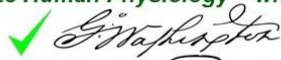




...Welcome to Human Physiology – what makes us tick!



BI 121 Lecture 1

- I. **Announcements:** Please check & sign attendance roster. Not on list? See Pat during break/> class. *Lab 1 Histology* Thursday in 130 HUE: 10 am → 5 pm sections. Much fun!!
- II. **Introduction:** Staff, office hr, required sources, overview, grading, expectations & success. Anything goes Q?
- III. **Human Physiology** LS ch 1, DC Module 1
 - A. What? cf: Anatomy LS p 1
 - B. Where? Body Levels of Organization LS pp1-6, DC pp1-5
 - C. How? Different Study Approaches LS p 1
 - D. Why? Security+Decision-Making Power LS p xxi, DC p v
- IV. **Homeostasis** LS ch 1, DC Module 1
 - A. What? Maintenance of ECF LS p 8
 - B. Where? ECF = Plasma + Interstitium LS fig 1-4 p 8
 - C. How? Simplified Homeostatic Model cf: LS fig 1-7 p 14 Balances LS p 9, DC pp 5-6
 - D. Why? Cell survival! LS fig 1-5 p 9, DC p 5



...Anatomy & Physiology Lab Thurs! Fun again!

BI 121 Lecture 3

- I. **Announcements** Q from last time? **Come to office hr!**
- II. **Connections** Homeostatic model: BP regulation
- III. **Cell Anatomy, Physiology & Compartmentalization** LS ch 2
 - A. How big? What boundaries? Why compartments? pp19-21
 - B. Basic survival skills ch 1 p 3
 - C. Organelles ≡ Intracellular specialty shops LS pp 21-34
 1. Endoplasmic reticulum (ER) fig 2-1, 2-2, 2-3
 2. Golgi complex fig 2-3, 2-4
 3. Lysosomes fig 2-5, 2-6
 4. Peroxisomes fig 2-6
 5. Mitochondria fig 2-8 LS 2012 pp 20-34, tab 2-1 p 36
 - D. **Physiol News** Moms eggs execute Dad's mitochondria?
- IV. **Anaerobic vs Aerobic Metabolism Overview** Many sources! Mathews & Fox 1976...LS 2012 pp 26-33, fig 2-15 p 33
 - A. ATP-PC Immediate, Glycolytic & Aerobic Energy Systems



*** Thanks for signing attendance roster & noting late arrival or early departure time!



BI 121 Lecture 2

- I. **Announcements** Lab 1 Histology today! 130 Huestis (HUE) Fun! Worksheets. Readings: DC, LS, LM? **NB:** UO Biology blog vs. Canvas <http://blogs.uoregon.edu/bi121/fall-2019/>
- II. **Homeostasis** LS ch 1, DC Module 1
 - A. **What?** Maintenance of ECF LS p 8
 - B. **Where?** ECF = Plasma + Interstitium + ? LS fig 1-4 p 8
 - C. **Homeostatic Balances?** LS p 9, DC pp 5-6
 - D. **Why?** Cell survival! LS fig 1-5 p 9, DC p 5
 - E. **Physiology in the News** H₂O? Are we like watermelons?
 - F. **How** are balances maintained? Simplified Homeostatic Model cf: LS fig 1-7 p 14; T°C + BP balance e.g. + vs. - FB
- III. **Cell Anatomy, Physiology & Compartmentalization** LS ch 2
 - A. How big? What boundaries? Why compartments? pp 19-21
 - B. Basic survival skills LS ch 1 p 3
 - C. Organelles ≡ Intracellular specialty shops
Endoplasmic Reticulum (ER), Golgi, Lysosomes, Peroxisomes & Mitochondria, LS fig 2-1, 2-2, 2-3 pp 20-3



BI 121 Lecture 4

Structure-function = fun!



- I. **Announcements** Anatomy & Physiology Lab today! Fun! Remember to complete p 3-7 dietary record in LM before Lab 3 next Thursday! Estimating serving sizes. Q?
- II. **Adenosine Triphosphate (ATP)** ATP parts? Uses/functions?
- III. **Anaerobic vs. Aerobic Metabolism** LS ch 2 pp 26-33, fig 2-15+
 - A. Cytosol vs. Mitochondria
 - B. Anaerobic: ATP-PC, Glycolysis
 - C. Aerobic: Mitochondrial matrix vs. cristae
Citric acid cycle vs. ETC purpose
- IV. **Genetics Introduction** LS 2012 ch 2 pp 20-1 + Appendix C
 - A. What's a gene? Where located? p A-18, fig C-2, C-3
 - B. Why are genes important? p A-18
 - C. What's DNA & what does it look like? pp A-18 thru A-20
 - D. How does information flow in the cell? fig C-6
 - E. How does DNA differ from RNA? pp A-20 thru A-22
 - F. Code word, codon, anti-codon? pp A-22, A-23
 - G. How are proteins made? Class skit! LS Appendix C

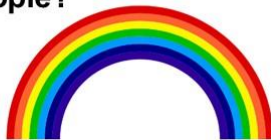
BI 121 Lecture 5



...DietController!
More fun in Lab!!



- I. **Announcements** Nutrition Analyses this Thursday!
Please record diet on p 3-7 LM. Bring flash drive. Q?
- II. **Genetics Connections** LS 2012 ch 2 p 20-1 + Appendix C
 - A. How & where are proteins made? fig C-7, C-9
 - B. Class skit: Making proteins @ ribosomes!
- III. **Nutrition Primer** DC Module 2, S&W Price Science Library
 - A. Essential Nutrients: H₂O, 1^o Carbohydrates, 2^o Fats, 3^o Proteins, Vitamins, Minerals; Macro- vs Micro-?
 - B. Dietary Guidelines: HHS-USDA, AICR, Eat the **Rainbow!**
 - C. **Blue Zones?** Habits of longest-lived people?
 - D. Okinawan Longevity Diet?
 - E. Pondering Paleo, Marlene Zuk, U Minn
 - F. How much protein? Protein & disease?
 - G. TMAO, Neu5GC & inflammation?
 - H. Carbohydrate confusion. Why plants & whole grains?
 - I. Exercise, carbohydrates & fats
 - J. Fasting? Intermittent fasting?
 - K. Successful dieting? National Weight Control Registry
 - L. Exercise vs. Diet vs. Combination, Zuti & Golding



BI 121 Lecture 7



...Put Lab Notebook in box based
on your lab time. Thanks!!



- I. **Announcements** Exam I one week from today, Oct 29th!
10 am Lab → 5 KLA, 11 am → 129 HUE, AEC, All others here!
Discussion + Review, Sunday Oct 27th, 6-7:30 pm, here! Q?
- II. **Gastrointestinal Physiology** DC Mod 3 pp 17-23, LS ch 15+
 - A. Organ-by-organ review LS tab 15-1 pp 440-1 +...
 - B. Zymogen? = Inactive precursor LS fig 15-9 p 452...
 - C. Accessory organs? Pancreas, Liver, Recycling! pp 457-63
 - D. Small intestine? Ulcers? Energy nutrient digestion LS
Beyond the Basics, fig 15-20, 15-22 pp 456, 467-8, Mayo Clinic
 - E. Large intestine? LS fig 15-24 pp 472-4
- III. **Cardiovascular System** DC Mod 4, LS ch 9, Torstar, G&H+...
 - A. Circulatory vs. Cardiovascular (CV)? CV vs. Lymphatic
CV Pulmonary & Systemic circuits DC pp23-31+LS p229+
DC fig 4-1 p 24, LS fig 9-2b p 231
 - B. Arteries, capillaries, veins, varicosities? G&H, Torstar, DC
 - C. ♥ layers, box, chambers, valves, inlets, outlets
LS fig 9-4 p 233, fig 9-2a p 231; DC pp 23-6
 - D. Normal vs. abnormal blood flow thru ♥ & CVS LS, Fox+...

BI 121 Lecture 6 Nutrition Lab 3 today! More personal data...



- I. **Announcements** Data + flash drive/e-mail for today's lab!
To have your notebook returned to study for Exam I on Tues
Oct 29th, best to submit prior to lecture next Tues Oct 22nd.
Review Session Sunday Oct 27th, 6-7:30 pm. Sample Exam Q?
Be sure to see *Active Learning Questions!* Drink your calories?
- II. **Nutrition Connections** Plants, Whole Grains, Exercise, Dieting?
- III. **GI (Gut) Structure & Function** DC Module 3, LS 2012 ch 15
 - A. Gut Doughnut Analogy + Secretions L Brilla WWU
 - B. Digestion Steps Dr. Evonuk + LS pp 437- 439; DC p 23
 - C. Hydrolysis + Polymer → Monomer: Central Themes!
LS p 438, SI Fox 2009 + ...
 - D. Gut control mechanisms
 - E. Histology of the gut LS fig 15-2, 15-3 p 442-3
 - F. Organ-by-organ review
 - G. Stomach protein digestion + zymogens? LS fig 15-7, 15-9
 - H. Pancreas & Liver: Accessory organs! Recycling! LS pp457-63
 - I. Small intestine? Ulcers? LS fig 15-20, 15-22 pp 467-8
Beyond the Basics LS p 456, Mayo Clinic on Ulcers
 - J. Summary of chemical digestion LS tab 15-5 p 466
 - K. Large intestine? LS fig 15-24 pp 472-4

BI 121 Lecture 8

Fun heart rate & BP lab today! Hooray!!...



- I. **Announcements** Exam I next time: 10 & 11 am lab sections
go directly to 5 KLA & 129 HUE. All others (except AEC) here,
100 WIL! Review: Sun, 6 pm 100 WIL! Lab Manuals. Q?
- II. **Cardiovascular Connections** DC Module 4, LS ch 9, Torstar+...
- III. **CV Physiology in News** AHA + ACSM exercise guidelines!
- IV. **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:
1. Exercise, 2. Diet, 3. Drugs+Surgery
 - D. Food choices
make a difference?
Plant-based diet!
What's HAPOC?

