Assessment of Renal and Urinary Tract Function

Shu-Yi (Emily) Wang, PhD, RN, CNS
gpwsy@hotmail.com

Denver School of Nursing
Kidneys, Ureters, & Bladder

- **Urinary Elimination**
  - **Kidneys**
    - Glomerulus: the capillary bed responsible for glomerular filtration
    - Nephron
  - **Ureters**
    - Three narrowed areas
      - Ureteropelvic junction
      - The ureteral segment near the sacroiliac junction
      - Ureterovesical junction
  - **Bladder-storage urine**
    - Distended
    - Males – prostate gland
  - **Urethra-control passage of urine**
    - Internal sphincter
    - External sphincter

Figure 43-1, pp. 1494
Nephron (1 million)

- Glomerulus
- Proximal Tubule
- Loop of Henle
- Distal tubule
- Collecting duct

Figure 43-2, pp. 1495
Formation of Urine (cont)

Figure 43-3, pp. 1496
Renin Angiotensin System

Figure 43-4, pp. 1498
Mechanism of renovascular hypertension

1. Renal artery stenosis causes reduction of blood flow to kidneys.
2. Kidneys secrete renin in response.
3. Renin combines with angiotensinogen in the liver to form angiotensin I.
4. In the lungs, angiotensin I is converted to angiotensin II, a vasoconstrictor.
Cystoscopic Examination

- Direct inspection of the urethra and interior of bladder
- Burning on voiding, blood-tinged urine, and urine frequency from trauma can be expected
- Moist heat, warm sitz baths in relieving pain and relaxing the muscles