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?
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 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 Exam I & Exams Returned

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
Normal vs abnormal blood flow? Q?

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 +...
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 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 oils?

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

BI 121 Lecture 11

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
H. Peripheral endocrine organs DC pp 109-13, LS pp 513-36
1. Pancreas 2. Thyroid 3. Adrenals
BL 121 Lecture 12

I. Announcements Optional notebook check + Lab 6 tomorrow. Pulmonary Function Testing. Exam II > your Q on Thurs. Q?
II. Endocrine Connections Feedback loops, growth hormone, thyroid & adrenals DC Module 13 pp 109-13, LS pp 513-36
III. Nervous System & Excitable Cells DC Module 9, 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
IV. Brain + Autonomic Nervous System Overview DC pp 71-77, LS pp 178 – 85, tab 7-1 p 183 + Stories to remember fight-or-flight!
V. 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

BL 121 Lecture 13

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

Exam II Review Slides

STUDY SMART