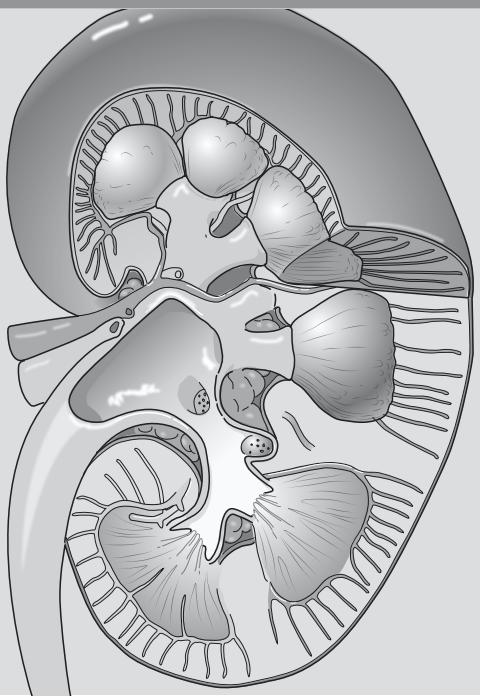
ACTIVITY



12

URINARY AND REPRODUCTIVE SYSTEMS

OBJECTIVES

- ☐ **How to get ready:** Read CHAPTERS 27 AND 28, MCKINLEY ET AL., *HUMAN ANATOMY*, 2024 RELEASE. All text references are for this textbook
- ☐ Identify structures in the urinary system on models and donors. **YOU MUST BRING GLOVES FOR THIS ACTIVITY.**
- ☐ Histology: Identify structures involved in filtration on a slide or photo of a renal corpuscle.
- ☐ Complete a trace of blood flow through the kidney and a trace of filtrate/urine flow through the nephron loop and urinary system organs.
- ☐ Identify gross anatomical structures of the female reproductive tract.
- ☐ Identify gross anatomical structures of the male reproductive tract.
- ☐ Trace semen production and then spermatozoa to site of fertilization during sexual reproduction.

Activity 12

URINARY SYSTEM

TABLE 12-1. Organs of the urinary system

STRUCTURE	TEXT REFERENCES AND NOTES
☐ kidneys	**FIG. 27.1**
☐ ureters	
☐ urinary bladder	
☐ urethra	

TABLE 12-2. Gross anatomy of the kidney, coronal section

STRUCTURE	TEXT REFERENCES AND NOTES
☐ fibrous capsule	**FIG. 27.3**
☐ renal cortex	
☐ renal medulla	
☐ renal columns	
☐ renal pyramids	
☐ renal papilla	
☐ minor calyx (pl., *calyces*)	
☐ major calyx	
☐ renal pelvis	
☐ renal lobe	
☐ renal artery	
☐ renal vein	

TABLE 12-3. Blood flow through the kidney

STRUCTURE	TEXT REFERENCES AND NOTES
☐ renal artery	**FIG. 27.4, 27.5, 27.7**
☐ segmental artery	
☐ interlobar artery	
☐ arcuate artery	
☐ interlobular artery	
☐ afferent arteriole	
☐ glomerulus	
☐ efferent arteriole	
☐ peritubular capillaries	
☐ vasa recta	
☐ interlobular vein	
☐ arcuate vein	
☐ interlobar vein	
☐ renal vein	

TABLE 12-4. Nephron structures, including uriniferous tubule. Identify the following structures from a slide, photo, or model.

STRUCTURE	TEXT REFERENCES AND NOTES
☐ renal corpuscle = glomerulus + glomerular capsule	**FIG. 27.5, 27.7, 27.8**
☐ glomerular capsule (*or* Bowman's capsule)	
☐ visceral layer of glomerular capsule (composed of podocyte cells)	
☐ capsular space	
☐ parietal layer of glomerular capsule	
☐ proximal convoluted tubule	
☐ nephron loop (*or* loop of Henle)	
☐ descending limb	
☐ ascending limb	
☐ distal convoluted tubule	
☐ collecting duct	

TABLE 12-5. Gross anatomy of the urinary bladder and urethra

STRUCTURE	TEXT REFERENCES AND NOTES
☐ ureter	**FIG. 27.9, 27.10**
☐ urinary bladder	**FIG. 27.11**
☐ detrusor muscle	
☐ urinary trigone	
☐ ureteral openings	
☐ internal urethral sphincter	
☐ urethra	
☐ urogenital diaphragm	
☐ external urethral sphincter	
Male urethra	**FIG. 27.12B**
☐ prostatic urethra	
☐ membranous urethra	
☐ spongy urethra	
☐ external urethral orifice	
Female urethra	**FIGURE 27.9, 27.12B, 28.2**
☐ urethra	
☐ external urethral orifice	

KIDNEY BLOOD TRACE

From heart to kidney and back to heart:

left atrium

ascending aorta

descending abdominal aorta

vasa recta/peritubular capillaries

right atrium

pulmonary semilunar valve

pulmonary capillary bed

left atrium

MALE URINE TRACE

From glomerular capsule to external environment:

glomerular capsule

collecting duct

ureteral openings into urinary bladder

external environment

REPRODUCTIVE SYSTEM

TABLE 12-6. Female reproductive organs and structures

STRUCTURE	TEXT REFERENCES AND NOTES
External Structures	
□ vulva	FIG. 28.9
□ perineum	
□ mons pubis	
□ labia majora	
□ labia minora	
□ clitoris	
□ prepuce	
□ body	
□ glans	
□ Erectile bodies of the clitoris	
□ corpora cavernosa	
□ crus. (pl. crura) of the clitoris	
□ bulbs of the vestibule	
□ vestibule	
□ external urethral orifice	
□ vaginal orifice	
Internal Structures	
□ ovaries	FIG. 28.2, 28.3, 28.4, 28.7
□ uterine (or fallopian) tubes (or oviducts)	FIG. 28.2, 28.3, 28.7
□ infundibulum with fimbriae	
□ ampulla	
□ isthmus	
□ uterine part (or interstitial segment)	

TABLE 12-6. Female reproductive organs and structures

STRUCTURE	TEXT REFERENCES AND NOTES
□ uterus	**FIG. 28.2, 28.7**
□ fundus	
□ body	
□ isthmus	
□ cervix	
□ endometrium	
□ myometrium	
□ perimetrium	
□ vagina	**FIG. 28.2, 28.7**
Ligaments and Associated Structures	
□ round ligament of uterus	**FIG. 28.3, 28.7**
□ broad ligament	
□ uterine artery and vein	
□ ovarian ligament	
□ suspensory ligament of ovary	
□ ovarian artery and vein	

TABLE 12-7. Mammary glands

STRUCTURE	TEXT REFERENCES AND NOTES
□ pectoralis major muscle	**FIG. 28.10**
□ areola	
□ nipple	
□ lobule	
□ adipose tissue	
□ suspensory ligaments	

TABLE 12-8. Male reproductive organs and structures

STRUCTURE	TEXT REFERENCES AND NOTES
❐ testis (pl., *testes*)	**FIG. 28.11, 28.12, 28.13**
❐ scrotum	
❐ epididymis	
❐ ductus deferens (*or* vas deferens)	
❐ ampulla of ductus deferens	
❐ prostate gland	
❐ ejaculatory duct	
❐ seminal vesicle	
❐ bulbourethral gland (in urogenital diaphragm)	
❐ urethra	

STRUCTURE	TEXT REFERENCES AND NOTES
❐ spongy (penile) urethra	**FIG. 28.11, 28.15, 28.17**
❐ body of penis	
❐ dorsal surface with dorsal vein	
❐ ventral surface	
❐ glans (*or* glans penis)	
❐ prepuce	
❐ erectile bodies of the penis	
❐ corpus cavernosum (pl., *corpora cavernosa*)	
❐ crus (pl. crura) of penis	
❐ corpus spongiosum	
❐ crus of penis	

TABLE 12-9. Inguinal canal (male)

STRUCTURE	TEXT REFERENCES AND NOTES
❐ external (superficial) inguinal ring	**FIG. 28.12**
❐ internal (deep) inguinal ring	
❐ spermatic cord with:	
❐ ductus deferens	
❐ testicular artery and vein	

GAMETE TRACE TO FERTILIZATION DURING SEXUAL REPRODUCTION

From testis (including locations where glands/ducts secrete), to female anatomy, ending at fertilized egg (zygote):

TESTIS	(site of spermatozoa production)
	(site of spermatozoa maturation)
	(tube leading from testes to body cavity)
	(wide portion in the above tube leading from testes to body cavity)
SEMINAL VESICLE	(adds components to semen)
	(adds components to semen)
	(tube leading from prostate gland to urethra)
	(adds components to semen)
	(tube leading from urogenital diaphragm through penis)
	(opening through which semen leaves the male body)
VAGINAL CANAL	
	(projection of uterus into vagina)
	(narrowest portion of uterus)
	(widest portion of uterus)
	(upper portion of uterus)
UTERINE PART OF UTERINE TUBE	
	(narrow region of uterine tube)
	(region of uterine tube in which fertilization generally occurs)
FERTILIZATION/CREATION OF ZYGOTE	

Activity 12

STUDY AIDS FOR URINARY AND REPRODUCTIVE SYSTEMS

Helpful terms for Urinary and Reproductive Systems

ANATOMICAL TERMS	DESCRIPTION
arcuate	curved or arched
cervix	neck
afferent	carrying to
detrusor	to drive away
calyx	cup
cavernosum	containing cave-like spaces
convoluted	intricately folded, coiled, or twisted
ductus deferens	duct that carries down
efferent	carrying out
epididymis	upon testis
fimbriae	fringes
fundus	base
glomerulus	to roll up, a ball of thread
infundibulum	funnel
isthmus	narrow passageway
labia	plural of labium = lip
pelvis	basin
prostate	something that stands before (before urinary bladder)
sphincter	a tight binder
prepuce	foreskin
scrotum	leather
spongiosum	sponge
trigone	a triangle
vulva	female external genitalia