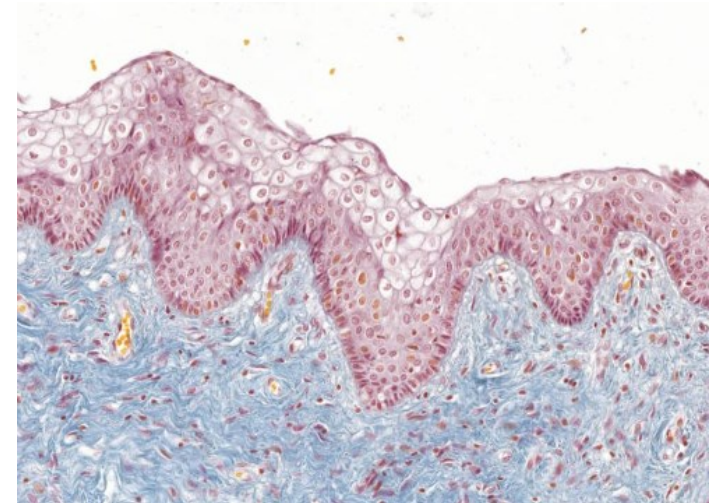
## Hymen



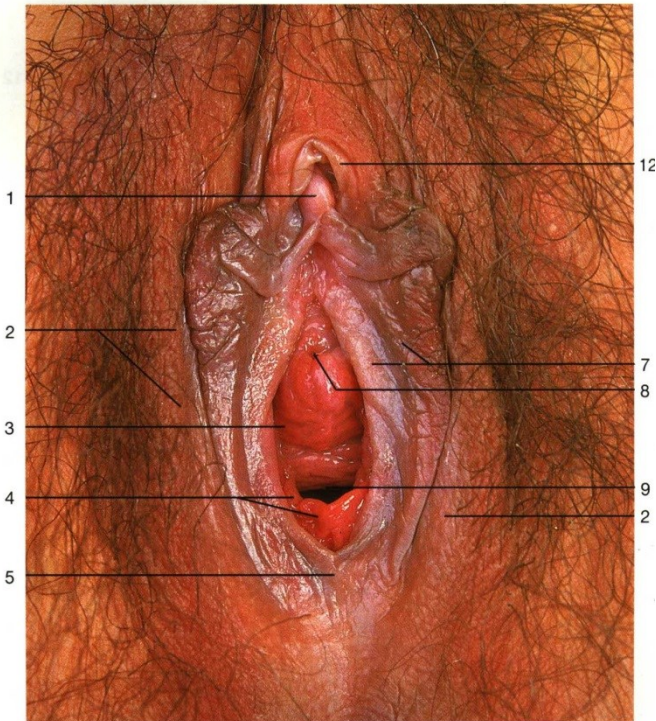
Before



After



# Äußere weibliche Geschlechtsorgane



Kitzler (*Clitoris*)

Große Schamlippen (*Labium majus pudendi*)

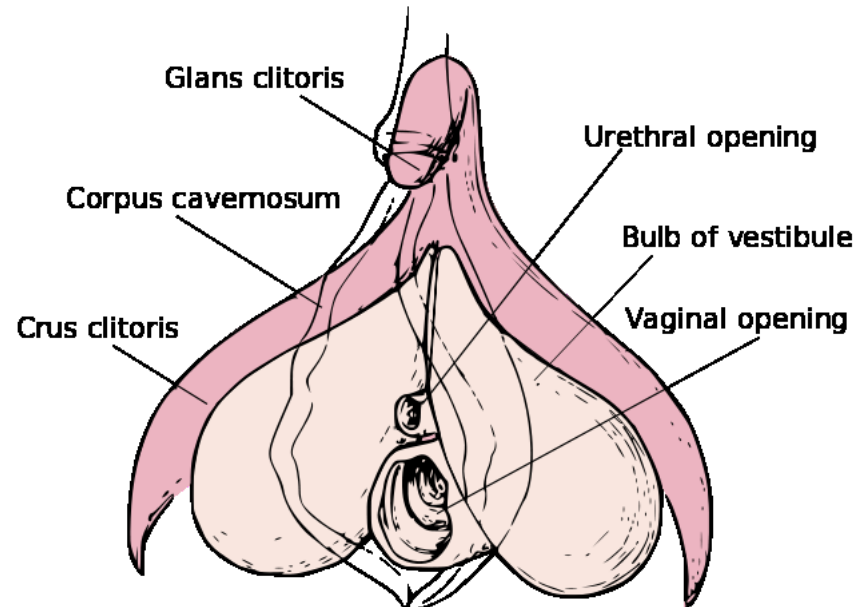
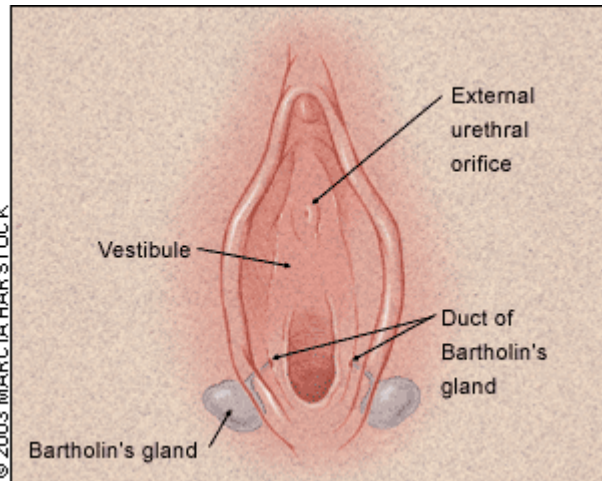
Kleine Schamlippen (*Labium minor pudendi*)

Vestibulum vaginae

Scheidenmündung (*Ostium vaginae*)

Blutversorgung:

Äste von A. pudenda interna und A. femoralis



# Schwangerschaft

- Befruchtung
- Furchung
- Implantation
- Embrionale Phase
- Foetale Phase

# Veränderungen in Schwangerschaft

## Brust

- Schwellung

## Äußere Geschlechtsorgane

- Hyperämie

## Gebärmutter

- Zahl und Größe von glatte Muskelzellen erhöht

## Eierstock

- Progesteron produktion
- Keine Ovulation

## Gewicht

- Energielagerung





Hoden (*Testis*)

Nebenhoden (*Epididymis*)

Samenleiter (*Ductus deferens*)

Samenbläschen (*Vesicula seminalis*)

Vorstehedrüse (*Prostata*)

Cowpersche Drüse (*Glandula bulbourethralis*)

Penis

My brain: it's my second favorite organ.

(Woody Allen)

# Hoden (*Testis*)



- Hängen im Hodensack (*Scrotum*)
- Gefäßstiel - Samenstrang
- pflaumenförmig

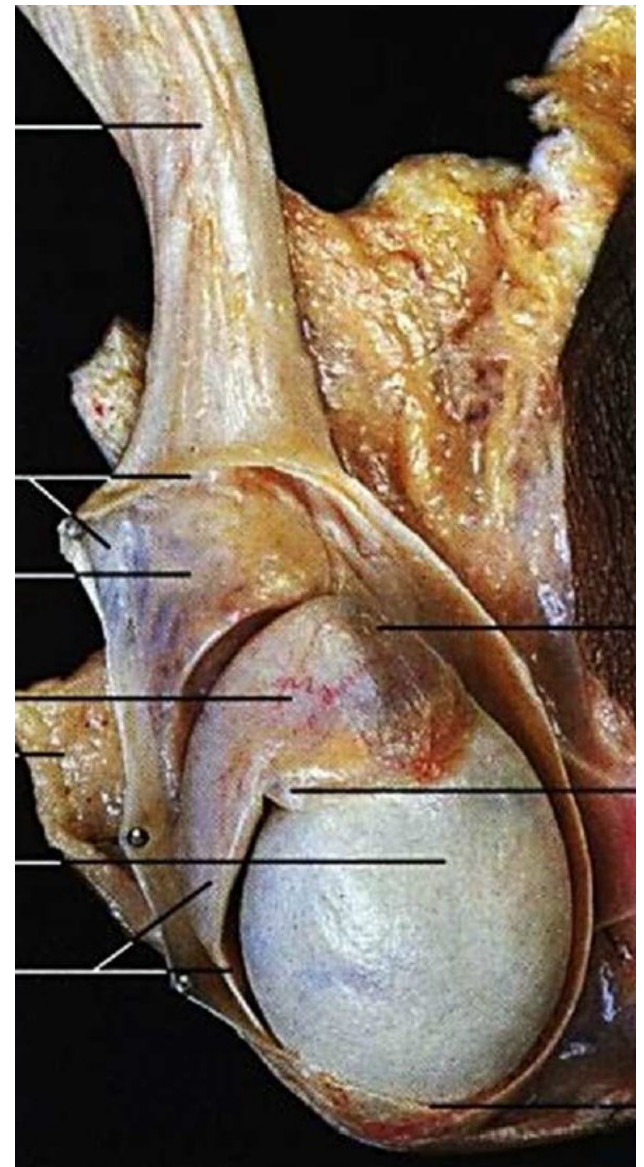
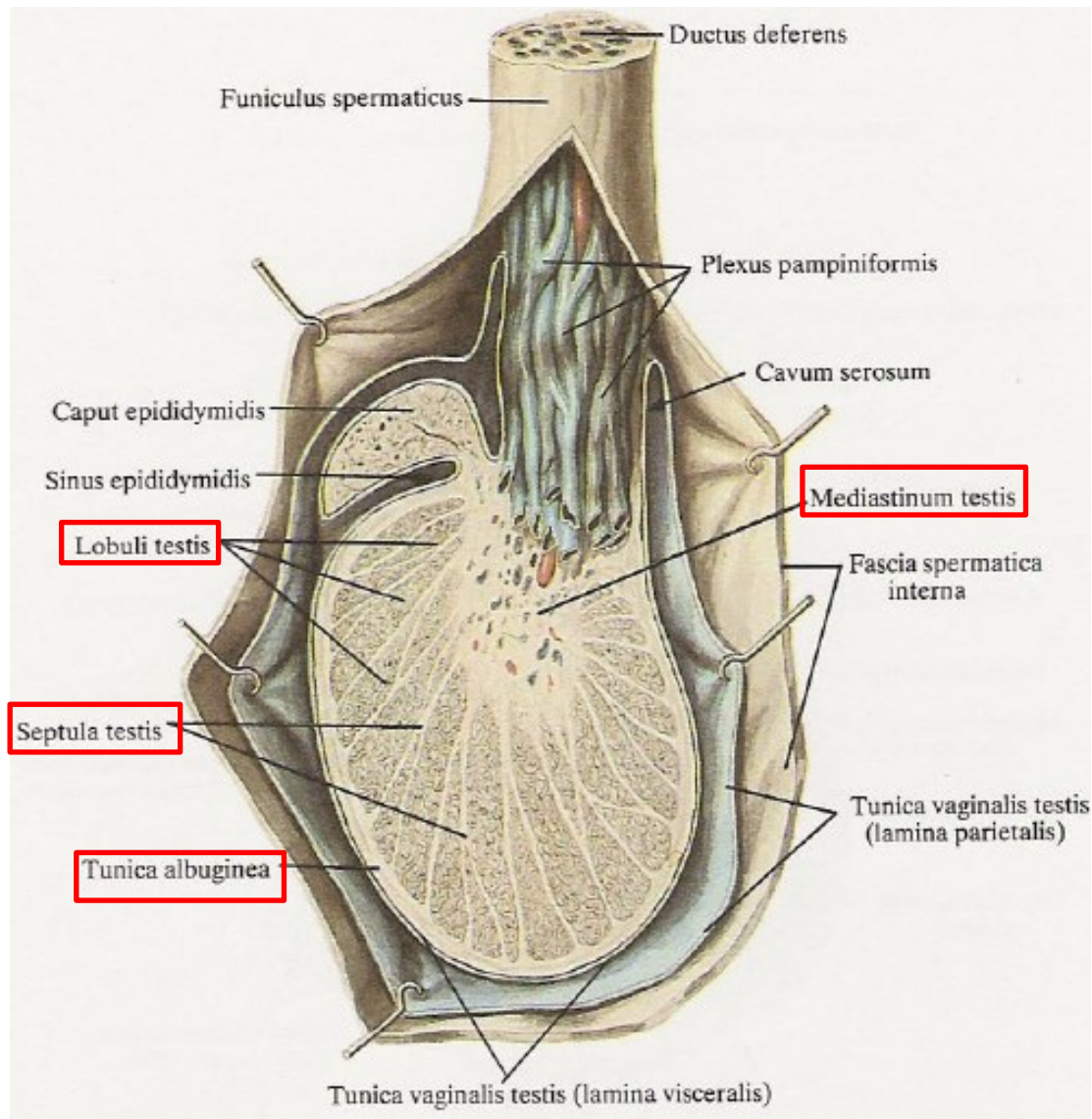
Blutversorgung:

A. testicularis – Aorta abdominalis

Plexus pampiniformis- v. cava inferior (rechts) / v. renalis (links)

Lymphgefäße:

Nodi lymphatici paraaortici



# Hodenhülle (*Tunica vaginalis testis*)

Descensus testis

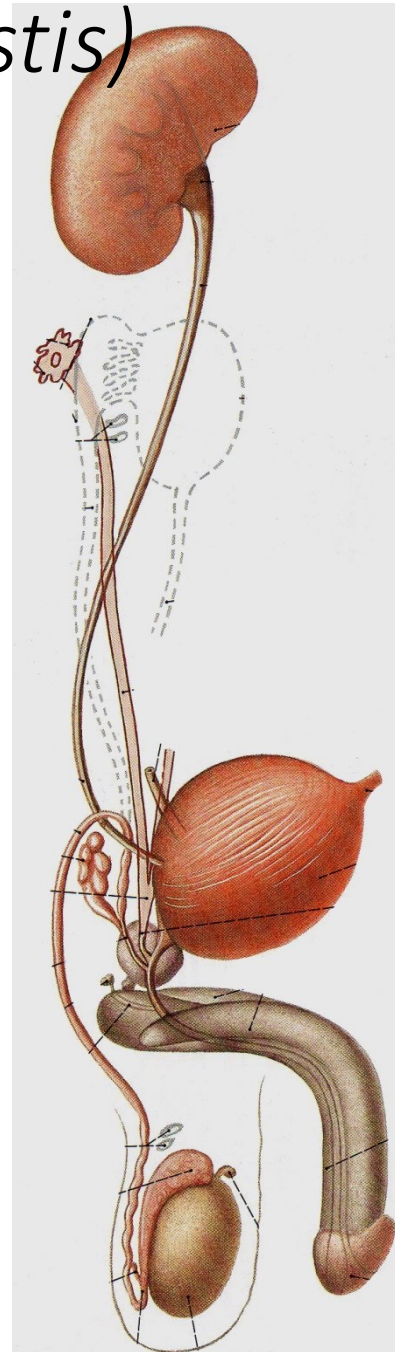
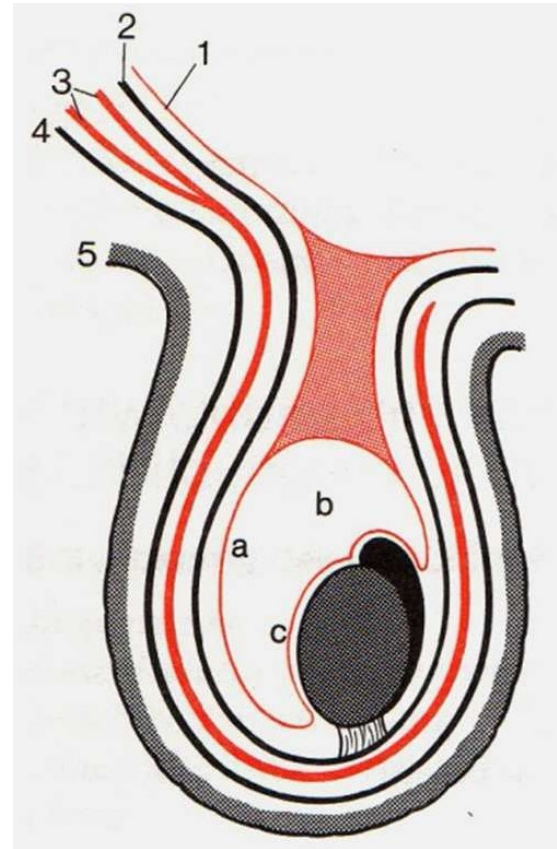
-2-7. Schwangerschaftsmonat

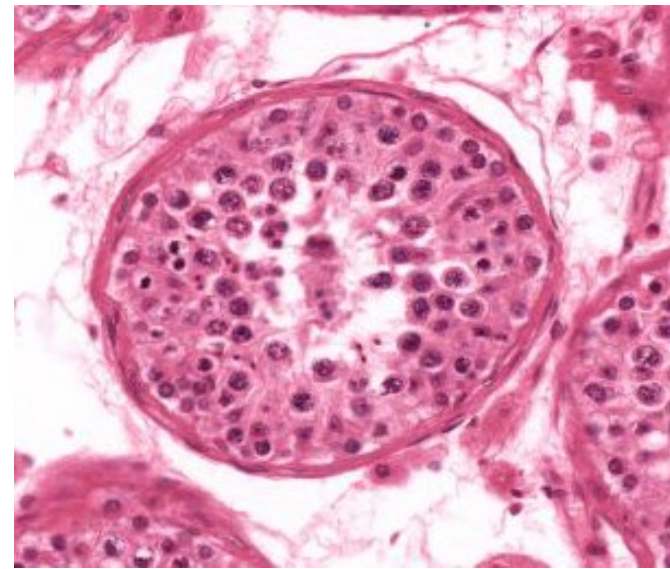
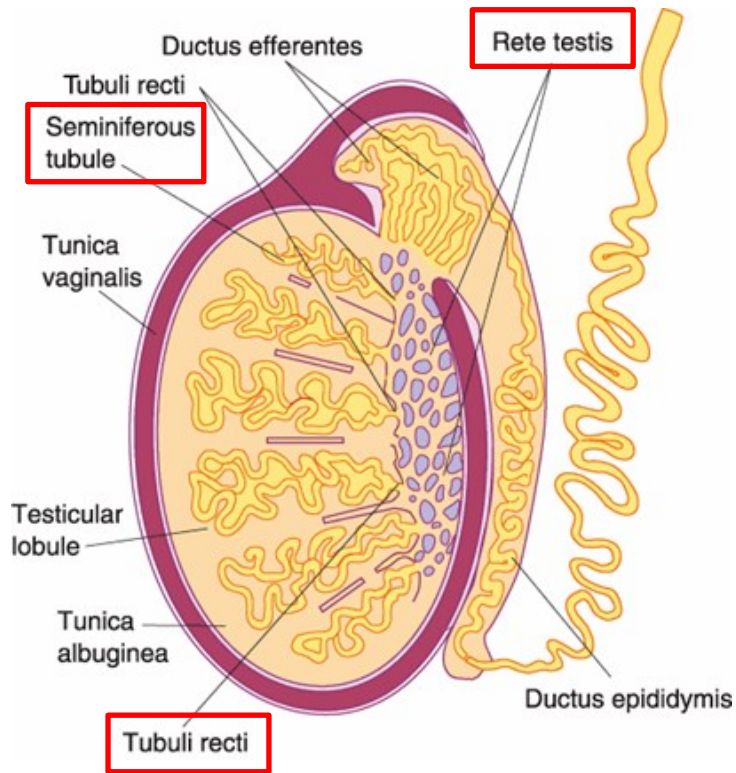
- Von L1

Versteckte Hoden

Cremaster reflex

- Haut (5)
- Fascia (4)
- Muskeln(3)
- Fascia transversalis (2)
- Bauchfell (*Peritoneum*) (1)





100 μm

Samenkanälchen (*Tubuli seminiferi contorti*)

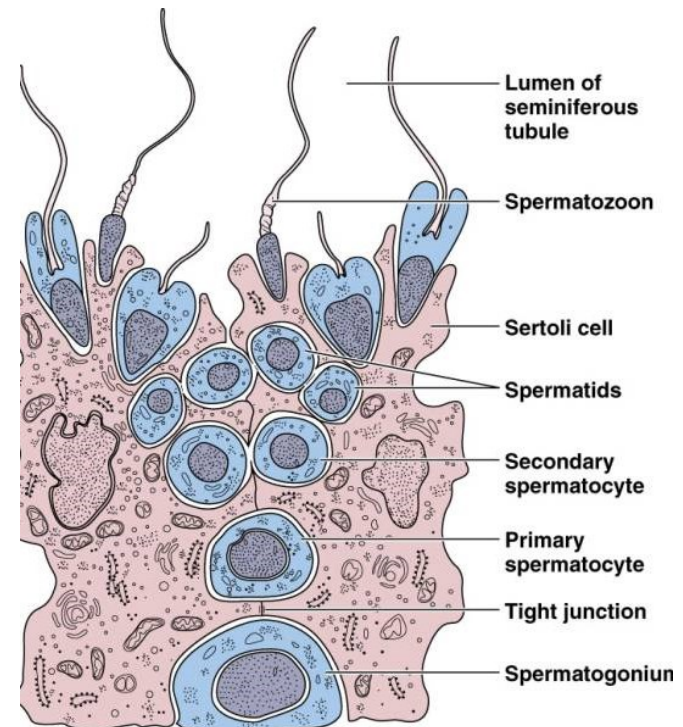
- Spermatozoen
- Sertoli-Zellen

sezernieren Samenflüssigkeit  
 produzieren Lactat und Pyruvat für die Spermien

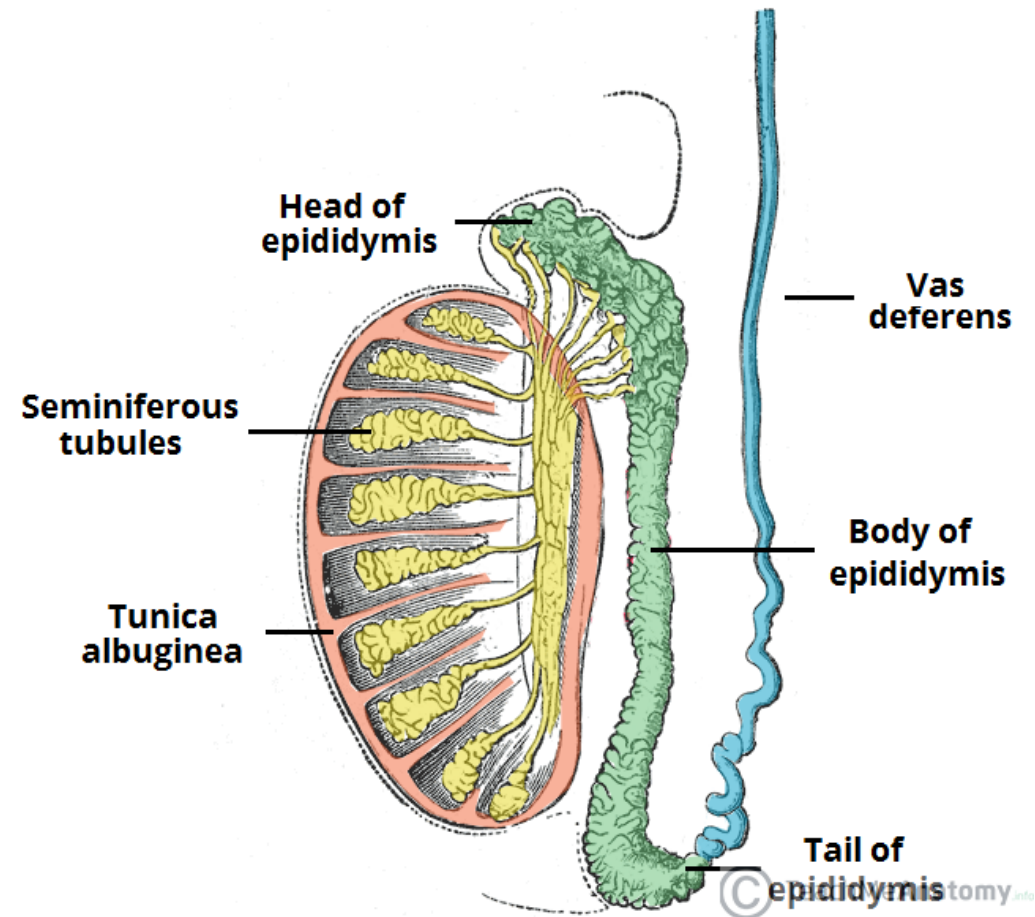
Blut-Hoden Schranke

- Zwischenzellen (Leydig-Zellen)

Bildung der Testosteron

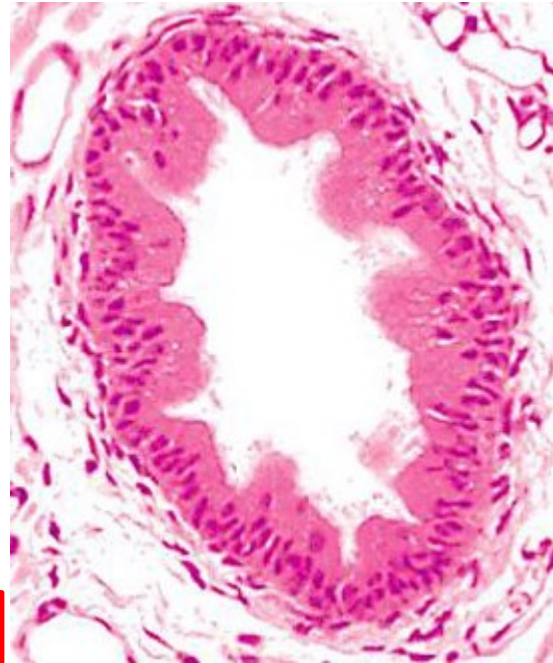
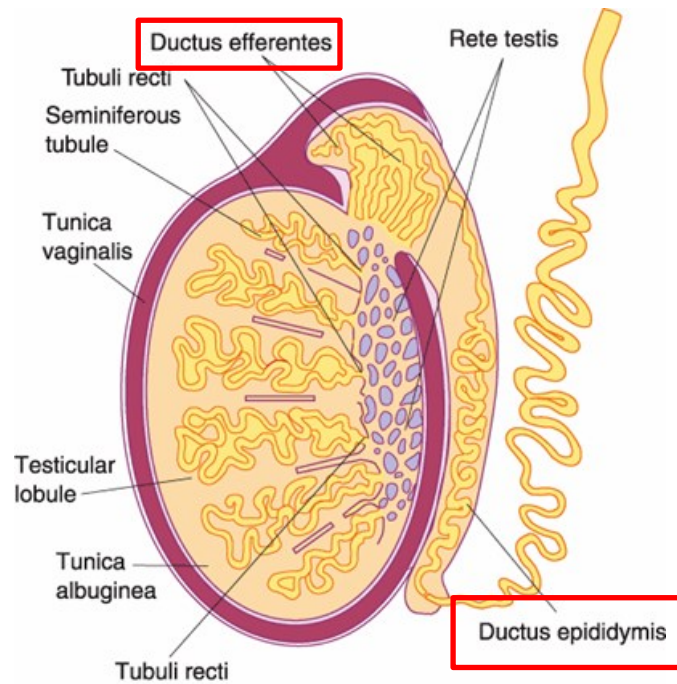


# Nebenhoden (Epididymis)



- Caput
- Cauda
- Ductus deferens

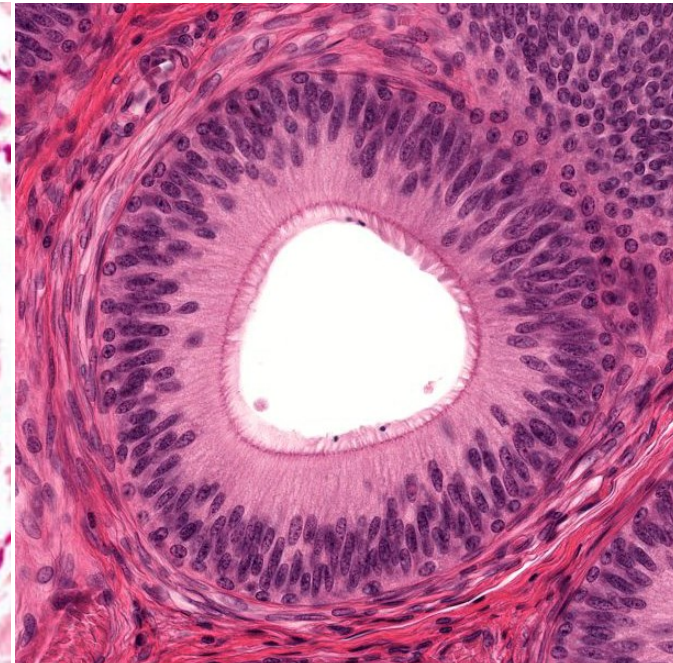
Blut- und Lymphgefäße sind identisch mit den Hoden.



450 μm

**Ductuli efferentes testis**  
 12- 14 Kanälchen  
 Länge: 20 cm (in 2 cm  
 gewunden)

*Hochprismatisches Epithel  
 mit Stereozilien*



50 μm

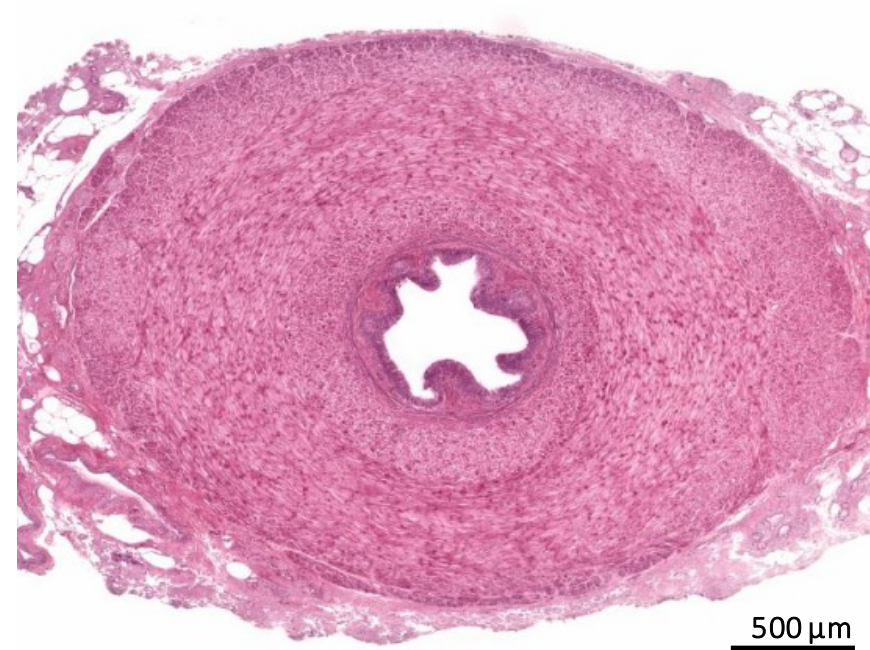
**Ductus epididymis**  
 1 Stück  
 Länge: 4m

*Zweireihiges  
 hochprismatisches Epithel  
 mit Stereozilien*

# Samenleiter (*Ductus/vas deferens*)

- Länge: 45 cm
- d=2 mm
- Durchmesser von Lumen: 0,2-0,3 mm

Blutversorgung: A. ductus deferentis

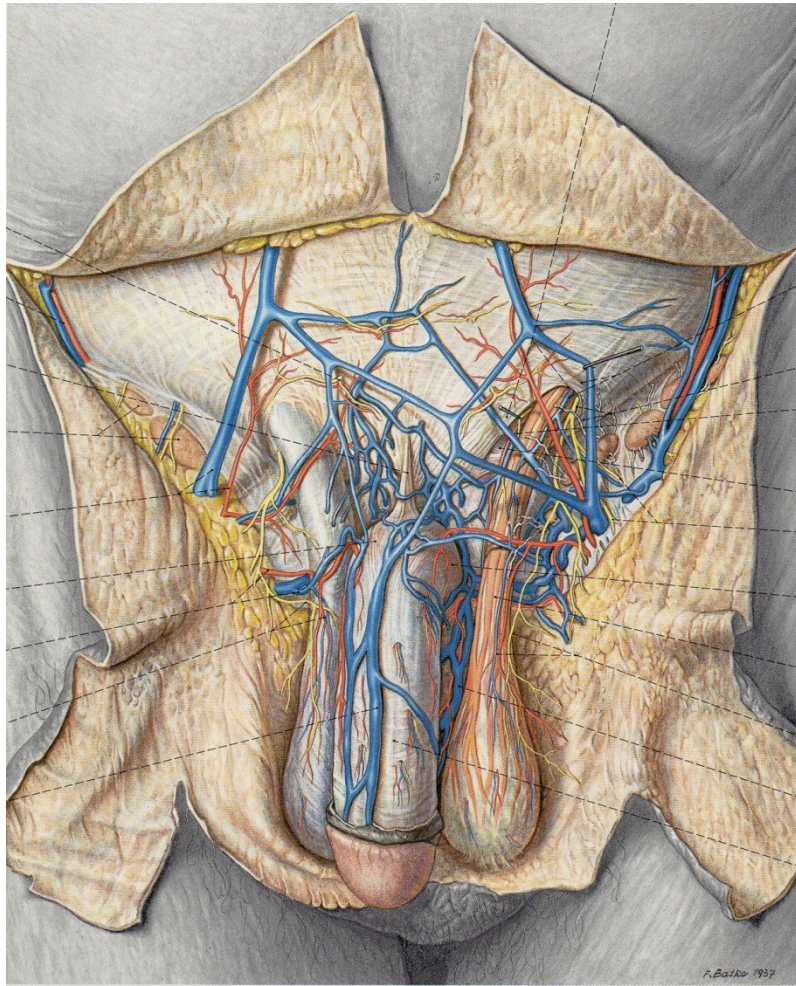


Zweireihiges hochprismatisches Epithel mit Stereozilien  
Glatte Muskulatur  
Elastische Fasern

Vasectomy: Verschnürung von Ductus deferens  
Tubuli seminiferi contorti sterbt



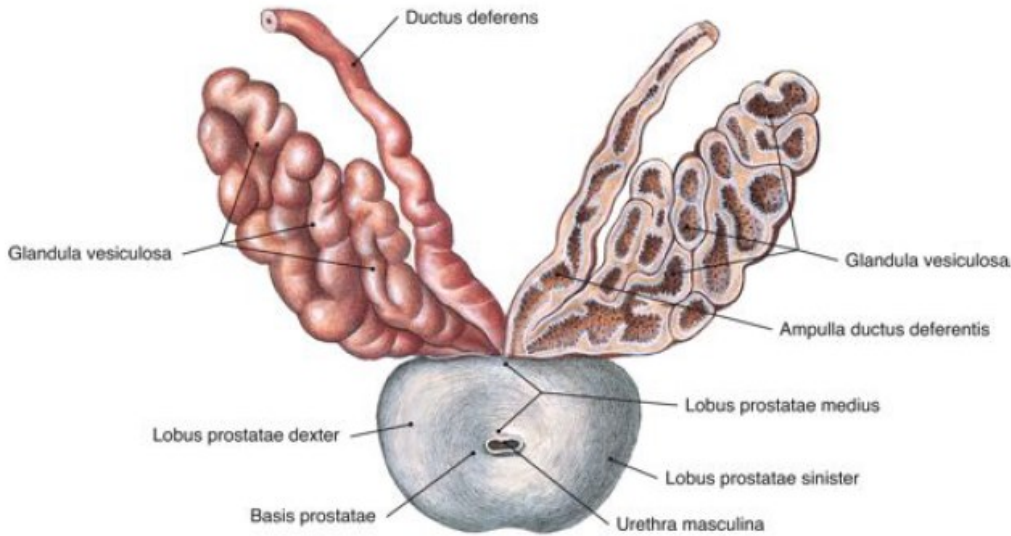
# Samenstrang (*Funiculus spermaticus*)



- Ductus deferens
- A. testicularis
- Plexus pampiniformis
- A. ductus deferentis
- Vegetative Nerven
- Ramus genitalis nervus genitofemoralis



# Samenbläschen (Vesicula seminalis)



Exokrine Drüse

Alkalisches Sekret (pH 7.3)

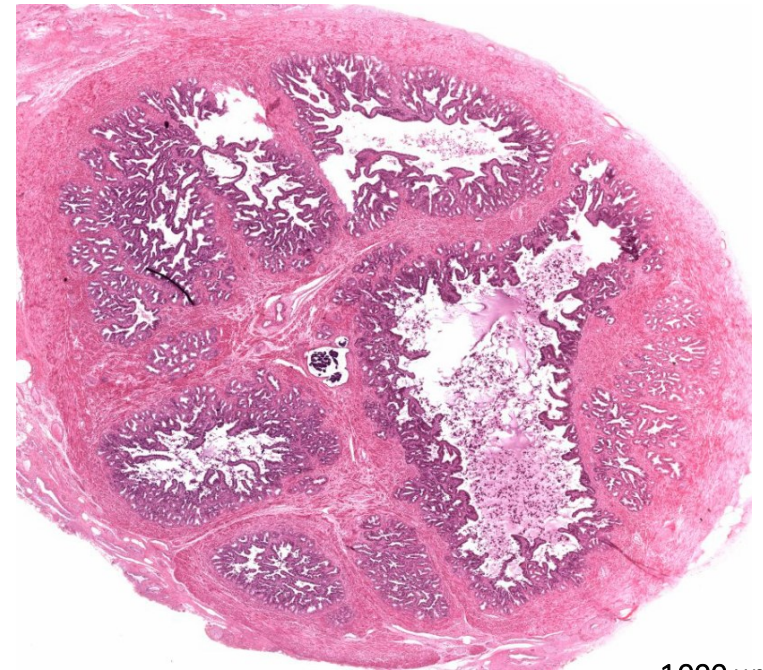
Hauptmasse von Sperma

Fruktose

Blutversorgung: A. ductus deferentis

Ductus excretorius + ductus deferens =  
ductus ejaculatorius

Hochprismatisches Epithel



1000 µm

# Vorsteherdrüse (*Prostata*)

Gestalt und Größe Eßkastanie ähnlich  
Exokrine Drüse

sauerer Sekret (pH 6.45)

Pars prostatica urethrae

Ductus ejaculatorius

Blutversorgung:

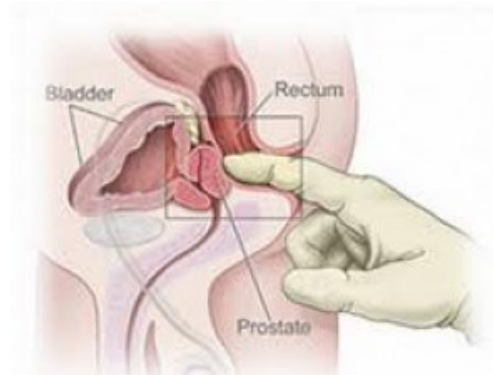
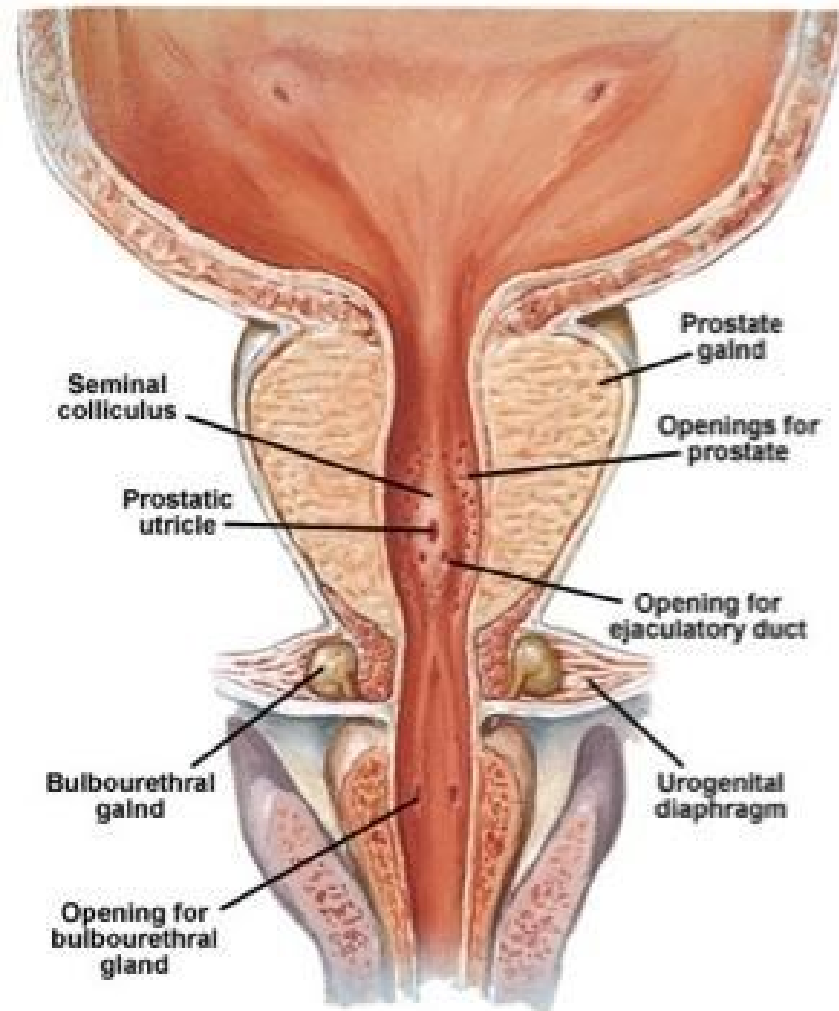
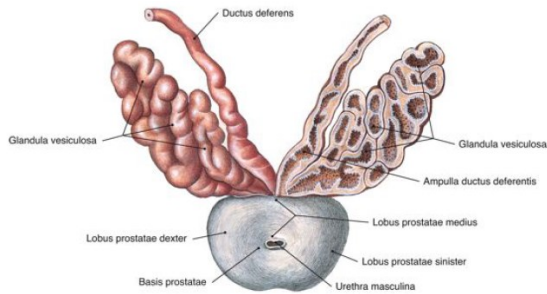
A. pudenda interna

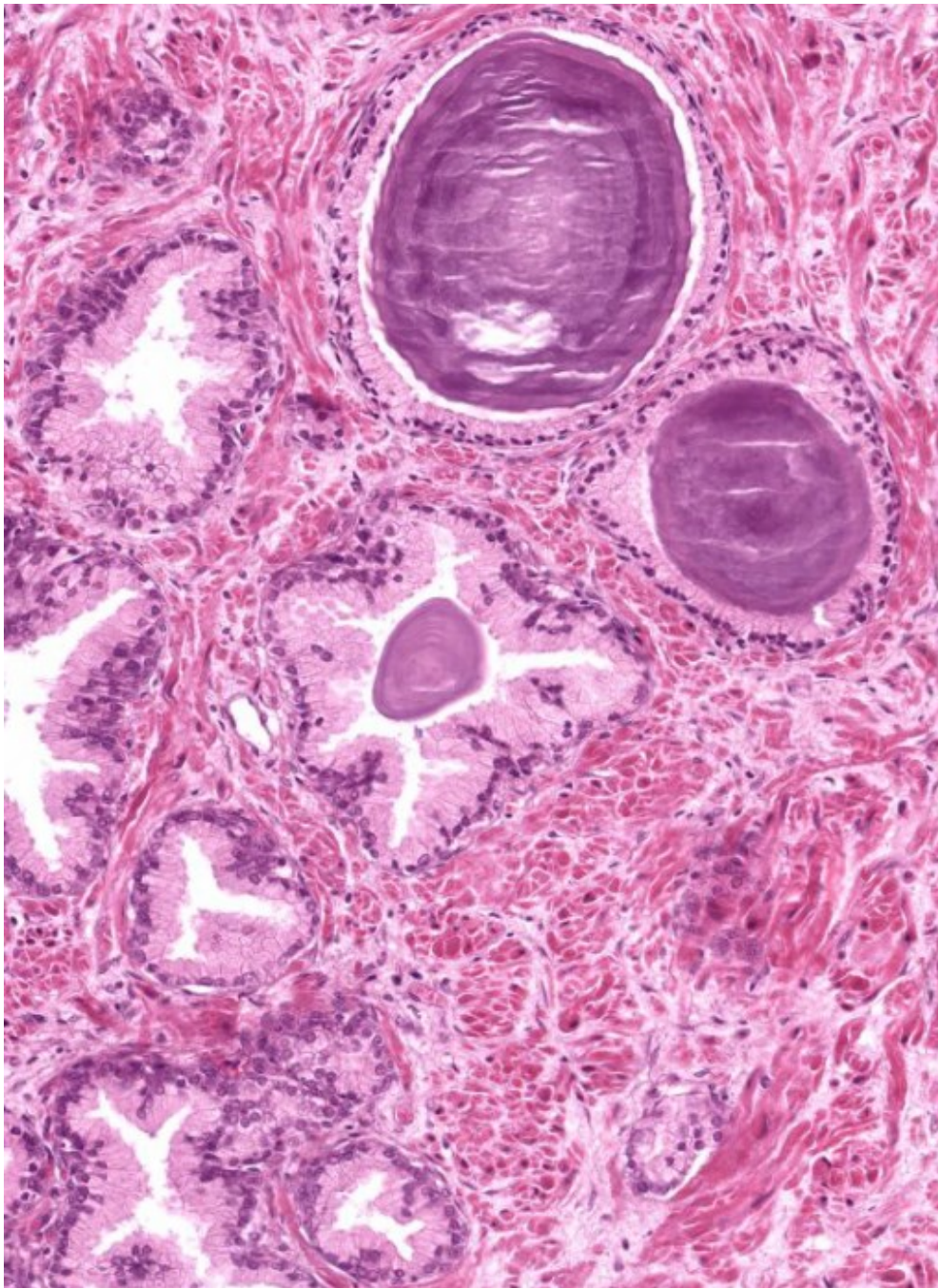
A. vesicalis inferior

A. rectalis media

Lymphgefäße:

A. Iliaca interna und sacrale Lymphknoten

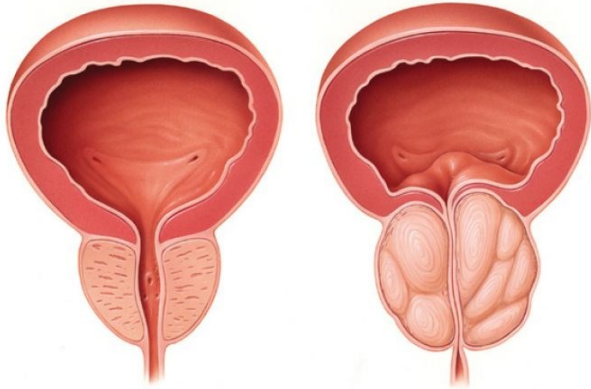




30-40 tubuloalveoläre Drüsen  
Glatte Muskulatur  
Zweireihiges hochprismatisches Epithel

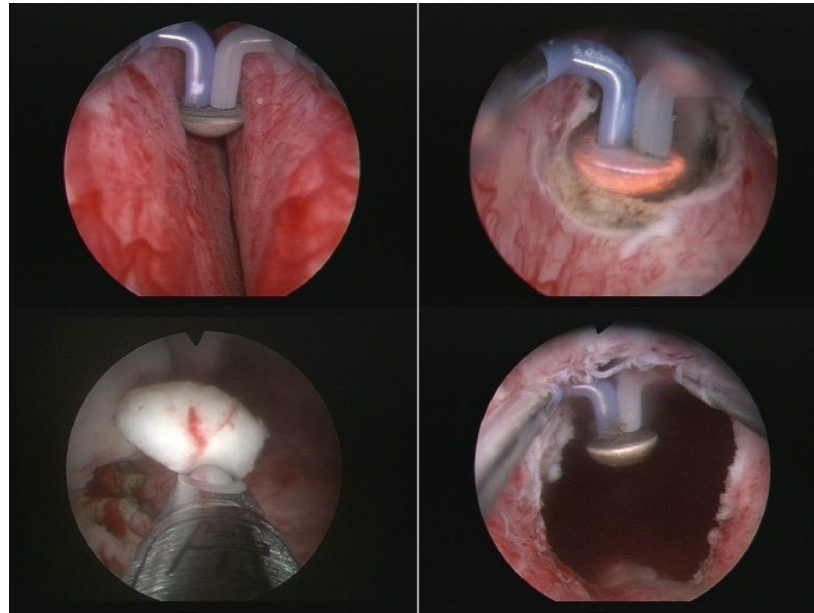
100  $\mu$ m

# Prostatahyperthrophie

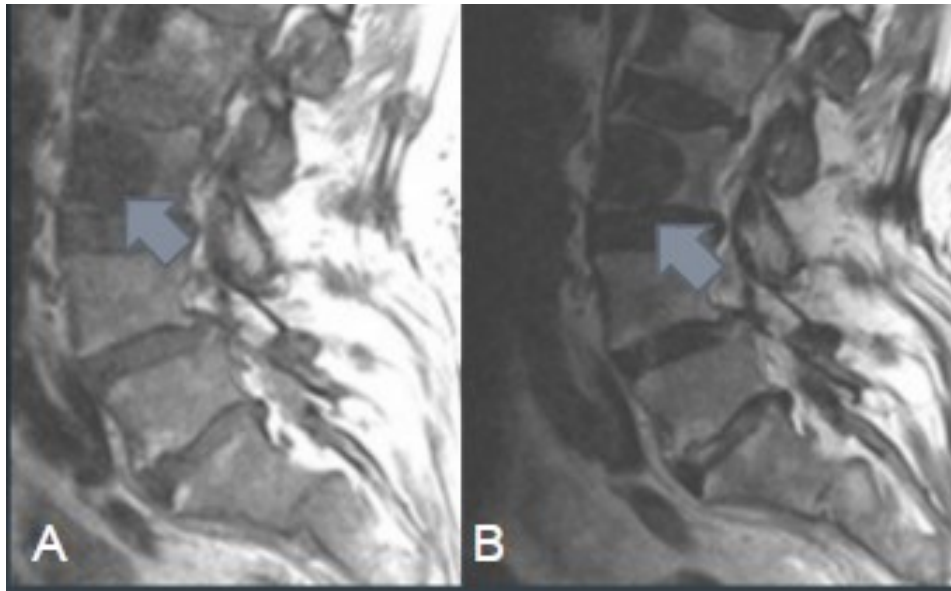


Normal Prostate

Enlarged Prostate

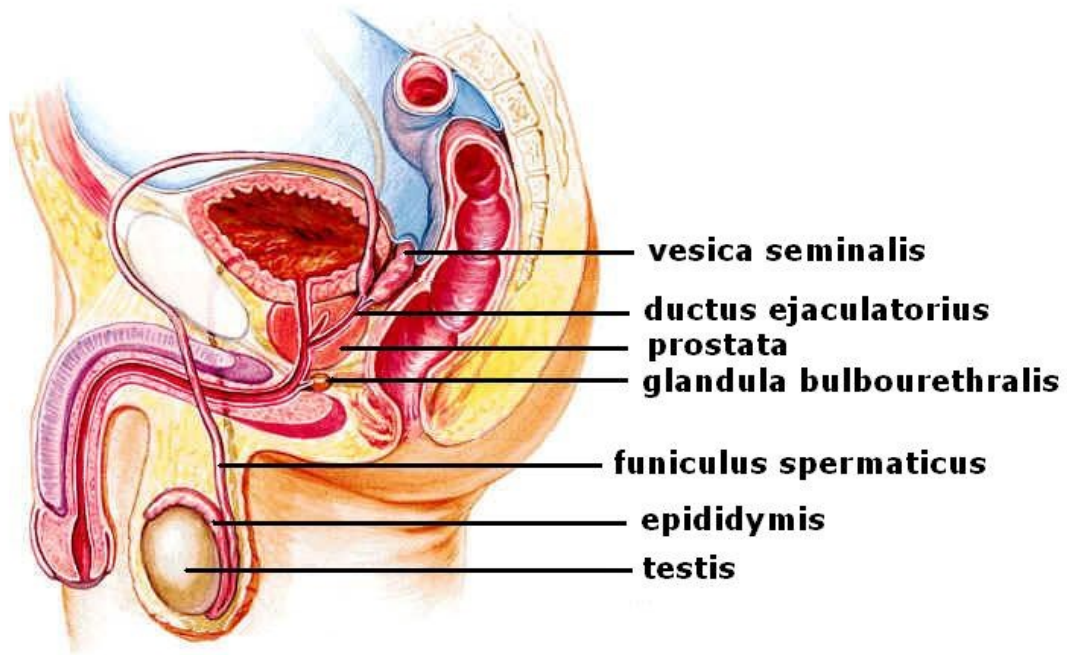


TUR



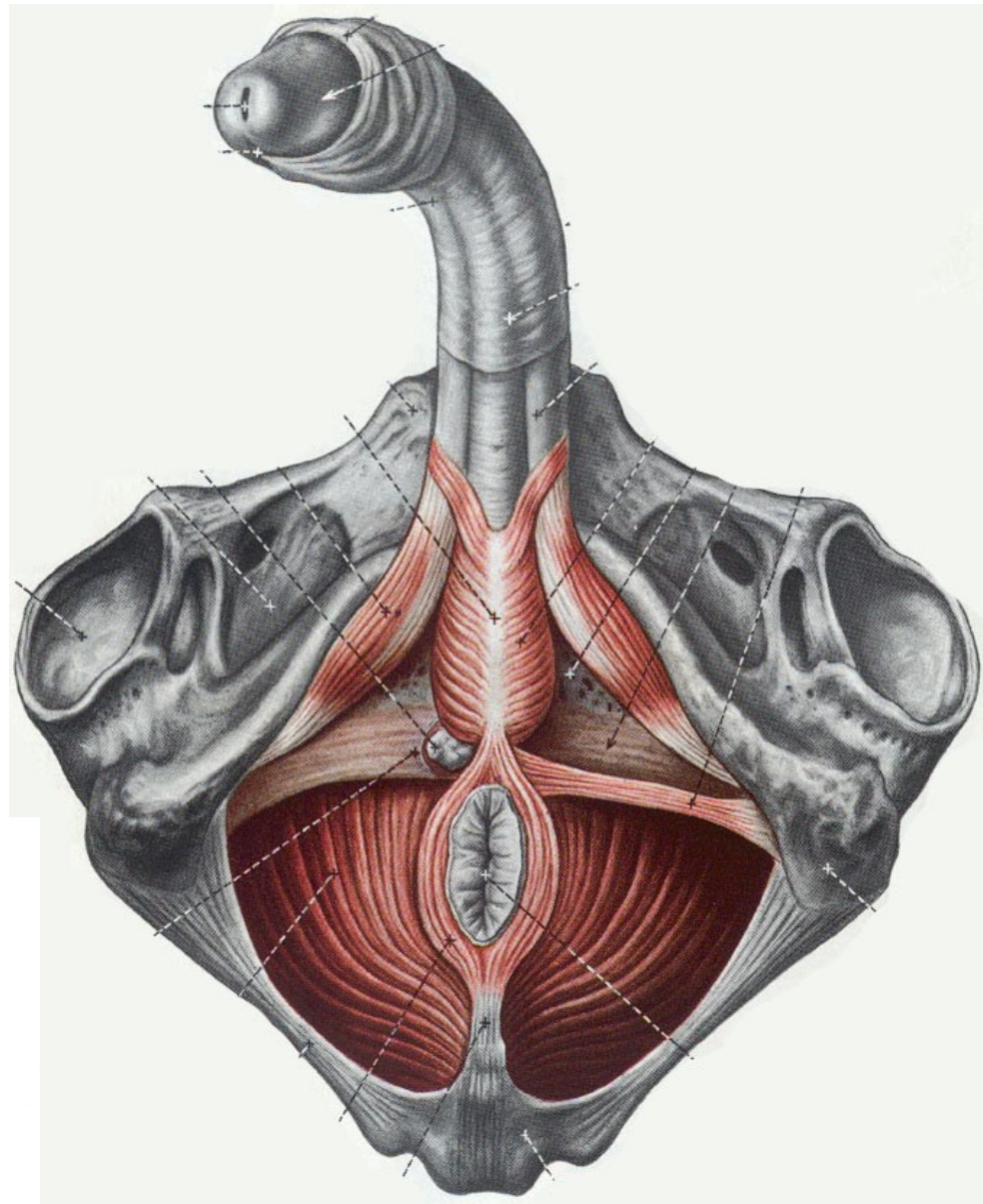
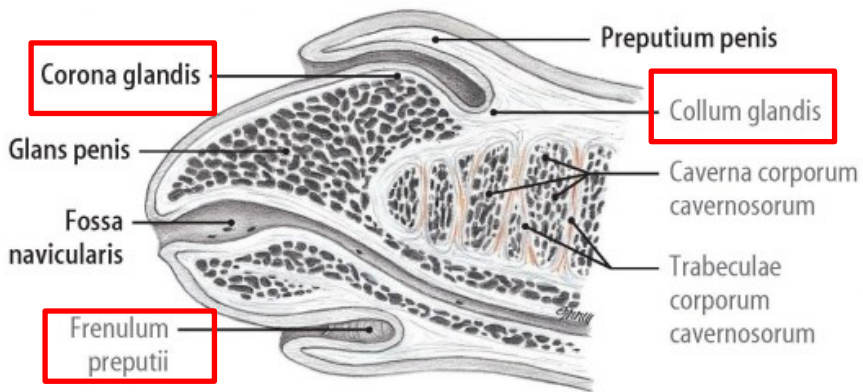
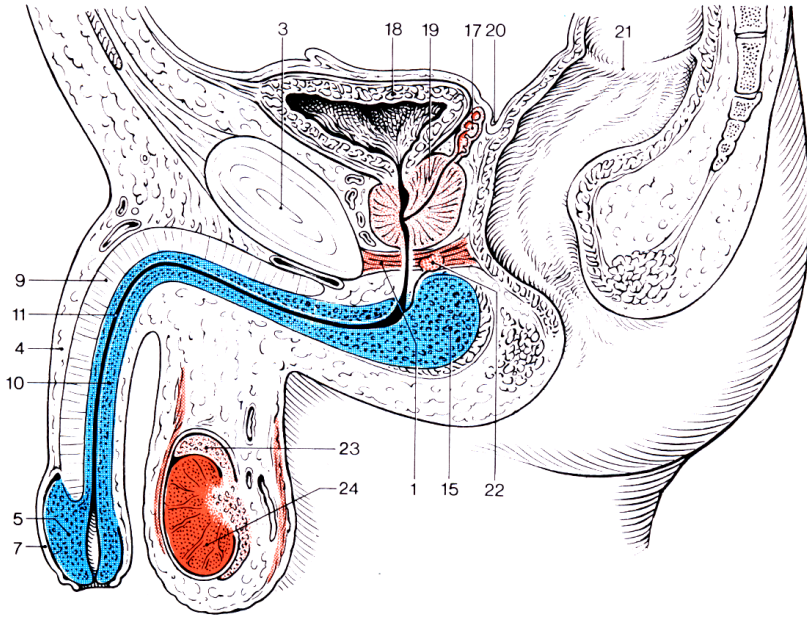
MRI Alte: 66 Jahre L3 Metastase

# Cowpersche Drüse (*Glandula bulbourethralis*)

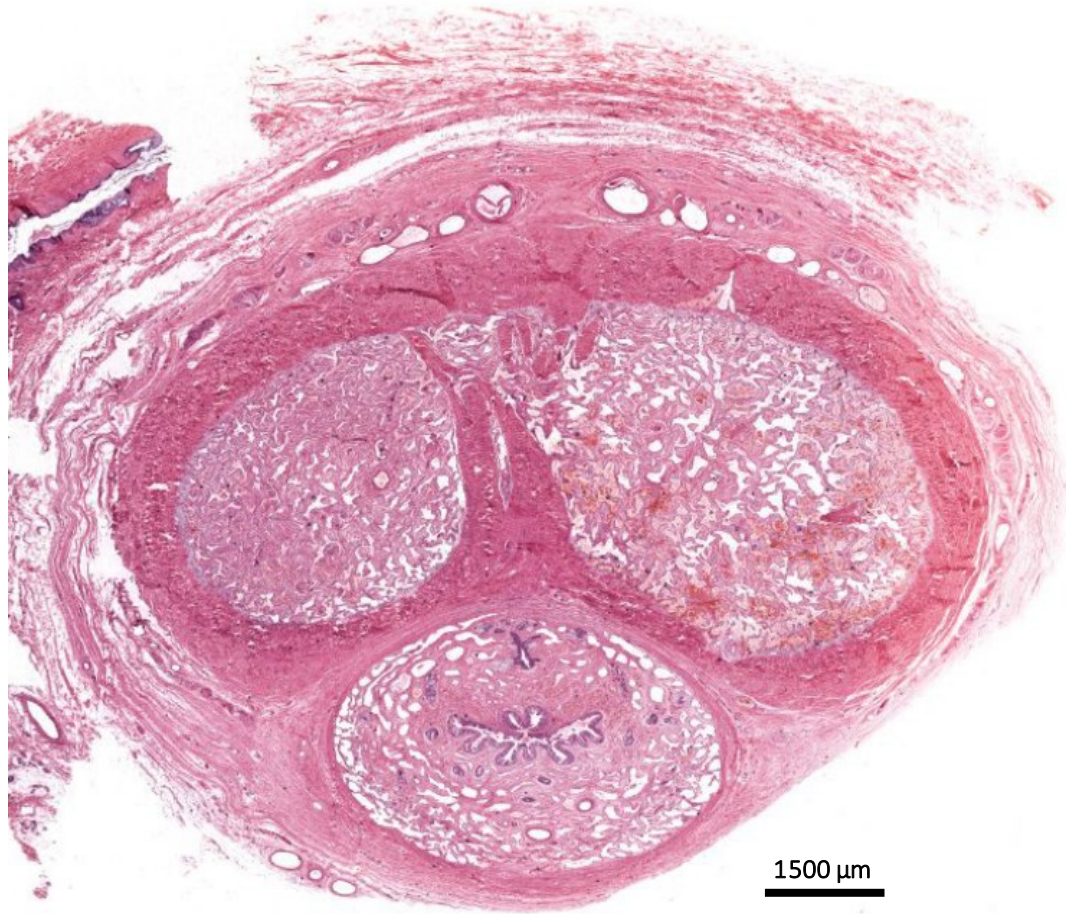
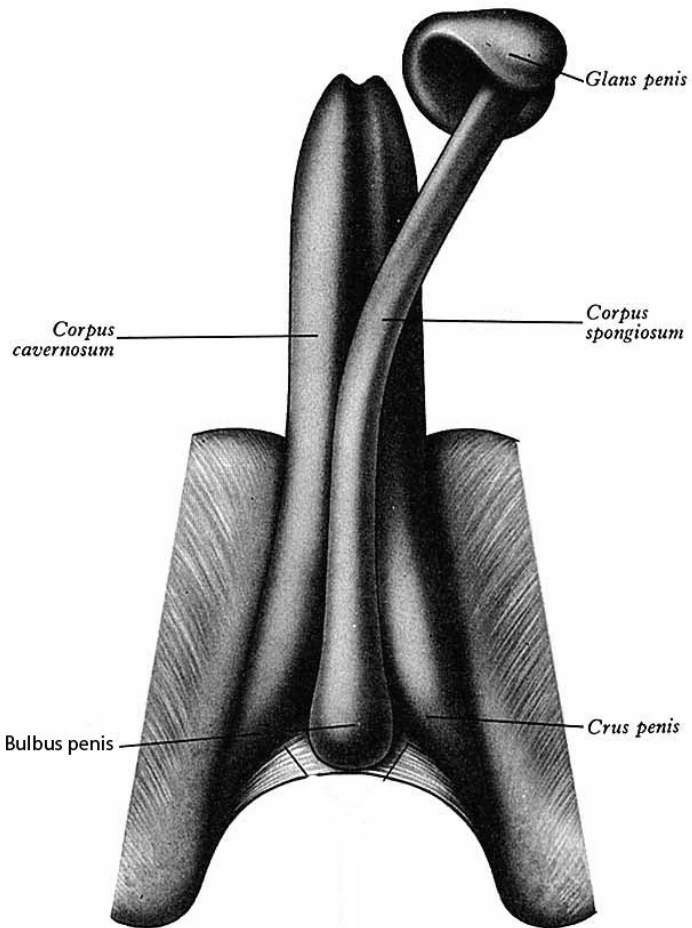


Erbsengroße,  
tubuloalveolare Drüse  
Liegt in Diaphragma  
urogenitale

# Penis



Musc. Bulbospongiosus  
 Musc. Ischiocavernosus  
 Diaphragma urogenitale



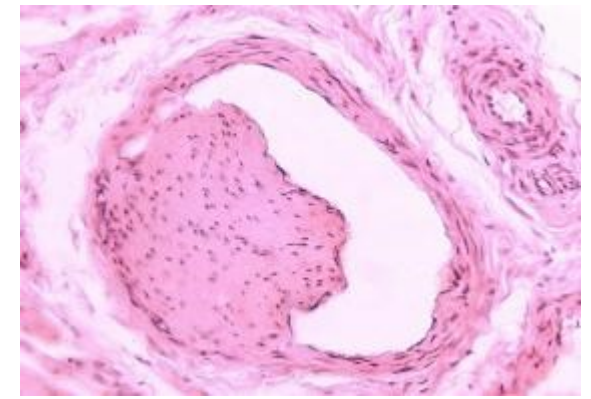
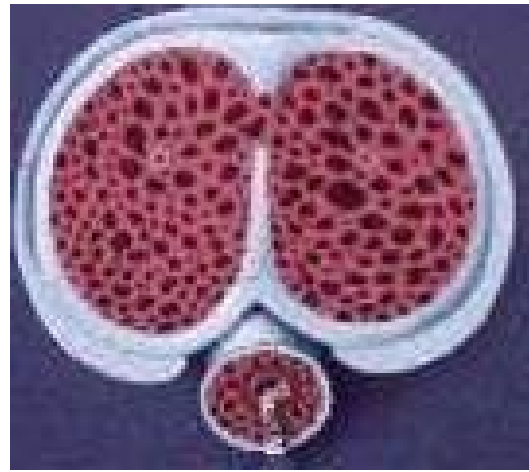
Corpus cavernosum penis  
 Corpus spongiosum penis  
 Glans penis  
 Tunica albuginea

V. dorsalis penis  
 A. dorsalis penis  
 N. dorsalis penis  
 Aa. profundae penis



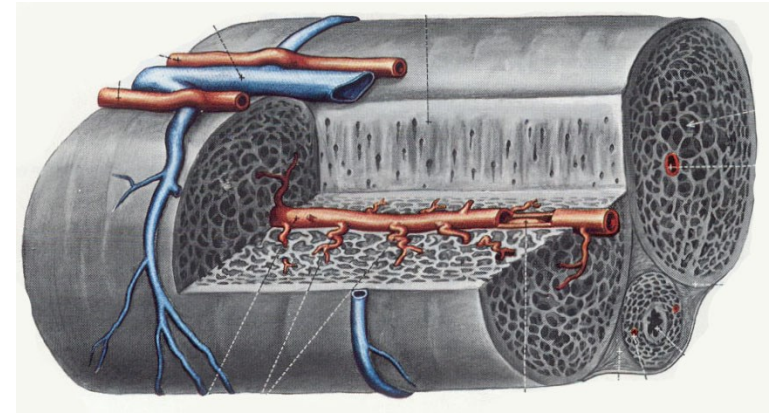
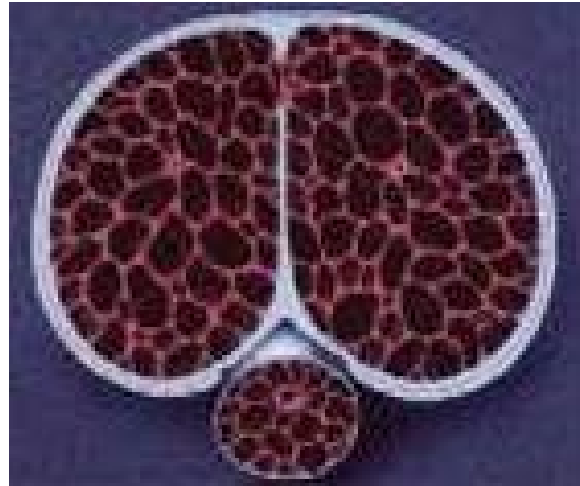
Erektion

Parasimpatischer Einfluss



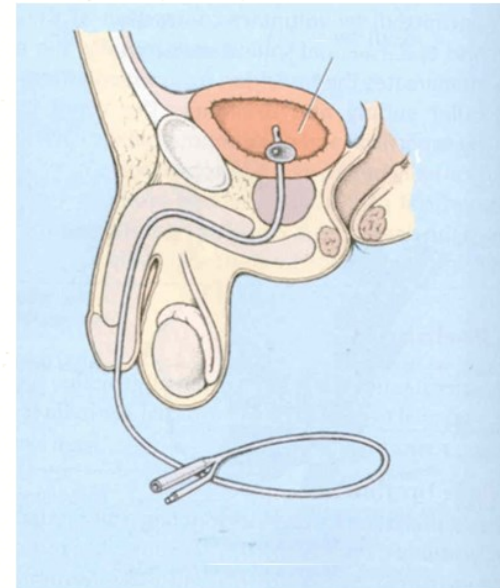
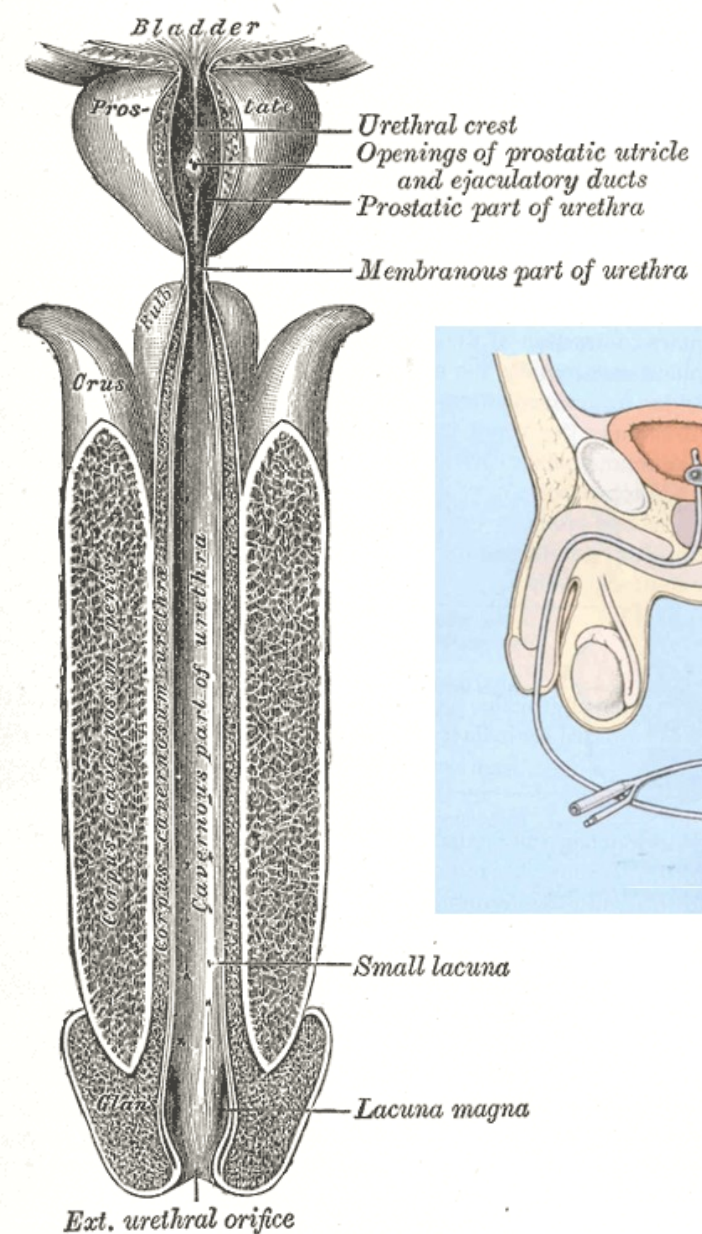
Ejakulation

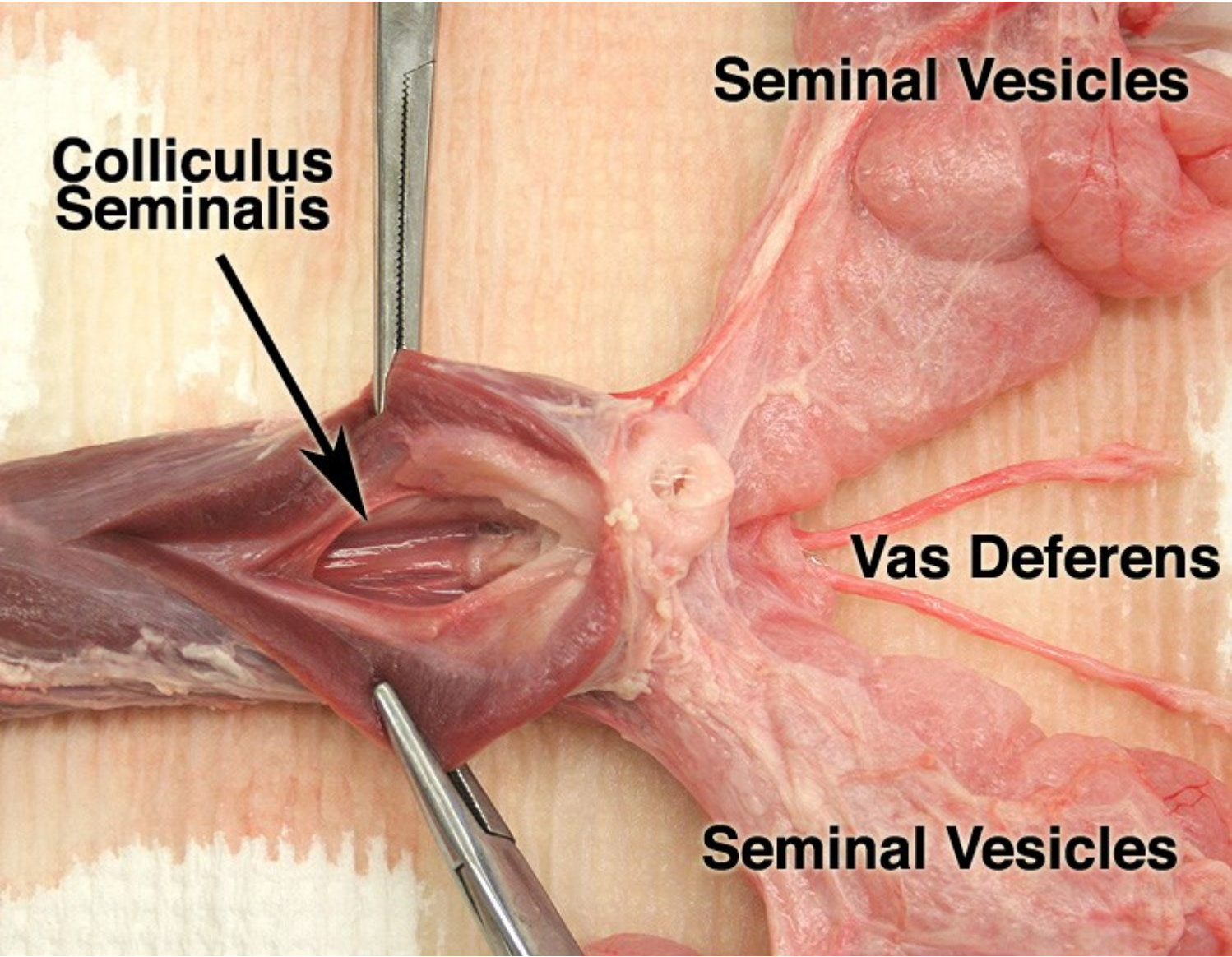
Sympatischer Einfluss



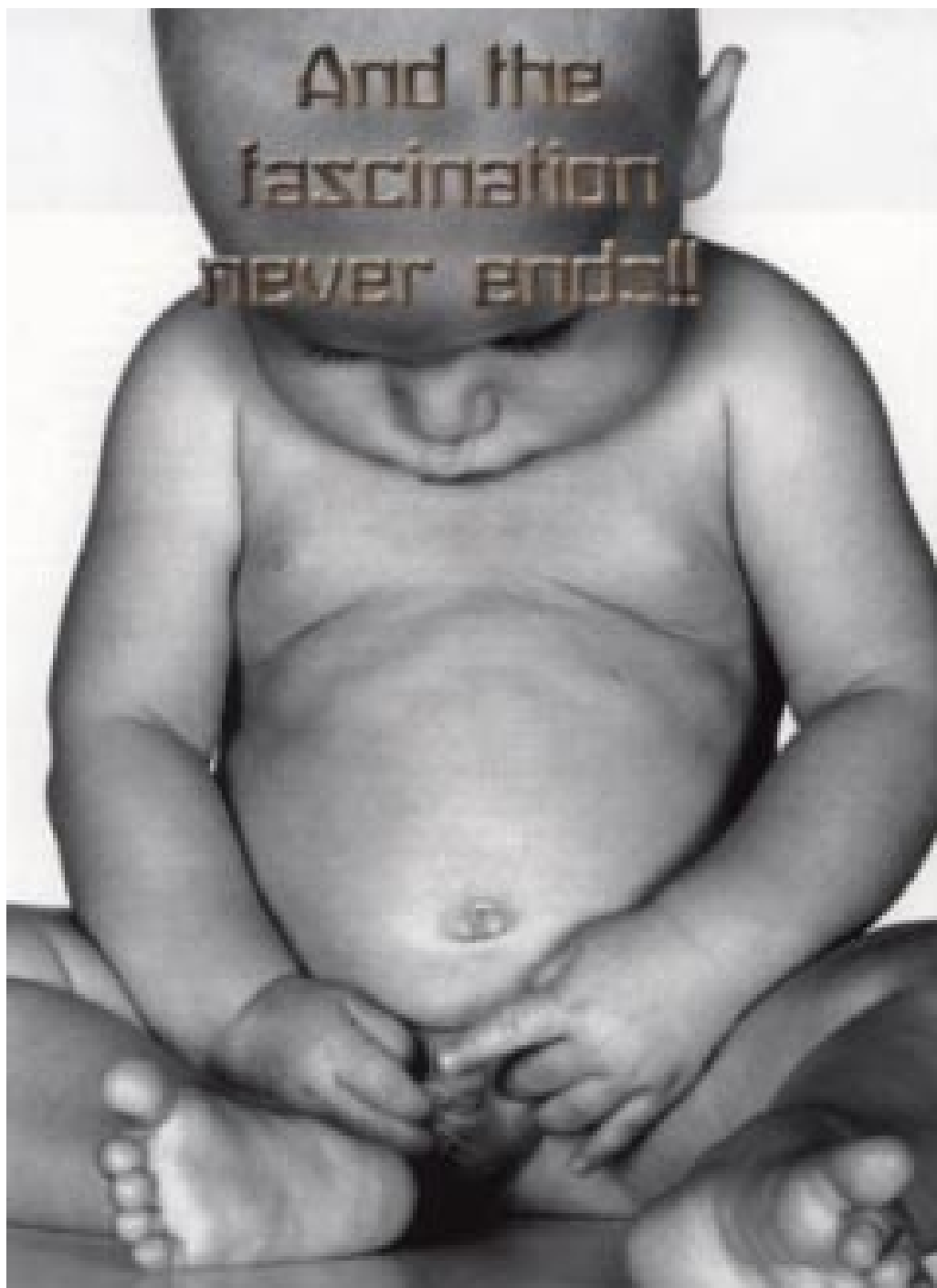
# Urethra masculina

1. Ostium urethrae internum
2. Pars prostatica:  
Mündung von Ductus ejaculatorius
3. Pars membranacea: Diaphragma urogenitale
4. Pars spongiosa: Corpus spongiosum penis
5. Ostium urethrae externum

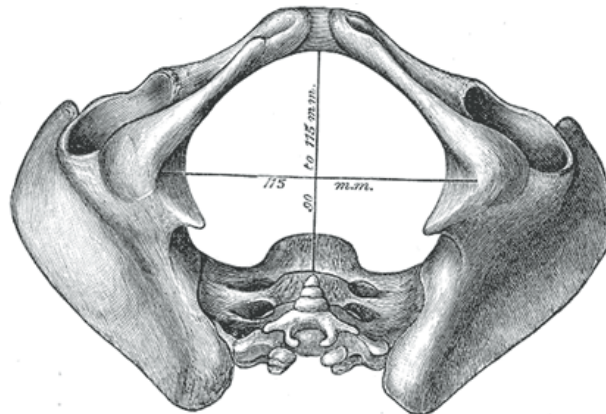
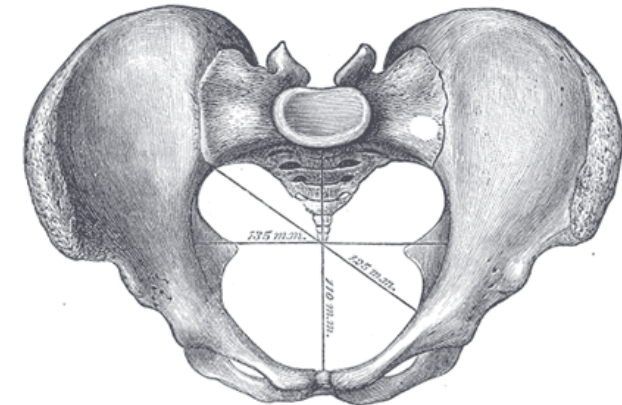
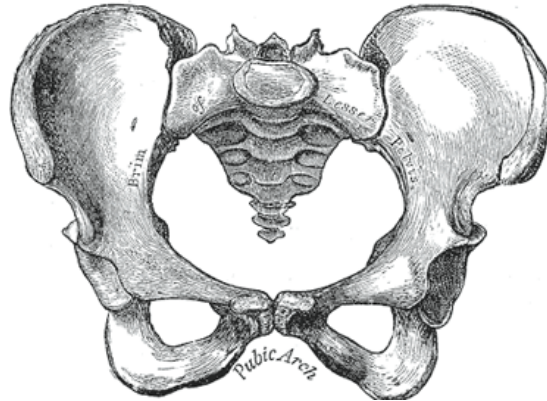
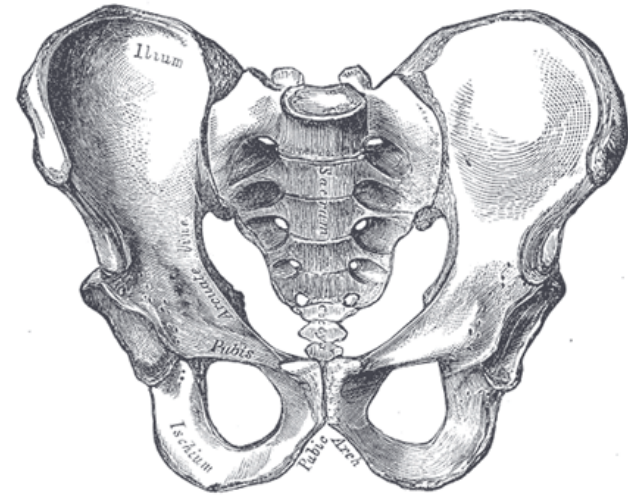




And the  
fascination  
never ends!!

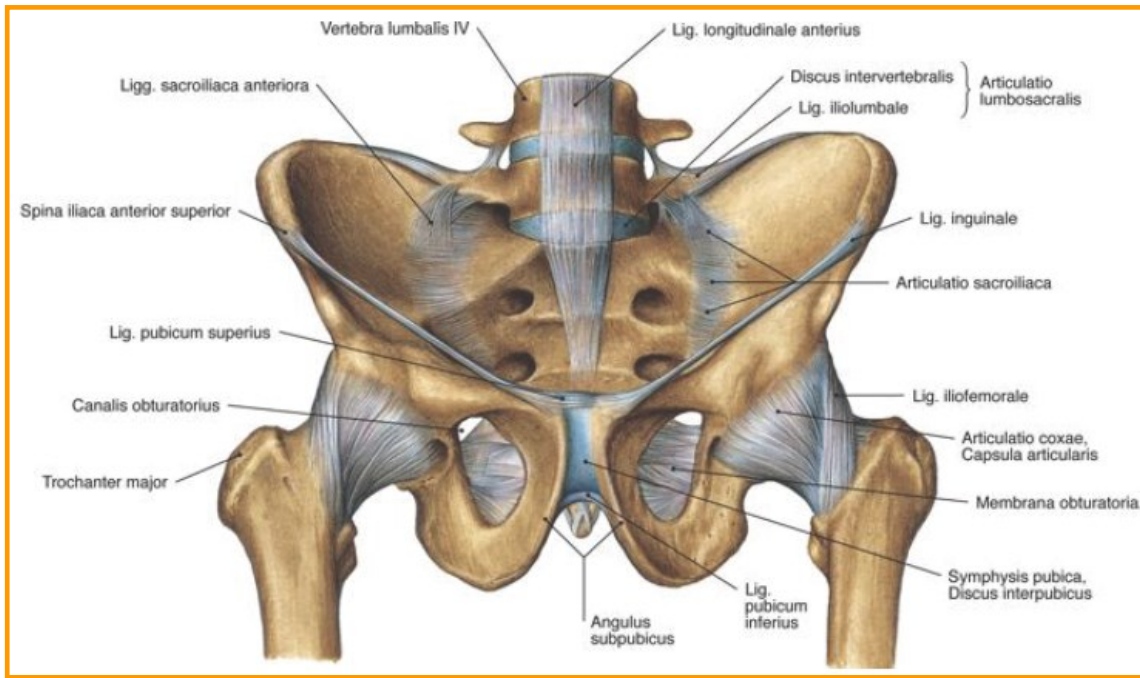


# Becken



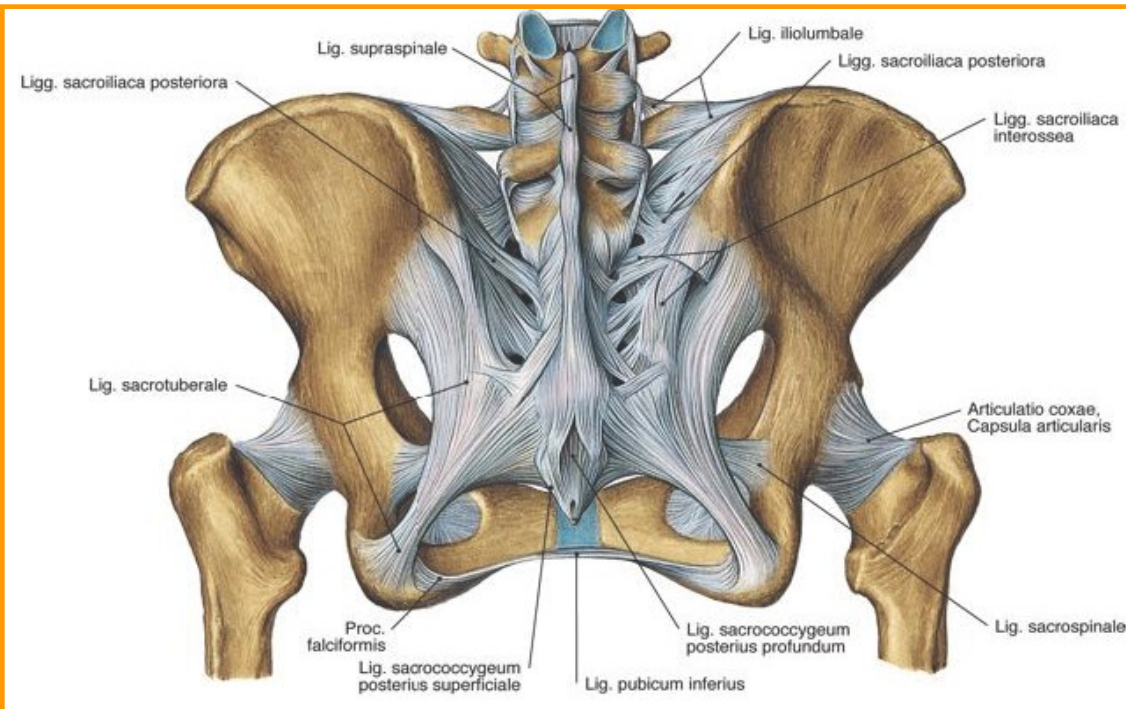
Hüftbein (*Os coxae*)  
Kreuzbein (*Sacrum*)

	FEMALE	MALE
PELVIC INLET		
PELVIC OUTLET		
PELVIC CAVITY		
PUBIC ARCH		

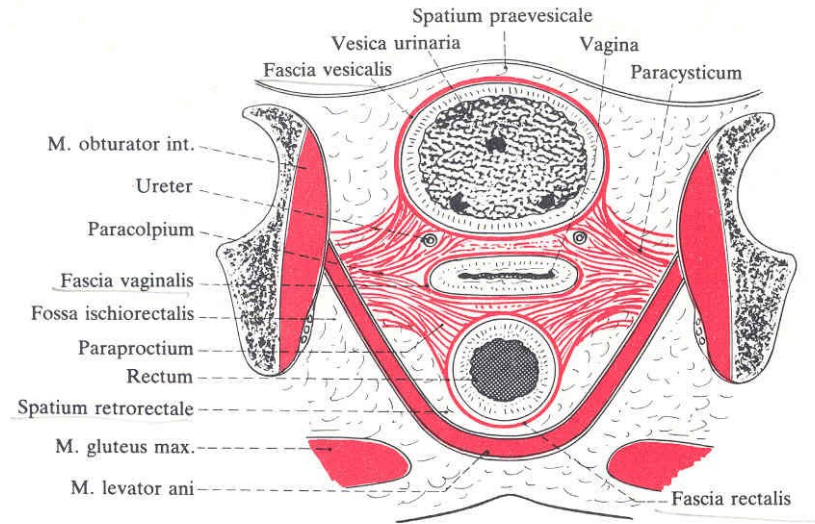
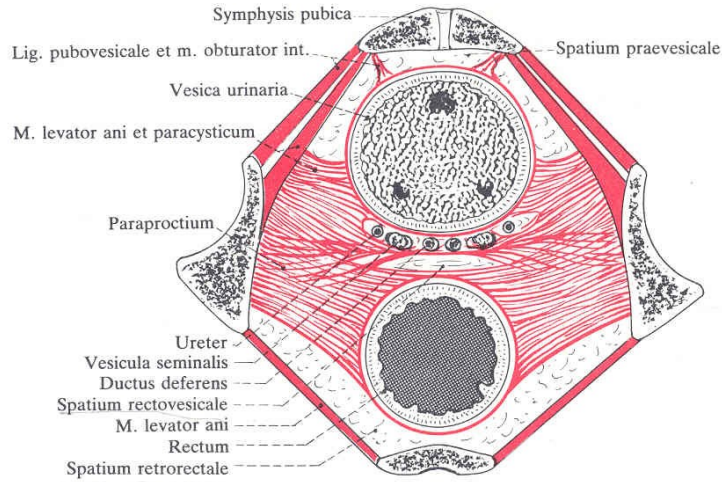


Art. sacroiliaca  
Bänder:

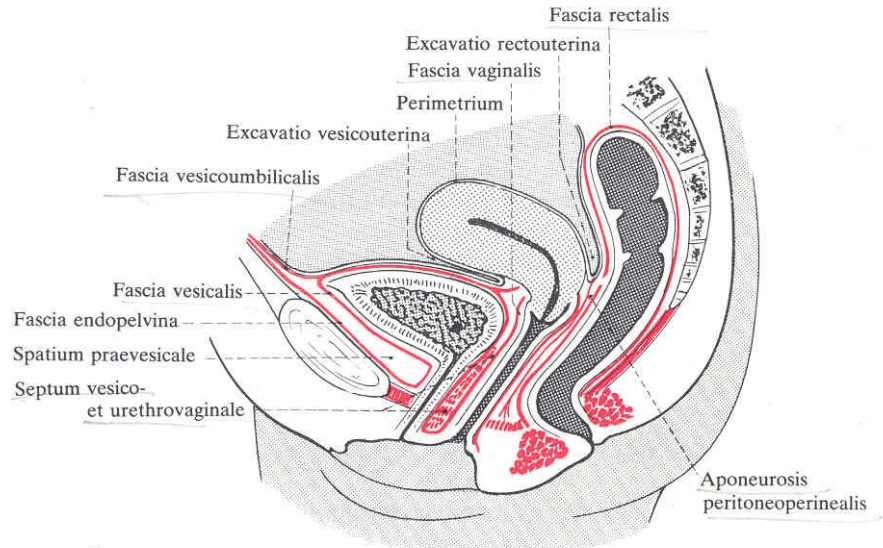
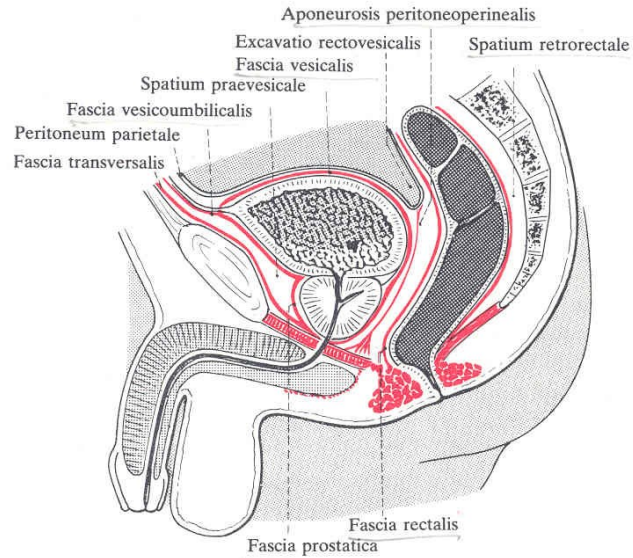
- Lig. iliolumbale
- Membrana obturatoria
- Lig. Sacrotuberale
- Lig. Sacrospinale



# Beckeneingeweiden

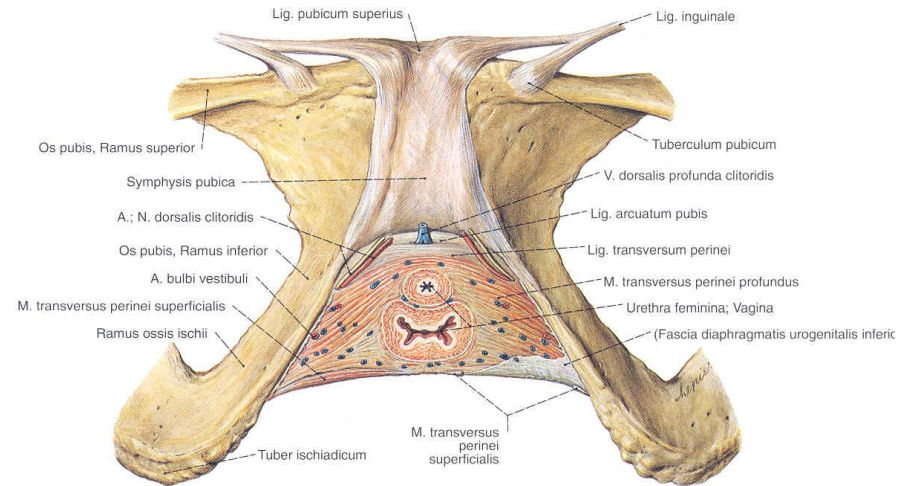
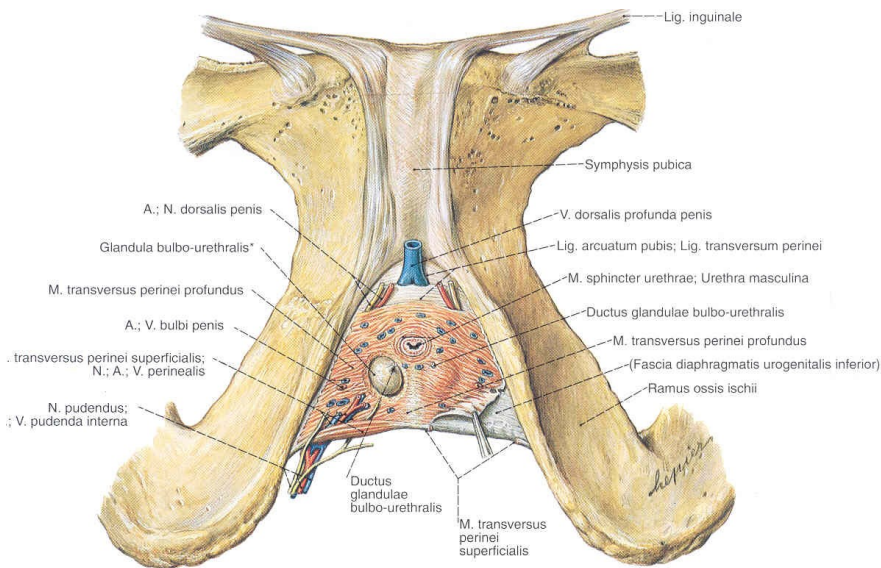
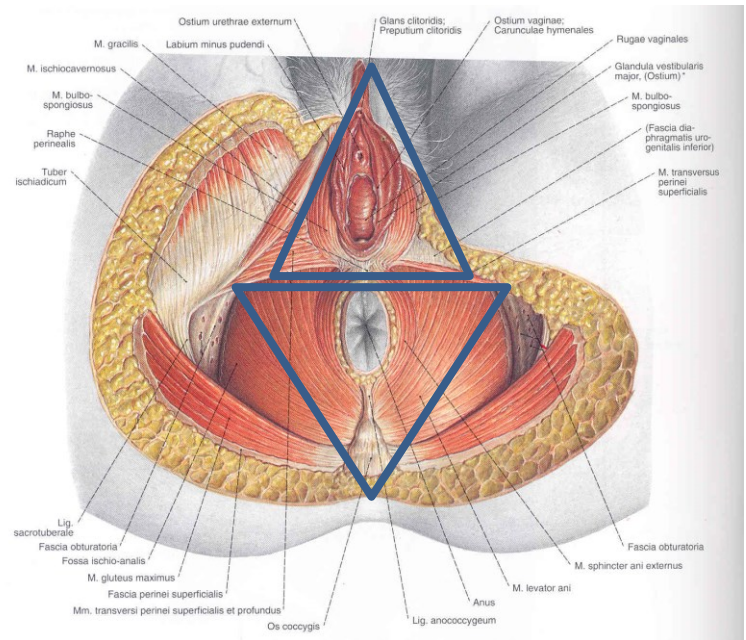
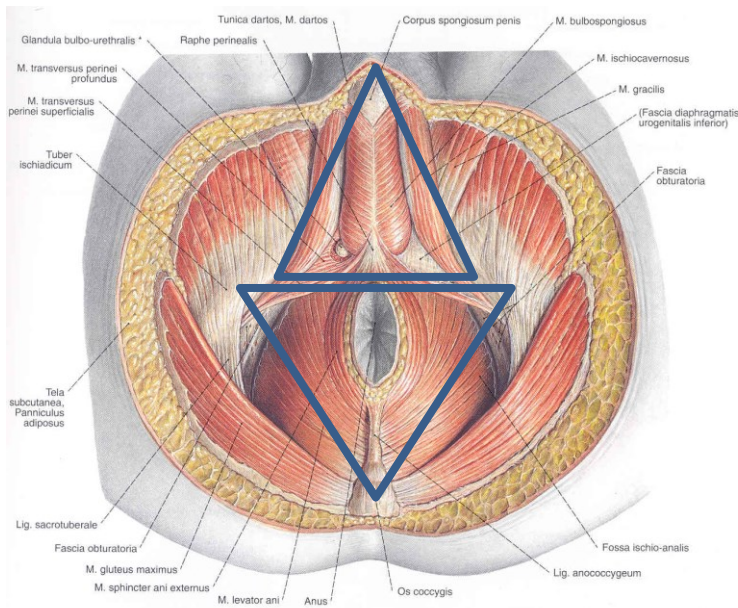


A



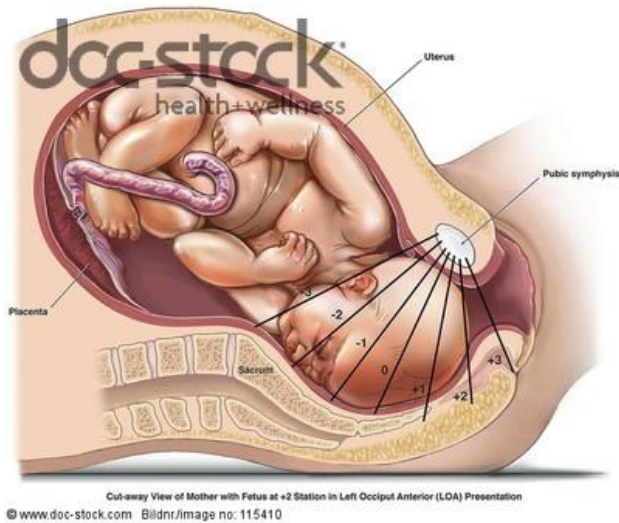
B

# Diaphragma urogenitale Diaphragma pelvis





# Geburtskanal



Das kindliche Köpfchen beugt sich und dreht sich im Nacken, um tiefer in die runde Beckenhöhle eintreten zu können. Auf seinem ganzen Weg vom Beckeneingang bis auf den Beckenbogen ist das kindliche Köpfchen gebeugt.

Danke für die Aufmerksamkeit!

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