HORMONAL REGULATION OF BLOOD PRESSURE
(And a couple of other things)

Hormones can influence blood pressure through their influence on cardiac output, vascular resistance, and blood volume. Blood pressure is directly related to the fluid and electrolyte status of the body. As blood volume increases, so will blood pressure. As blood volume decreases, blood pressure decreases. Electrolyte concentrations (e.g.: sodium and potassium) can alter the osmotic concentration of the blood and directly influence the fluid balance in the body. Of course you already know about the importance of proteins and osmotic concentration of the blood, but we won’t discuss them within the context of hormonal regulation—just don’t forget about them.

Hormone regulation of blood pressure is mentioned on p.753 and is summarized in Table 21.2 on p. 753. More details are scattered around your text and are mainly concentrated in Chapter 18. We’ll continue to dip into this chapter as we cover the endocrine aspects of each system. The hormones you need to know about now are:

- Epinephrine & norepinephrine—adrenal medulla (p. 645 and past notes)
- Antidiuretic hormone (ADH)—posterior pituitary (p. 633-634, Fig. 18.9)
- Angiotensin II & Aldosterone—Renin-Angiotensin Pathway—kidney, adrenal cortex, etc.  (See p.642-643 and Fig. 18.16 on p. 643 and supplemental handout in detail)
- Atrial natriuretic peptide (ANP)—heart (p.753)
- Histamine (not a hormone—but remember it’s effect and relate to this discussion)

You are responsible for diagramming the negative feedback mechanisms for each of these hormones. Know where each comes from, what each does, and how it specifically works to regulate blood pressure and/or fluid and electrolyte balance. You’ll have these again with Urinary System and also at the end as we conclude the semester with the Endocrine System… so just learn them now and get credit all three times!!!!

Syncope: Read Clinical Application on p. 749 and previous notes. Relate this to your overall knowledge of cardiovascular system. Remember, we already mentioned carotid sinus syncope in relationship to carotid sinus massage and in previous notes. No lecture on this.

Hypertension: Read pg. 798 and outline in detail. Relate this to your knowledge of the cardiovascular system. It is a good way to pull things together. No lecture on this.

Lipid Metabolism and Blood Cholesterol—Review pp 964-967 (this was assigned last semester and earlier this semester). Relate this to you knowledge of cardiovascular system. Connect it with your recent reading of Coronary Artery Disease (pp. 726-728). Make the connections!!!! No lecture on this.

Shock and Homeostasis: Read pp. 756-758. Study Fig. 21.16 and complete the supplemental handout on Shock and Homeostasis. Depending on time constraints, we may or may not have a lecture on this—it’s all in your text.