

8/29/2021

Brief Syllabus for HEB 1406

Human Nutritional Biochemistry and Metabolism

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WE ARE MEETING ON ZOOM. LINKS ON THE WEBSITE

Thursdays 12-2:45pm with occasional extra Zoom Lectures

Office Hours

September 2

The Mile High View of Human Nutritional Biochemistry and Metabolism

Mozaffarian and Foroughi, British Medical Journal, 2018

Spector and Gardner, British Medical Journal 2020

Hall, Science 2020

September 9

Lets's start at the end.

ATP, Creatine and NAD⁺/NADH

NAD in aging and ATP (and Creatine) supplementation

The Role of ATP in Metabolism, Chapter 3 in Introduction to Nutrition and Metabolism,
pp. 51-78;

McReynolds et al, Experimental Gerontology, 2020

Nikiforov et al, Critical Reviews in Biochemistry and Molecular Biology, 2015

Kreider et al, 2017

Chini et al, Cell Metabolism, 2021

Sept 16

Metabolic Regulation In (at least some of) It's Glory

Cellular Mechanisms Involved in Metabolic Regulation, Chapter 2 in Metabolic Regulation, A
Human Perspective, pp. 27-42.

Curi et al, Biochemistry Journal, 2016 pp 1845-1852

September 23

Carbohydrate 1

We cover basic carbohydrate metabolism with an emphasis on glucose/lactate/glycogen
metabolism

TeSlaa et al, Cell Metabolism, 2021

Background

<https://www.youtube.com/watch?v=VzAjOPzUIP4>

September 30

Carbohydrate 2

A focus on aerobic glycolysis and the Warburg effect

DeBerardinis and Chandel, *Nature Metabolism*, 2021

McKean et al, *Molecular Cell*, 2021

Bauernfeind et al, *Brain Structure and Function*, 2014

Oct 7

Carbohydrate 3

Fructose and Alcohol

Kahn and Seivenpiper, *European Journal of Nutrition*, 2016

Gonzalez and Betts, *Cell Metabolism*, 2018

Taylor et al, *Nature*, 2021

Oct 14

Lipid 1

Brown Fat, Essential Fatty Acids

Panic et al, *elife*, 2020

Background

<https://www.youtube.com/watch?v=ppqpUVaasNc>

Cunnane, *Progress in Lipid Research*, 2003

Das, *Biotechnology Journal*, 2006

Oct 21

Protein 1

Protein Intake and High Protein Diets

Pesta and Samuel, 2014

Olson et al, *Journal of OSM*, 2020

Tome et al, *Proceedings of the Nutrition Society*, 2021

Oct 28

Protein 2

Branch Chain Amino Acids

Shimomura and Kitaura, *Pharmacological Research*, 2018

Ye et al, *Frontiers in Endocrinology*, 2020

November 4

Integrating Carbs, Fat and Protein Metabolism

Integration of Carbohydrate, Fat and Protein Metabolism in Daily Life, in *Metabolic Regulation, a Human Perspective*, pp 169-212.

November 11

Class Presentations

November 18
Class Presentation

December 2
Last Class, Review