BI 121 Lecture 8

...We're back & rarin' to go for last 2 weeks!

I. *Announcements* HR & BP Lab 4 tomorrow + Required Notebook Check. Include Nutrition Analyses. Q? Exam I? Please read Blood Chemistry Lab 5 twice < Thurs. Thanks!

II. *Cardiovascular System* LS 2012 ch 9, Torstar Books 1984, DC 2013 Module 4, Guyton & Hall (G&H) 2011 +...

A. Circulatory vs Cardiovascular (CV)? cf + parts CV vs Lymphatic LS pp 229; DC pp 23, 31

B. CV Pulmonary & Systemic circuits DC fig 4-1 p 24, LS fig 9-2b p 231

C. Arteries, capillaries, veins G&H +Torstar

D. Varicose veins? Phlebitis? DC

E. ♥ layers, box, chambers, valves, inlets, outlets LS fig 9-4 p 233, fig 9-2a p 231; DC pp 23-6

F. Normal vs abnormal blood flow thru ♥ & CV system Billy has a hole in his ♥ SI Fox 2009 fig 13.16, 13.17

G. Cardiac cyle & heart murmurs?

III. *Aerobic Exercise: Heart & Blood Vessels. Strength?* ACSM

IV. *Cardiovascular Diseases Intro* LS ch 9 pp 252-7; DC pp 29-30

BI 121 Lecture 9

What about Exam I scores?...

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

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

III. *Cardiovascular Connections* LS 2012 ch 9, DC Mod 4 CVDs & exercise. Coronary arteries. ♥ attack?

IV. *CV Physiology in the News* NHLBI & AHA websites Nicole Kidman & exercise? ACSM, AHA, CDC guidelines

V. *CV Pathophysiology & Risk Reduction* LS ch 9, 10 +...DC Mod 4

A. Atherosclerosis? LS fig 9-27, 9-25, 9-26 pp 266-8

B. How to minimize risk of CVDs? Treatment triad: Exercise, Diet, Drugs + Surgery

C. PTCA, Stent, CABG? Bypass #?

D. Plant-based diet to minimize CVD! What's HAPOC?

BI 121 Lecture 10

...Fun lab week with much personal data!

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?

II. *CVDs Prevention & Treatment Follow-up or Q?* Exercise, dietary modifications, anti-inflammatory foods?

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: O_2-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 Glucose & Diabetes Mellitus* LS ch 17, DC Module 13

BI 121 Lecture 11

Fun lab today! Lifetime data! Thanks for being prepared!

I. *Blood Cell Connections* Q?

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

III. *Blood Glucose & Insulin* LS pp 530-2, DC pp 110-2

IV. *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

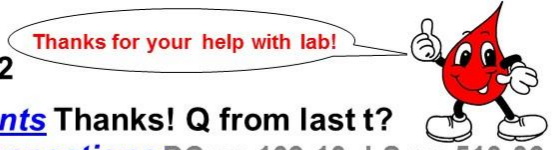
D. Hypothalamus (Master) – Pituitary (subcontroller) DC pp 104-6 + LS pp 499-506

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

G. GH: Body builder's dream? Fountain of youth? LS pp 506-11

H. Peripheral endocrine organs DC pp 109-13, LS pp 513-36
1. Pancreas 2. Thyroid 3. Adrenals



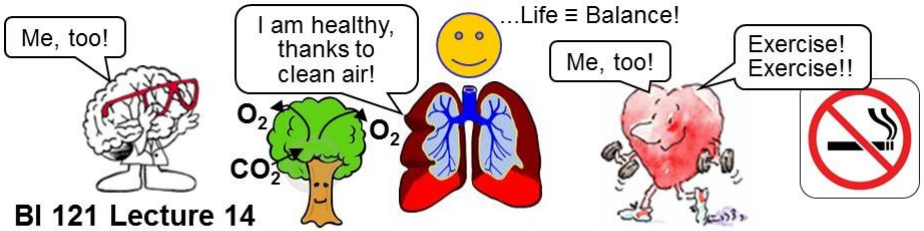
BI 121 Lecture 12

I. *Announcements* Thanks! Q from last t?

II. *Endocrine Connections* DC pp 109-13, LS pp 513-36
- A. GH glucose mismatch. B. Peripheral endocrine organs
- 1. Thyroid 2. Adrenals C. Stress response?

III. *Introduction to the Nervous System* LS ch 5, DC Module 9
- A. How organized? LS fig 5-1 DC p 67
- B. Neurons? What kind? Classes? Velocity? LS fig 5-2, 5-4
- C. What's myelin? How does it help? DC fig 9-3, LS pp 83-5
- D. Brain structure & function DC fig 9-6 thru 9-10 pp 71-5+…
- E. Protect your head with a helmet! Bicycle head injury statistics *NHTSA & BHSI*, 2013 & 2014

IV. *Autonomic Nervous System* LS ch 7 pp 178-85+...
- A. Sympathetic *vs* Parasympathetic branches LS fig 7-3
- B. Neurotransmitters & receptors LS fig 7-1 & 7-2, tab 7-2
- C. Actions LS tab 7-1
- D. Fight-or-flight stories!



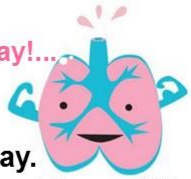
BI 121 Lecture 14

I. *Announcements* Notebooks returned. Discussion-Review followed by Exam II tomorrow. Q? Thanks for a super term! ☺

II. *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 p 347, DC, SI Fox+...
- C. Histology LS fig 12-4 pp 347-9, DC fig 7-4 p 54
- 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

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

Pulmonary Function Testing today! Hooray!...



BI 121 Lecture 13

I. *Announcements* Optional notebook ✓ + Lab 6 today. Pulmonary Function Testing. Final exam > your Q on Thurs. Q?

II. *Pulmonary Function Lab Overview*

III. *Neuromuscular Junction Overview* LS pp 186-92, DC pp 69-70

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...