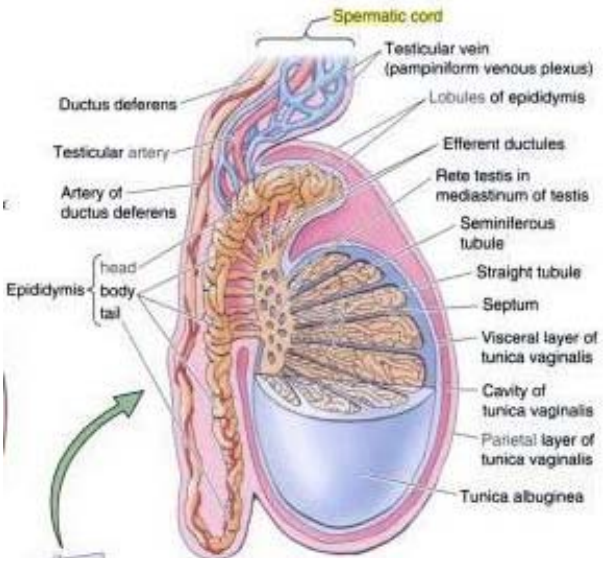
MALE REPRODUCTIVE SYSTEM

Revised 12 April 2016 (see also Balinsky. p 61 etc.)(Ganong)
Martini's 6th: 1047-1064, 7th: 1031-1047, 8th: 1043-1059, 9th: 1032-1049, 10th:



Draw and label: OVERVIEW: P 1036

TESTES STRUCTURE AND FUNCTION: (p 1037, 1042)

Tunica albuginea	capsule around testis
septa	between lobules
seminiferous tubules (1035)	form spermatozoa
spermatogonia	line basement membrane
spermatocytes (1° & 2°)	pushed away from basement membrane
Sertoli cells	nurse cells
Interstitial cells of Leydig	synthesize testosterone
rete testis (P 1052)	collects differentiated spermatozoa
efferent ducts	ciliated, carries to epididymus
head of epididymis	spermatozoans mature
tail	
vas deferens	ciliated, loops over ureter
spermatic cord	See previous page of notes

SCROTUM: (1035 & 1036)

Descent of testes caused out pouching of

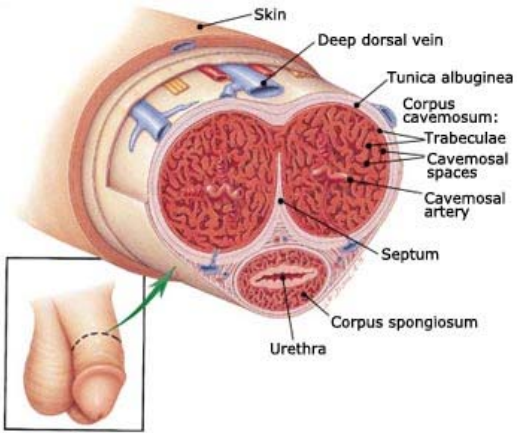
peritoneum	(vaginal process) (note that the peritoneum does not contain the testes, they are retroperitoneal)
gubernaculum	("rudder little") *fibromuscular band* attached to floor of scrotum and to testes, causes them to descend.
cremaster muscle	("suspender") extension of **abdominal internal oblique**, raises testes during cold, & final phases of sex.
dartos tunic	thin layer of smooth muscle under skin. Cold: wrinkles scrotum, warm: relaxes

DUCTUS DEFERENS AND ACCESSORY ORGANS (p 1053)

ampulla
seminal vesicle
ejaculatory duct (just before vas joins urethra)
prostate (makes prostoglandins as well as seminal fluids)

PENIS: (p 1045)

bulbourethral glands (cowper's gland)
penis
corpora cavernosa (two, dorsal) form **crura** ("legs")
corpora spongiosum (one, with urethra)
glans penis
prepuce



SEMEN: (p 1045):

SEMEN COMPOSITION:

spermatozoa ()
HCO_3^-
ascorbic acid
spermine (polyamine: $NC_3NC_4NC_3$ N)
fructose (semen about 50% fructose)
mucus
fibrinogenase

GLAND CONTRIBUTION:

prostate (15-33%)
seminal vesicle (60%)
Cowpers (bulbourethral gland)

Production:	2.5 mL to 3.5 mL per ejaculation after 3 days continence.
Concentration	~100,000,000/mL sperm (50% sterility if 20-40 x 10^6, *all* under 20 x 10^6.)

SEXUAL RESPONSE:

Erection: **parasympathetic stim:** dilation of arterioles of penis stim by either physical stim, or erotic psychic stim, Filling with blood, the dilated arteries compress the veins, block outflow.

ORGASM two stages:

Emission: (movement into urethra) fluids move fr prostate to prostatic urethra
Smooth muscle contractions moves into urethral bulb, which doubles in size, cremaster draws up testes.
Sense of impending orgasm

Ejaculation: **sympathetic** impulses: propulsion out of urethra by skeletal muscles (bulbocavernosus muscle)
spinal reflex mediated by centers in sacral/lumbar region of spine (rhythmic contractions of pelvic floor)
intense pleasure

Resolution: Sympathetic vasoconstrictor impulses on arterioles terminate erection, followed by **refractory period**

Testosterone synthesized from cholesterol in interstitial cells of Leydig, Keto at #17

Androgens: increase penis size, scrotum pigmented, seminal vesicles enlarge, secrete, form fructose. Larynx enlarges.