Bl 121 Lecture 8

**Welcome back – let’s get to work!!**

I. **Announcements** Tomorrow HR & BP Lab 4 + **Required Notebook Check.** Turn in today? Thurs Blood Chemistry Lab 5. Please read Lab 5 twice prior to Thursday. Thanks!

II. **Cardiovascular System** LS 2012 ch 9, Torstar Books 1984, DC 2013 Module 4, Guyton & Hall (G&H) 2011 +...
   - Circulatory vs Cardiovascular (CV)? cf + parts
     - LS pp 229, CV vs Lymphatic, DC pp 23, 31
   - CV Pulmonary & Systemic circuits
     - DC fig 4-1 p 24, LS fig 9-2b p 231
   - Arteries, capillaries, veins G&H + Torstar
   - Varicose veins? Phlebitis? DC
   - 🚨 layers, box, chambers, valves, inlets, outlets
     - LS fig 9-4 p 233, fig 9-2a p 231; DC pp 23-6
   - Normal vs abnormal blood flow thru 🏼 & CV system
     - Billy has a hole in his 🏼 SI Fox 2009 fig 13.16, 13.17

III. **Comments on Midterm & Tests Returned**

Bl 121 Lecture 9

I. **Announcements** Lab notebook due today! Lab 4 HR & BP. Thursday, Lab 5 Blood Chemistry. Read pp 5-1 thru 5-6 x 2. Q?

II. **Overview of Labs** HR & BP. Blood chem lab review

III. **Cardiovascular Connections** LS 2012 ch 9
   - A. Cardiac cycle? Contract-relax!
   - 🚪's electrical highway + Pacemaker activity
     - LS fig 9-7 p 235, tab 9-1 p 236, fig 9-8 p 237
   - C. NHLBI & AHA websites

IV. **CV Physiology in the News** NHLBI & AHA websites
   - Exercise & Nic? Exercise guidelines: ACSM, AHA, CDC

V. **CV Pathophysiology & Risk Reduction** LS ch 9, 10 +...
   - A. AMI, CVA, CVD, PVD, TIA, HTN? + surgical treatments
   - B. Atherosclerosis? LS fig 9-27, 9-25, 9-26 pp 266-8
   - C. How to minimize risk of CVDs? Treatment triad: Exercise, Diet, Drugs + Surgery
   - D. Food choices make a difference?
     - What’s HAPOC?

Bl 121 Lecture 10

**Announcements** Remember to read Lab 5 before Thursday. Thanks for helping us be well-prepared. Q from last time?

Calculating grade from estimated final. Keys to success? Q?

II. **CVD & Oil Connections** Anti-inflammatory vs. inflammatory?
   - S&W ch 5

III. **Blood Form & Function** LS ch 11 pp 296-304, 309-12
   - DC Module 5 + SI Fox + National Geographic Lennart Nilsson
   - A. Formed vs. nonformed/cells vs. plasma fig+tab 11-1
   - B. Red blood cells/erythrocytes: O₂-carrying
     - sickle cells, ABO blood typing, Rh factor pp 299-304.
   - C. White blood cells/leukocytes: Defense/immunity
     - differential + general functions pp 309-12
   - D. Platelets/trombocytes: Initial clotting p 304

IV. **Blood Glucose & Diabetes Mellitus** LS ch 17, DC Module 13

Bl 121 Lecture 11

I. **Lab 5 Review: Safety & Techniques** Q?

II. **Introduction to Endocrinology** LS ch 17, DC Module 13, SI Fox+
   - A. Endocrine vignette: Cushing’s syndrome LS fig 17-20 p 521-2
   - B. Endocrine system DC p 103 fig 13-1, LS fig 17-1, tab 17-1
   - C. What’s an endocrine? + classes ~ LS pp 495-6
   - D. Hypothalamus (Master) – Pituitary (subcontroller)
     - DC pp 104-6 + LS pp 499-506
   - E. Posterior pituitary + hormones DC p 108, LS fig 17-4 p 502
   - F. Anterior pituitary + hormones DC pp 105-7, LS pp 502-6
     1. Pancreas (insulin, glucagon, diabetes) 2. Thyroid 3. Adrenals

III. **Nervous System & Excitable Cell Connections** LS ch 5, 4, 7
   - A. How is the nervous system organized? fig 5-1 p 108
   - B. Neurons? What kind? fig 5-2 p 109
   - C. Brain structure & function fig 5-7, 5-8 pp 116-7
   - D. Protect your head with a helmet! Bicycle head injury statistics, NHTSA & BHSI
BI 121 Lecture 12

Thanks for your help with the blood chemistry lab!

I. **Announcements** Optional notebook check + Lab 6 tomorrow. Pulmonary Function Testing. Final exam > your Q on Wed. Q?

II. **Autonomic Nervous System Overview** LS pp 178 – 85
    LS Table 7-1 p 183 + stories to remember *fight-or-flight!*

III. **Neuromuscular Connections** LS ch 7 pp 186-92, DC pp 69-71
    How does the signal cross the nerve-muscle gap? LS fig 7-5
    A. Normal function? Ca2+ for bones!...but what else? LS p 190
    B. What do black widow spider venom, botulism, curare & nerve gas have in common? Botox? LS p 189-91

IV. **Muscle Structure, Function & Adaptation** LS ch 8, DC Module 12
    A. Muscle types: cardiac, smooth, skeletal LS fig 8-1 p 194-6
    B. How is skeletal muscle organized? LS fig 8-2, DC fig 12-2
    C. What do thick filaments look like? LS fig 8-4, DC fig 12-4
    D. How about thin filaments? LS fig 8-5
    E. Banding pattern? LS fig 8-3, fig 8-7
    F. How do muscles contract? LS fig 8-6, 8-10
    G. What's a cross-bridge cycle? LS fig 8-11 +...
    H. Summary of skeletal muscle contraction
    I. Exercise adaptation variables: **mode, intensity, duration, frequency, distribution, individual & environmental char...**
    J. Endurance vs. strength training continuum? fiber types...

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The final is coming! I'll be ready!!...