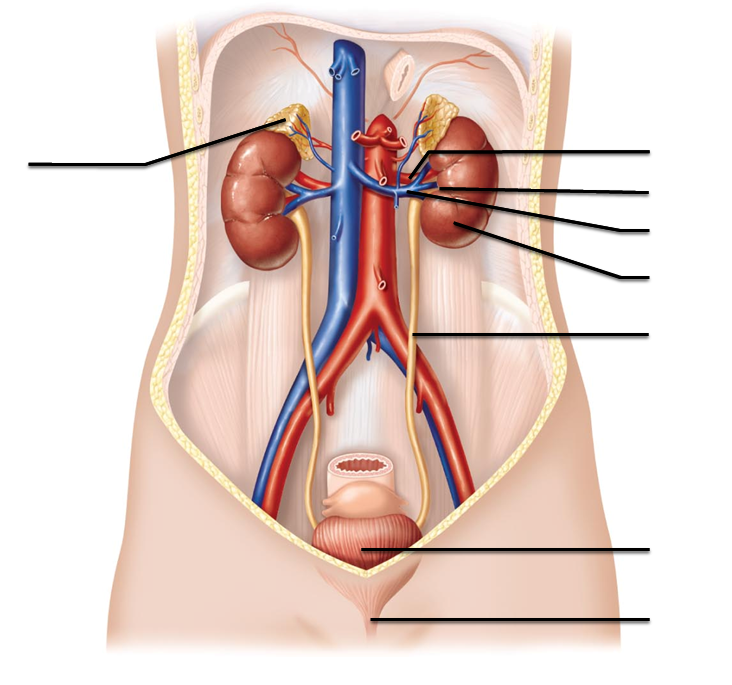
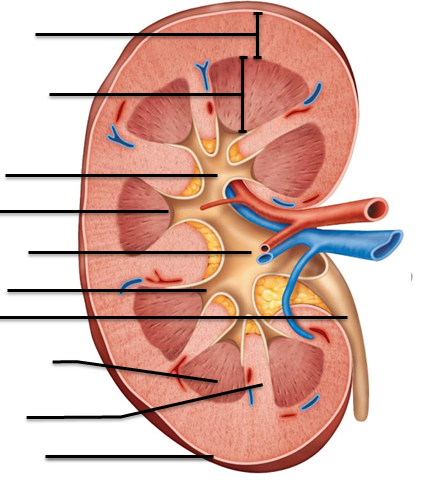
Pages 954 - 957 Kidney anatomy

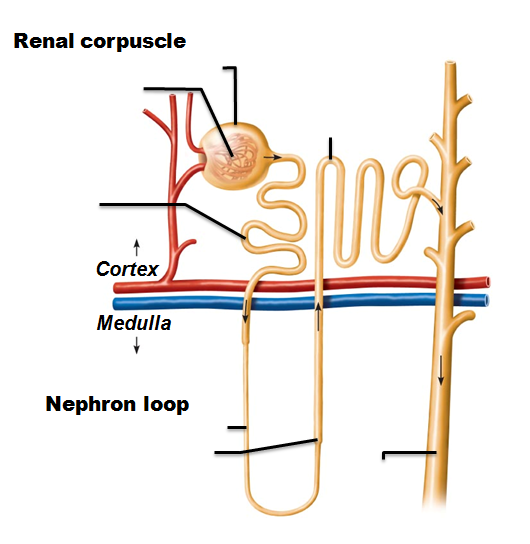
1.  Label the structures indicated
2. One of our kidneys is lower (more inferior) than the other. Which one and why?
3. What is the function of the perirenal fat capsule?
4. What are the three regions of the kidney seen with a frontal section?
5. Identify the structures



1. Describe the location of the cortex. The medulla. And the Pelvis.
2. What are the calyces?
3. What is the difference between pyelitis and pyelonephritis?

Pages 958 – 963 Nephrons

1. What is a nephron?
2. What is the glomerulus?
3. “glom” =
4. The Glomerular capillaries are designed for filtration. What type of capillaries would you expect to find here?
5. Identify the structures of the nephron below



1. What are podocytes and where are they found?
2. What are the three regions of the renal tubule?
3. What advantage does having a brush border/microvilli have in the in proximal convoluted tubule?
4. How do the cells of the DCT compare to the PCT?
5. The collecting ducts fuse together to become what structure?
6. Compare the placement and function of a cortical nephron versus a juxtaglomerular nephron
7. The renal tubules are dedicated pathways for the filtrate/urine. What are the capillary structures associated with the nephrons?
8. What regions of the nephron are used to make the juxtaglomerular apparatus (complex)?
9. What are the three types of cells of the juxtaglomerular apparatus/complex and what are they responsible for?

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Pages 963 – 972 Urine Formation

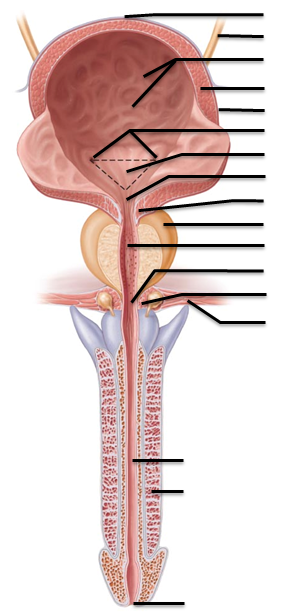
1. List and outline the main events of each of the three stages of urine formation
2. Compare “filtrate” to “urine”
3. What is hydrostatic pressure? How does it affect glomerular filtration?
4. Glomerular filtration rate shares a direct relationship (when they go increase, the GFR increases) with which factors?
5. What is renal autoregulation? When is it used?
6. With what type of blood pressure change does the autoregulation method fail?
7. How does the sympathetic nervous system impact nephron function?
8. Triggering the Renin-Angiotensin mechanism causes what type of change with blood pressure and blood volume?
9. The second stage of urine formation is tubular reaborption. What is “reabsorption?”
10. What are aquaporins? What is the relationship between aquaporins and ADH?
11. What happens when the transport maximum is reached/exceeded?
12. Discuss how the following hormones affect the Distal Convoluted Tubule and the Collecting Duct

|  |  |  |
| --- | --- | --- |
| **Hormone** | **Affect on Tubule?** | **Outcome?** |
| ADH |  |  |
| Aldosterone |  |  |
| ANP |  |  |

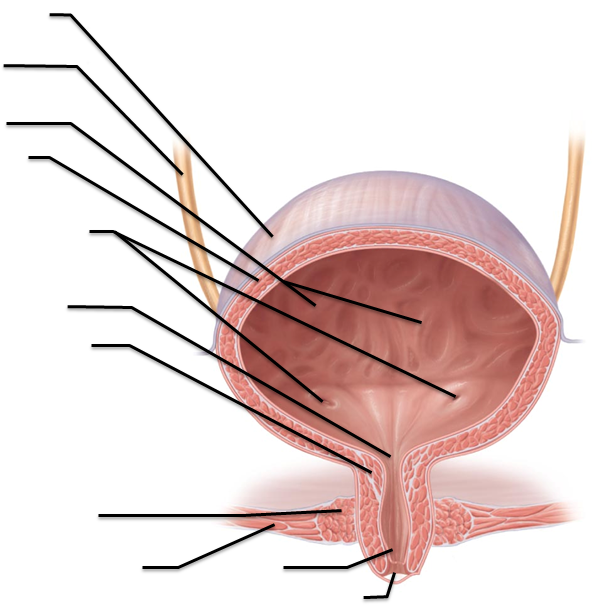
1. How does tubular secretion deal with K+ and H+?

Pages 976- 985

1. What steps are taken in the nephron if we have too much water in our system? Too little?
2. What does a diuretic do?
3. Why would renal clearance test be performed?
4. What happens to filtrate formation during Chronic Renal Disease?
5. What is “uremia”?
6. What is urochrome, and where does it originate?
7. What is the pH range for urine?
8. What is specific gravity? What does a specific gravity test tell us about urine?
9. What layers do the ureters have?
10. What are “renal calculi” and what triggers their formation?
11. What is the condition called if red blood cells are in the urine? White Blood cells? Glucose?
12. What is the “trigone” and how is it important clinically?
13. Identify the structures indicated:



1. Identify the following structures:



1. What is “dysuria”?
2. Why are women more prone to urinary tract infections than men? What factors increase the risk of infection?
3. What is “micturition”
4. Compare stress incontinence to overflow incontinence
5. What is hypospadias?
6. Compare autosomal dominant polycystic kidney disorder to autosomal recessive.

Related Clinical Terms, page 988

1. What is a cystocele?
2. What is nocturnal enuresis?
3. What is a Renal Infarct?
4. Label the image below from page 962

