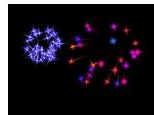


... Have a Safe, Happy 4th of July!!



BI 121
Lecture 8



I. Announcements Next Tues HR & BP Lab 4 + Required Notebook Check. Turn in today? Next Thurs Blood Chemistry Lab 5. Please read 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 LS pp 229, CV vs Lymphatic, 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



III. Comments on Midterm & Tests Returned?

...Fun lab week with much personal data!

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?

II. CVDs Prevention & Treatment Exercise, dietary modifications anti-inflammatory oils? PTCA, CABG, ... Torstar, 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/thrombocytes: Initial clotting p 304

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

What about MT scores?...

BI 121 Lecture 9

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
A. Normal vs abnormal blood flow!
B. ♥'s electrical highway + Pacemaker activity LS fig 9-7 p 235, tab 9-1 p 236, fig 9-8 p 237



IV. CV Physiology in the News Randy Foye, NBA player with *Situs Inversus*? 1:10,000! NHLBI & AHA websites Nicole Kidman & exercise? ACSM, AHA, CDC guidelines

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?



BI 121 Lecture 11

Fun lab today! Data for a lifetime!
Thanks for being prepared! ...

I. Lab 5 Review: Safety & Techniques Q?

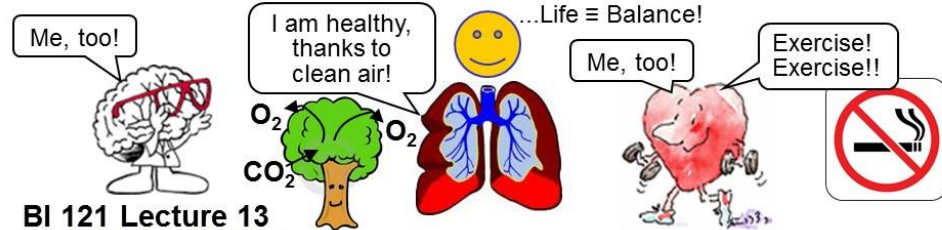
II. Introduction to Endocrinology LS ch 17, DC Module 13, SI Fox+

- 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
- 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 (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

- I. Announcements Optional notebook check + Lab 6 tomorrow. Pulmonary Function Testing. Final exam > your Q on Wed. Q?
- II. Brain + Autonomic Nervous System Overview DC pp 71-77, LS pp 178 – 85, tab 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. Discussion-Review 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!... 😊

