Introduction
• Pediatric Obesity Program focusing on metabolic pathways
• Intersection of social and clinical
• Short term effects of high fat dietary intake with carb restriction on lipogenesis and TG synthesis (using stable isotope analysis) w/ focus on Oleate

Experimental Model
• 4 diets over 4 weeks (rats)
• Standard Diet (SD), Low Fat (LF),
• High Fat (HF-Mix), High Fat, Carb Restriction (HFCR)
• Experimental day: given heavy water injection
• Rat livers excised/blood samples taken

Objective of Internship
To better my understanding of Gas Chromatography-Mass Spectrometry and to apply research skills in order to continue the analysis of past research on ketogenic diet.

Analytical Methods
• Tissue weighing
• Ethanol KOH hydrolysis
• Samples “acidified” to collect free fatty acids
• Concentrations determined with internal standard
• Palmitate derivatized with TMS (silicon based agent)

Results
My project involved seeing whether liver synthesized Oleate through lipogenesis. Using heavy water methodology, GCMS is able to detect whether or not Oleate is being newly synthesized (De Novo Lipogenesis) or not since the HFCR diet contains huge amounts of Oleate. However, the results are unexpected as blunting persists; newly synthesized Oleate is not being made through De Novo Lipogenesis if oleate is high in diet. This is the liver’s response to taking lipids and modifying them for other uses.

Reflection:
This experience allowed me to view a different side of public health that I usually wouldn’t be exposed to so early in my undergraduate career as I saw the inner workings of research and departments.

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