BI 121 Lecture 10

I. **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 Notebooks returned at the end of lecture today.

II. **CVDs Risk Reduction Connections** LS ch 9-10, DC Module 4 Minimizing risk of CVDs: U of O Smoke-Free! Exercise!! Can food choices make a difference? What’s HAPOC?

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/thrombocytes: Initial clotting p 304

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

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BI 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 x2. Q?

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

III. **Cardiovascular Connections** LS 2012 ch 9

A. Cardiac cycle? Contract-relax!

B. Heart’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. **Physiology in the News** NHLBI & AHA websites

V. **Pathophysiology & Risk Reduction** LS ch 9, 10 +

A. AMI, CVA, CVD, PVD, TIA, HTN? + surgical treatments

B. Atherosclerosis? LS fig 9-27, 29-25, 29-26 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?

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BI 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 fig17-20 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


H. Peripheral endocrine organs DC pp 109-13, LS pp 513-36

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

E. Autonomic nervous system overview LS pp 178 – 85
BI 121 Lecture 12

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...

BI 121 Lecture 13

I. Announcements
Optional notebook check today. Short t for Q followed by final exam tomorrow. Q?

II. Introduction to PFT Lab 6
Pulmonary Function Testing

III. Respiratory System
LS ch 12, DC Module 7, SI Fox +...
A. Steps of respiration? External vs. cellular/internal?
LS fig 12-1 pp 345-7
B. Respiratory system anatomy LS fig 12-2 p347, DC, SI Fox +...
C. Histology LS fig 12-4 pp 347-9, DC
D. How do we breathe? LS fig12-12, fig12-25 pp 349-56, 373-8
E. Gas exchange LS fig 12-19 pp 362-5
F. Gas transport LS tab 12-3 pp 365-70

IV. Physiology of Cigarette Smoking
A. ANS, autonomic nerves & nicotine? Route of chemicals,...
B. Emphysema? 2nd-hand smoke?... p 356, 365
C. UO Smoke-Free since Fall 2012! Help is available!

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