BI 121 Lecture 8


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

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: 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: Cushings’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
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
   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 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...

Exam II Review Slides

STUDY SMART