

# Problems of the modern world





Mismatch

Homeostasis

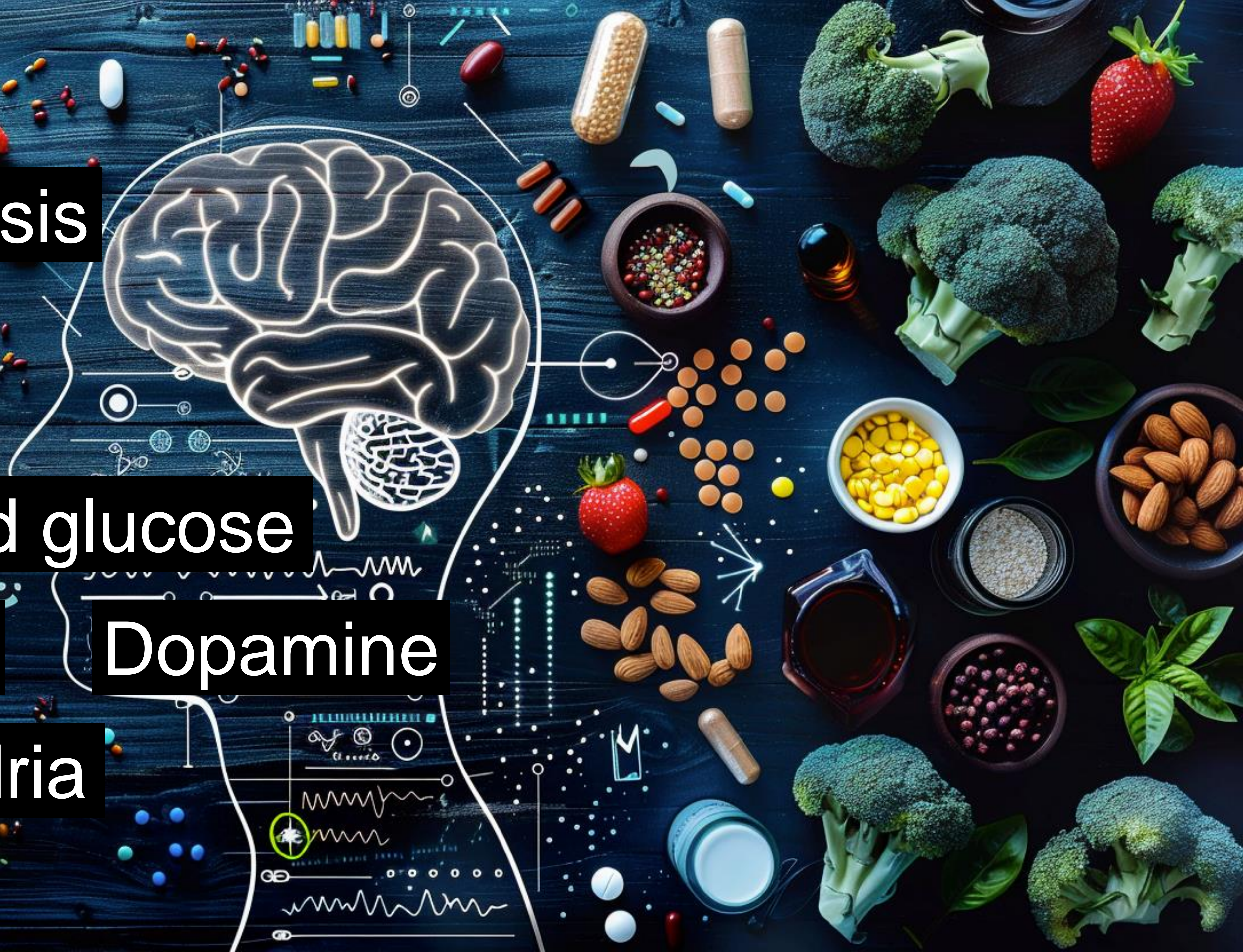
Hormesis

Insulin and glucose

Glutamate

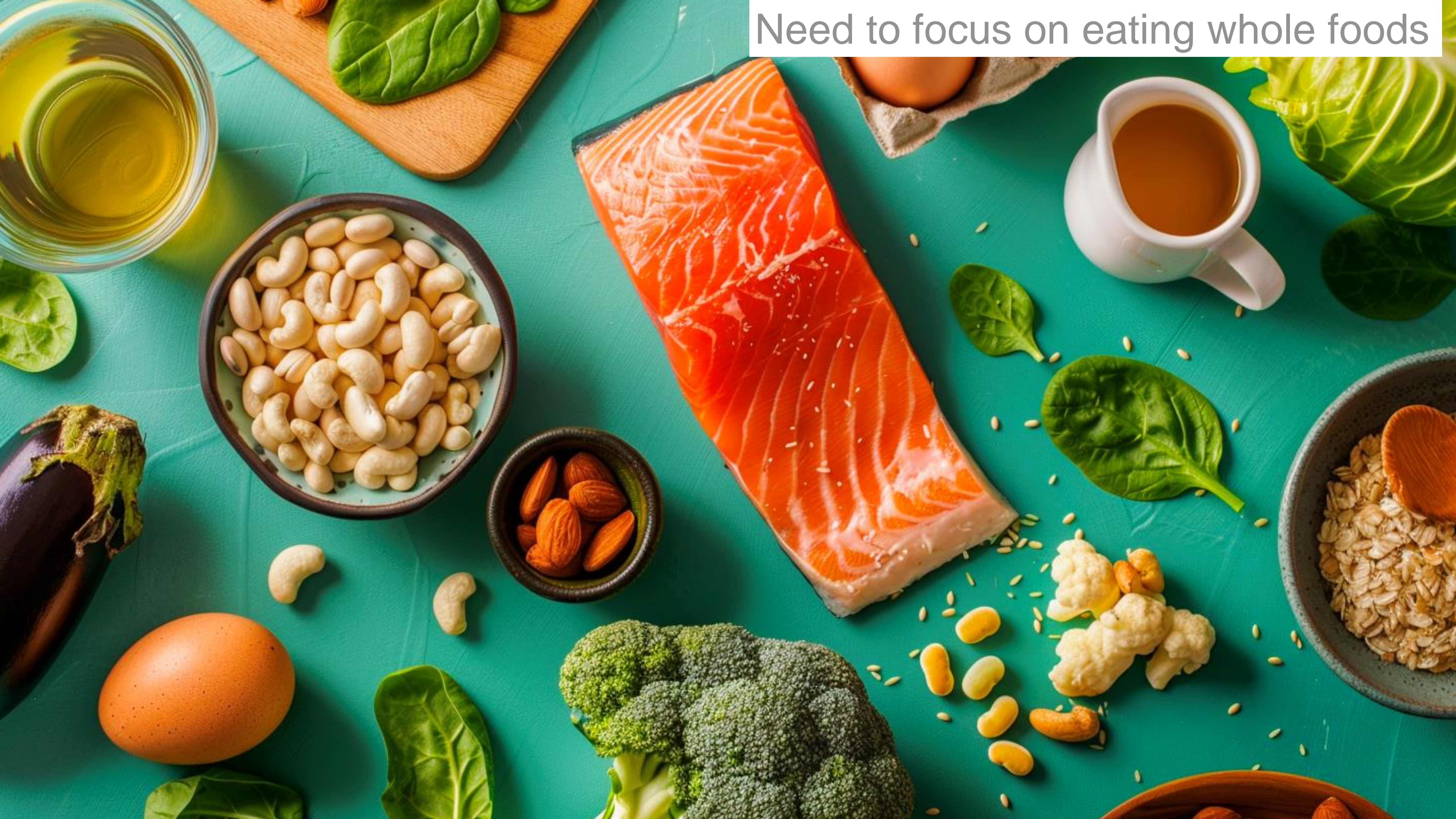
Dopamine

Mitochondria





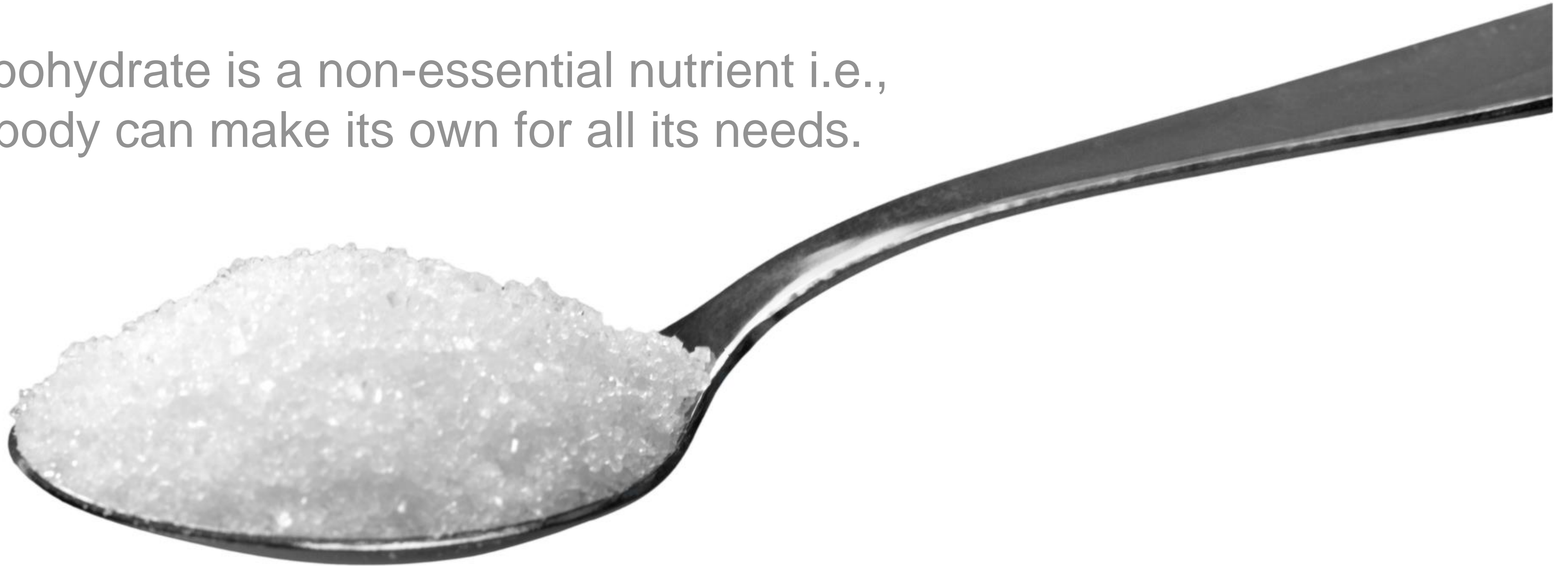
Need to focus on eating whole foods





We only need 1 tsp of sugar (carbs) to maintain our blood sugar levels

Carbohydrate is a non-essential nutrient i.e., the body can make its own for all its needs.





- **Cellular Carbs:** Sustained incretin hormone release, better blood sugar control, enhancing satiety and insulin sensitivity.
- **Acellular Carbs:** Rapid digestion and absorption, but short-lived incretin hormone release, promoting an insulin resistance type environment, potential for blood sugar swings, and less sustained satiety.

## Cellular carbs



## Acellular carbs





Inflammation  
Insulin  
Resistance

Stress  
Poor sleep  
Too much exercise  
Low physical activity

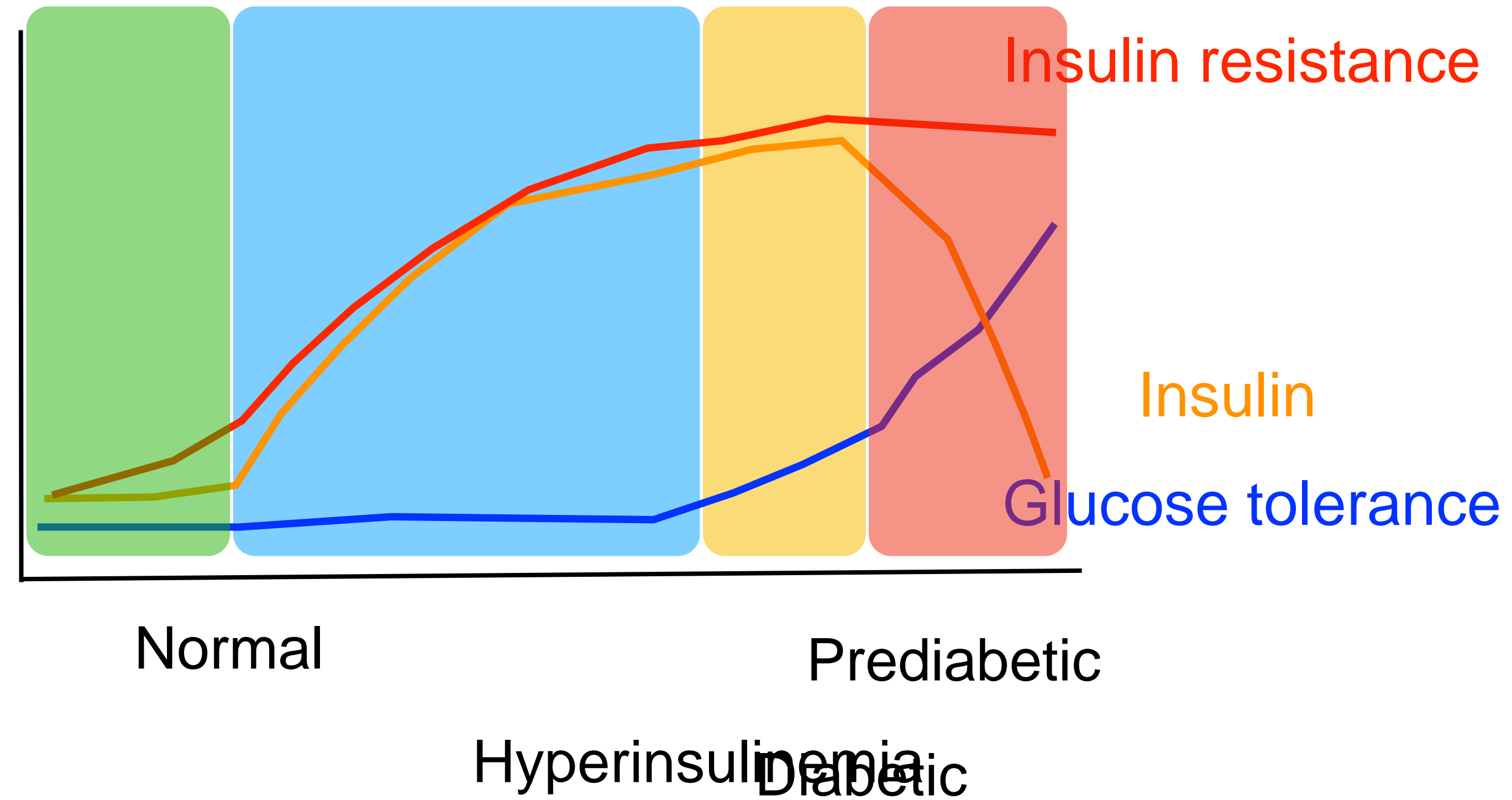
Genes/ethnicity  
Age?  
Obesity  
High insulin

Smoking  
Pollution  
environmental toxins  
Too much/too little sun

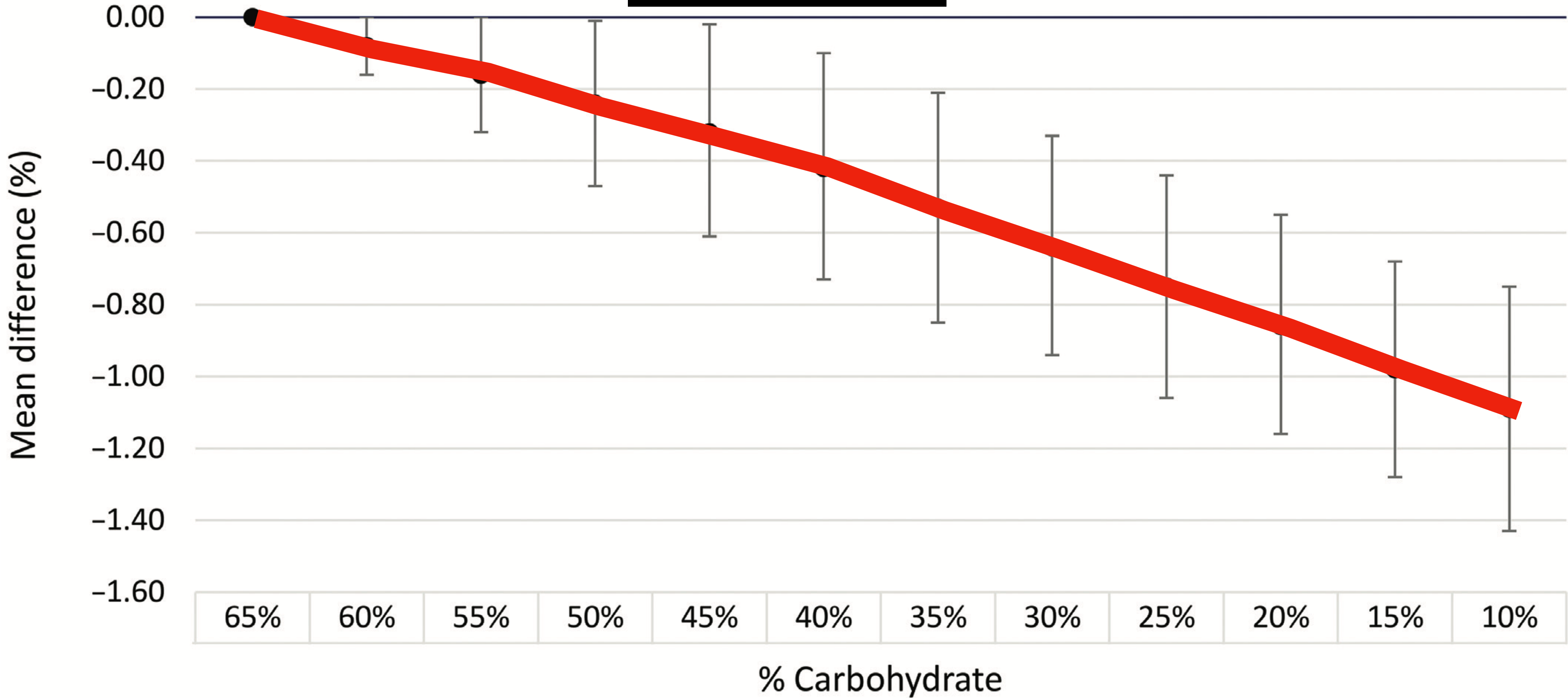
Cr B Fe  
High trans fat/O6 fat diet  
High sugar diet Food  
Alcohol processing  
Low fibre

Gut endotoxicity  
Poor gut  
microbes

# Glucose is only half the story

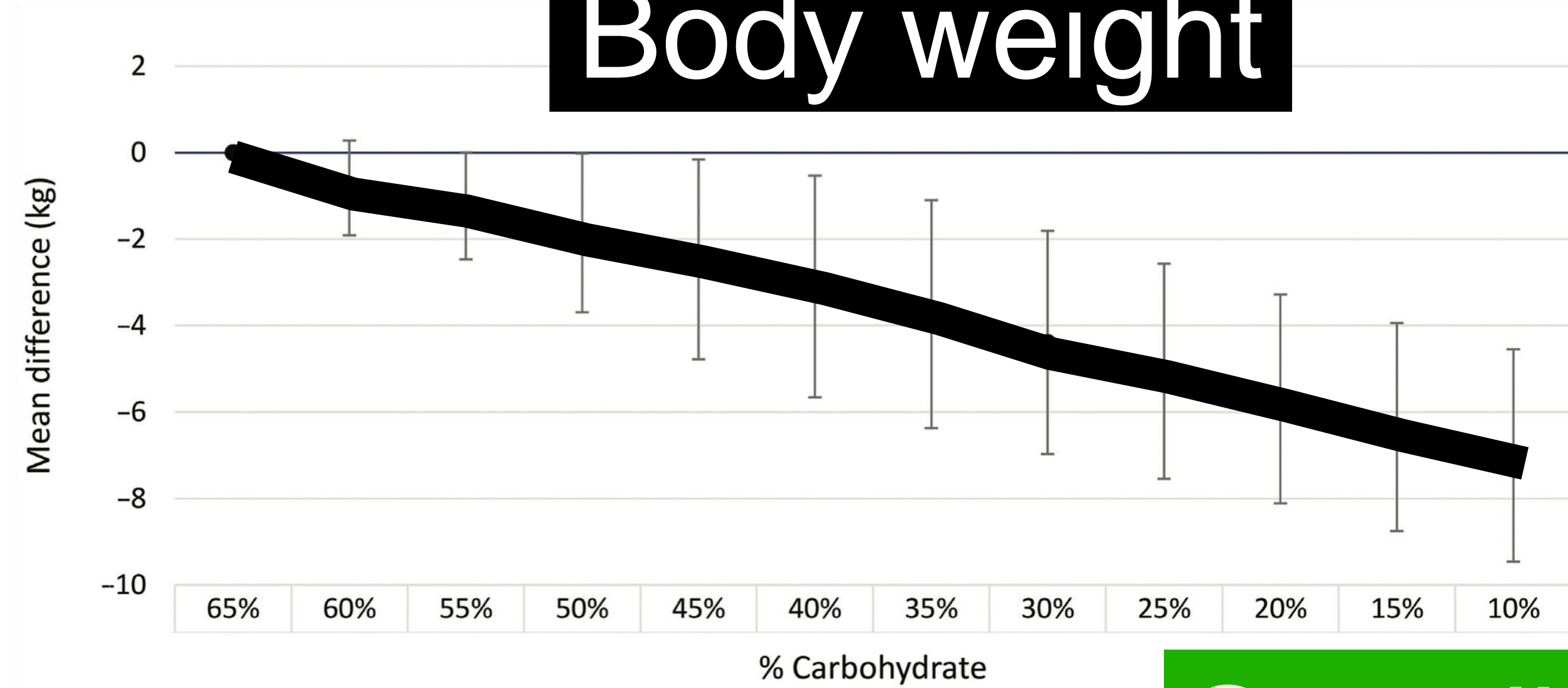


# HbA1C

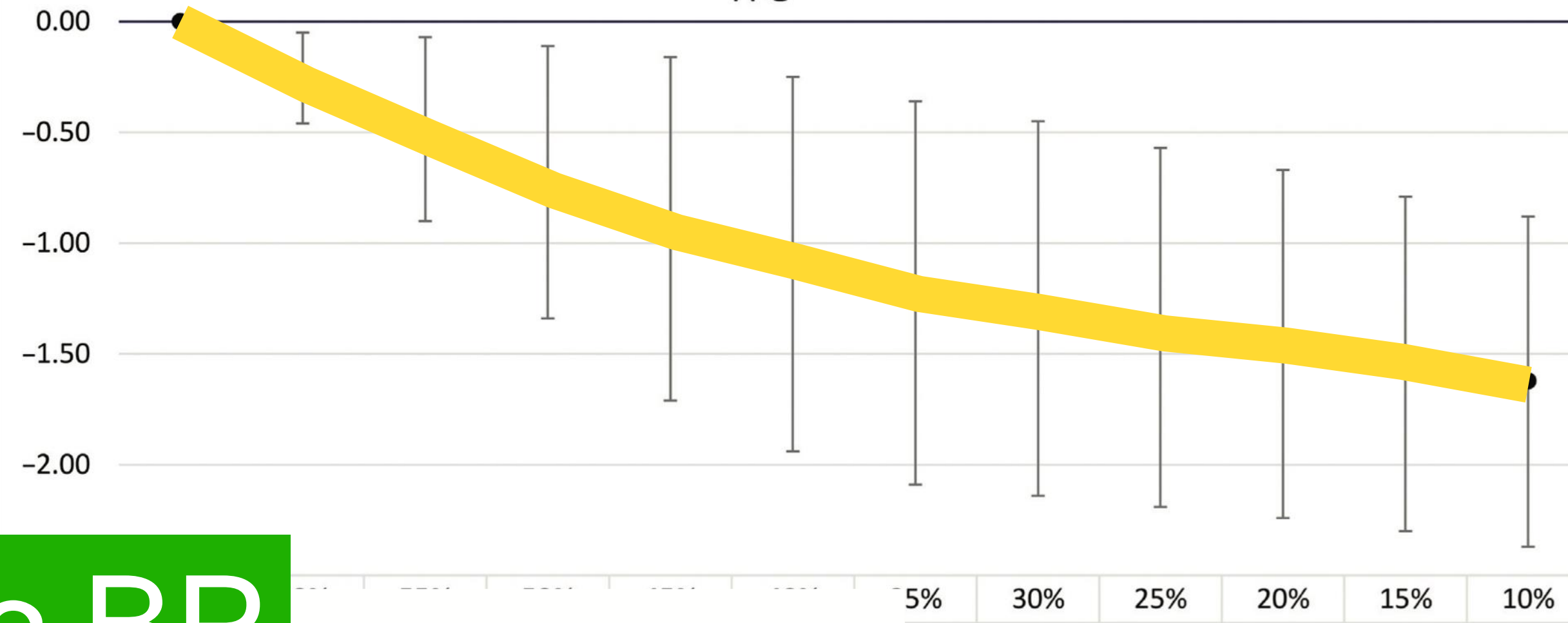




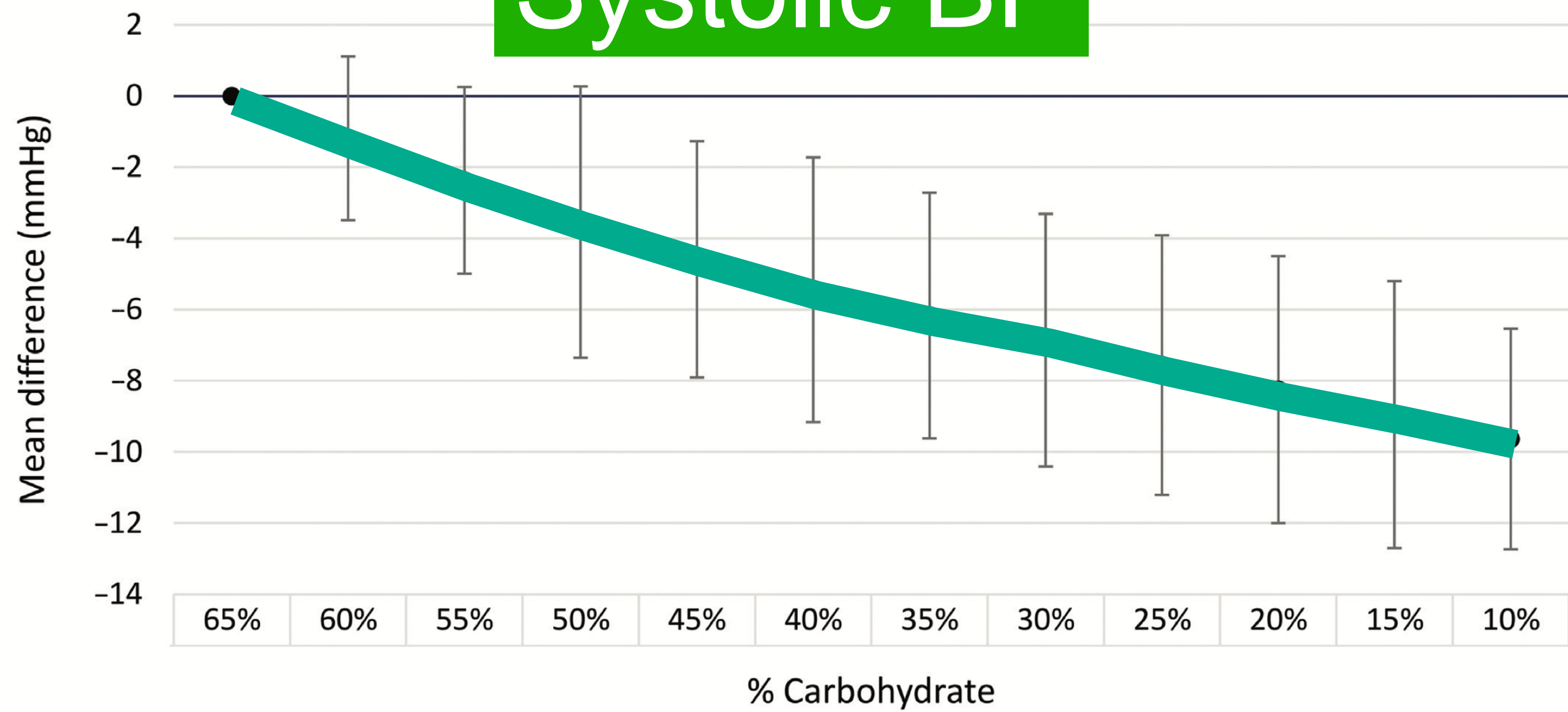
# Body weight



# Fasting BG

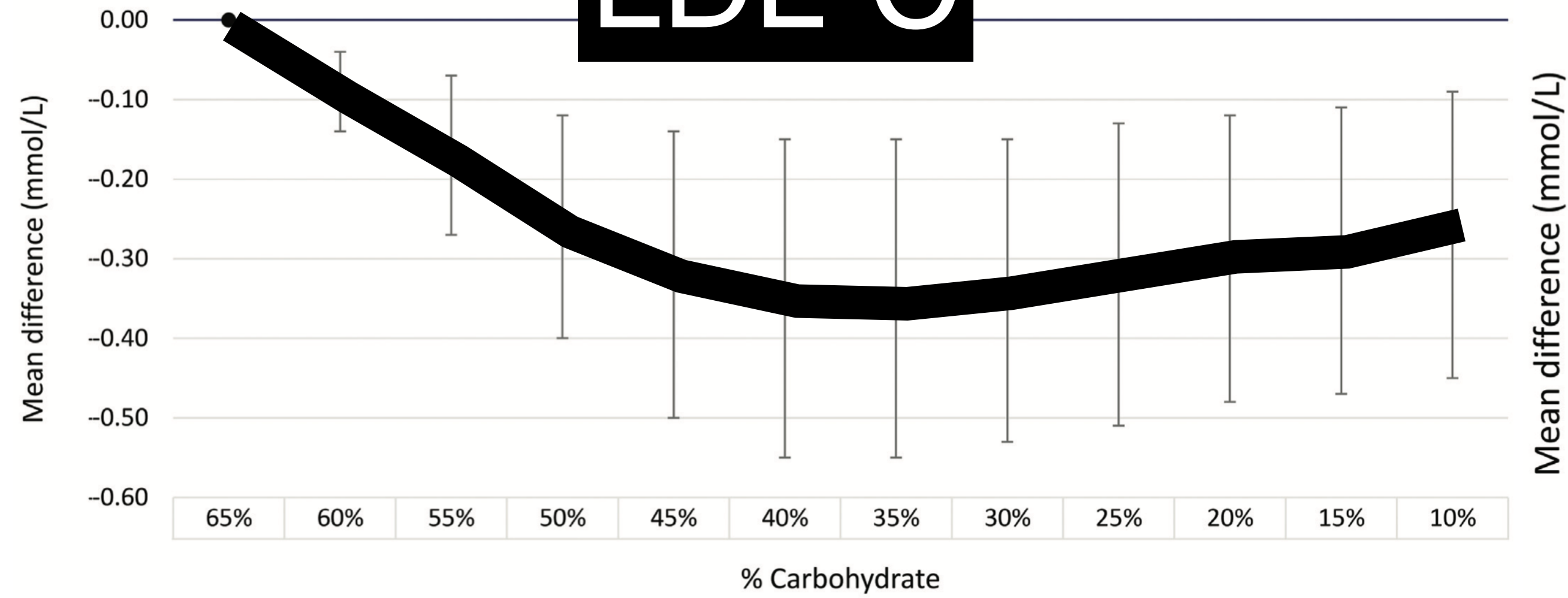


# Systolic BP

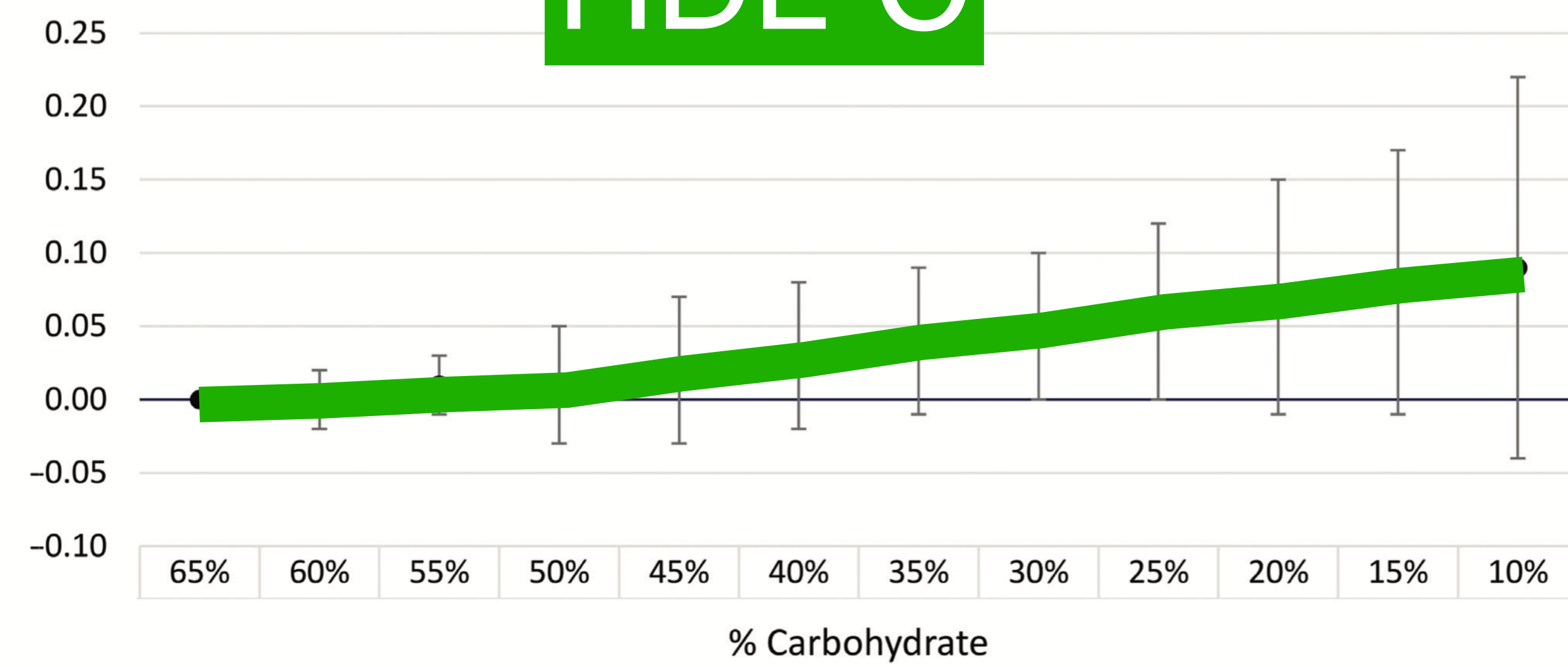




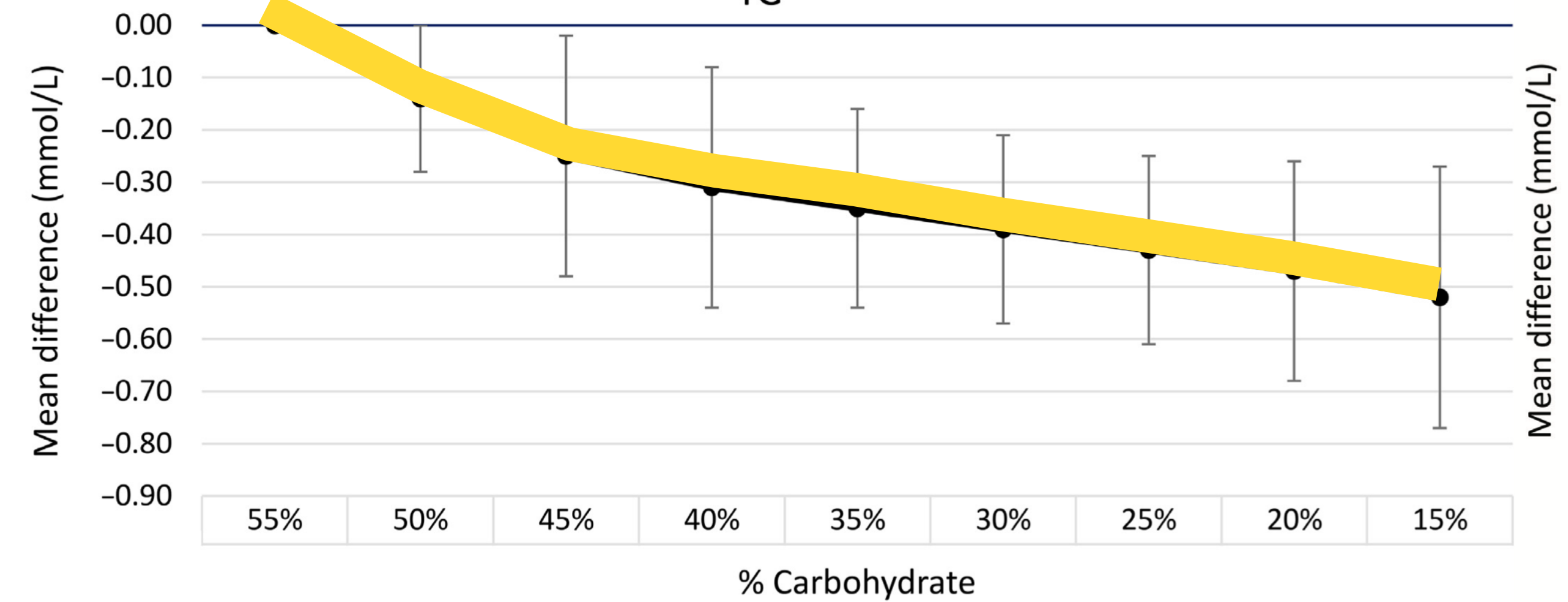
# LDL-C



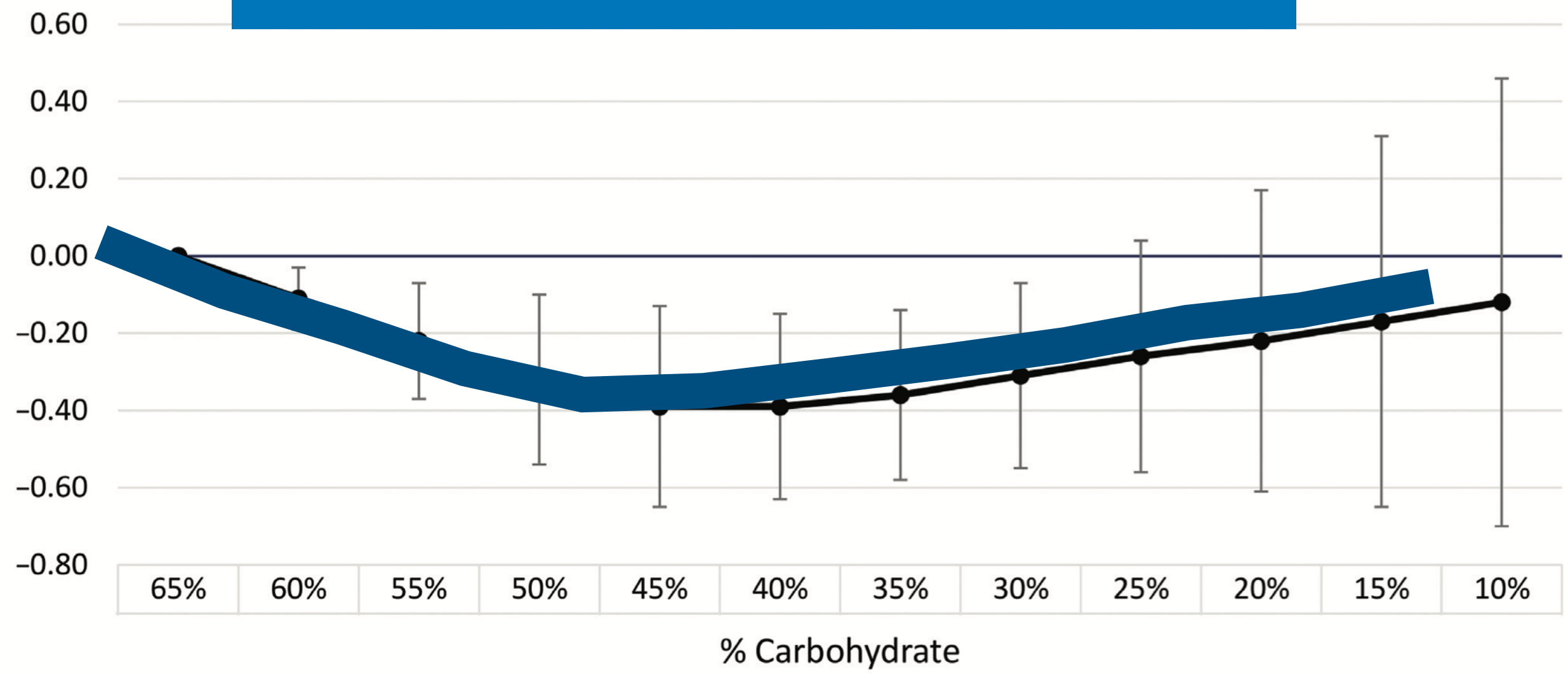
# HDL-C



# TG

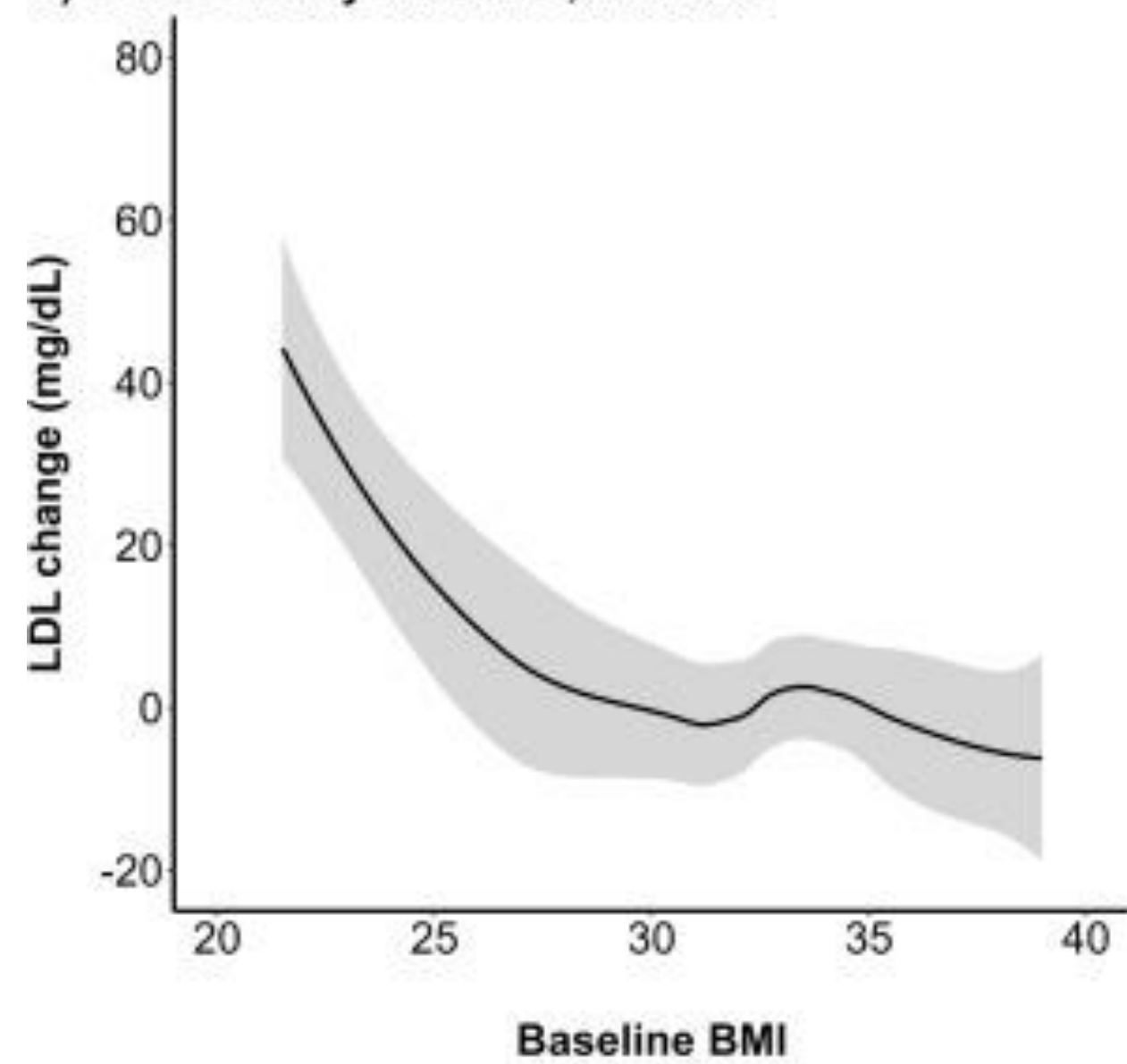


# Total Cholesterol

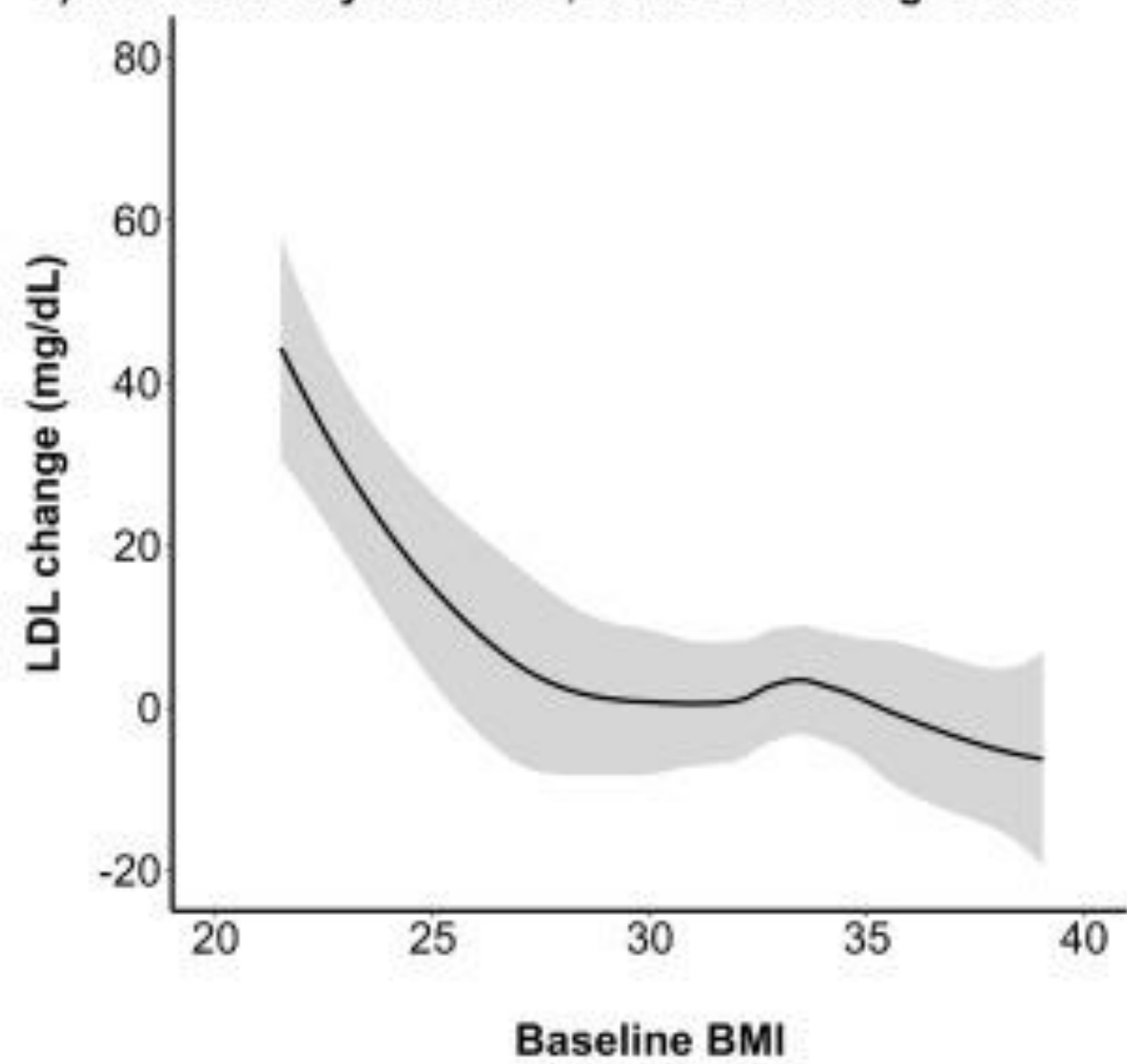




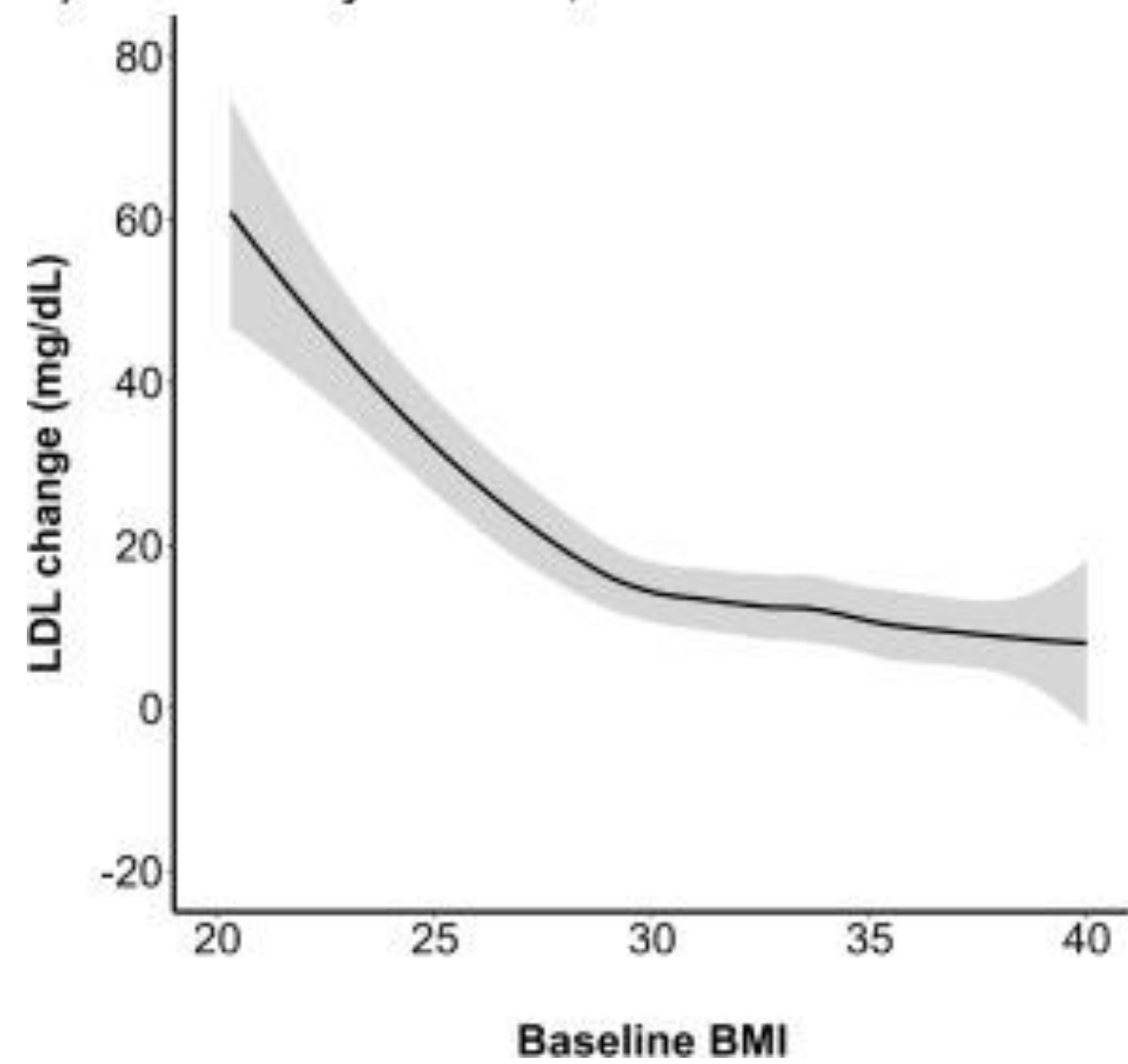
**A) Low-Carbohydrate Diet, All Trials**



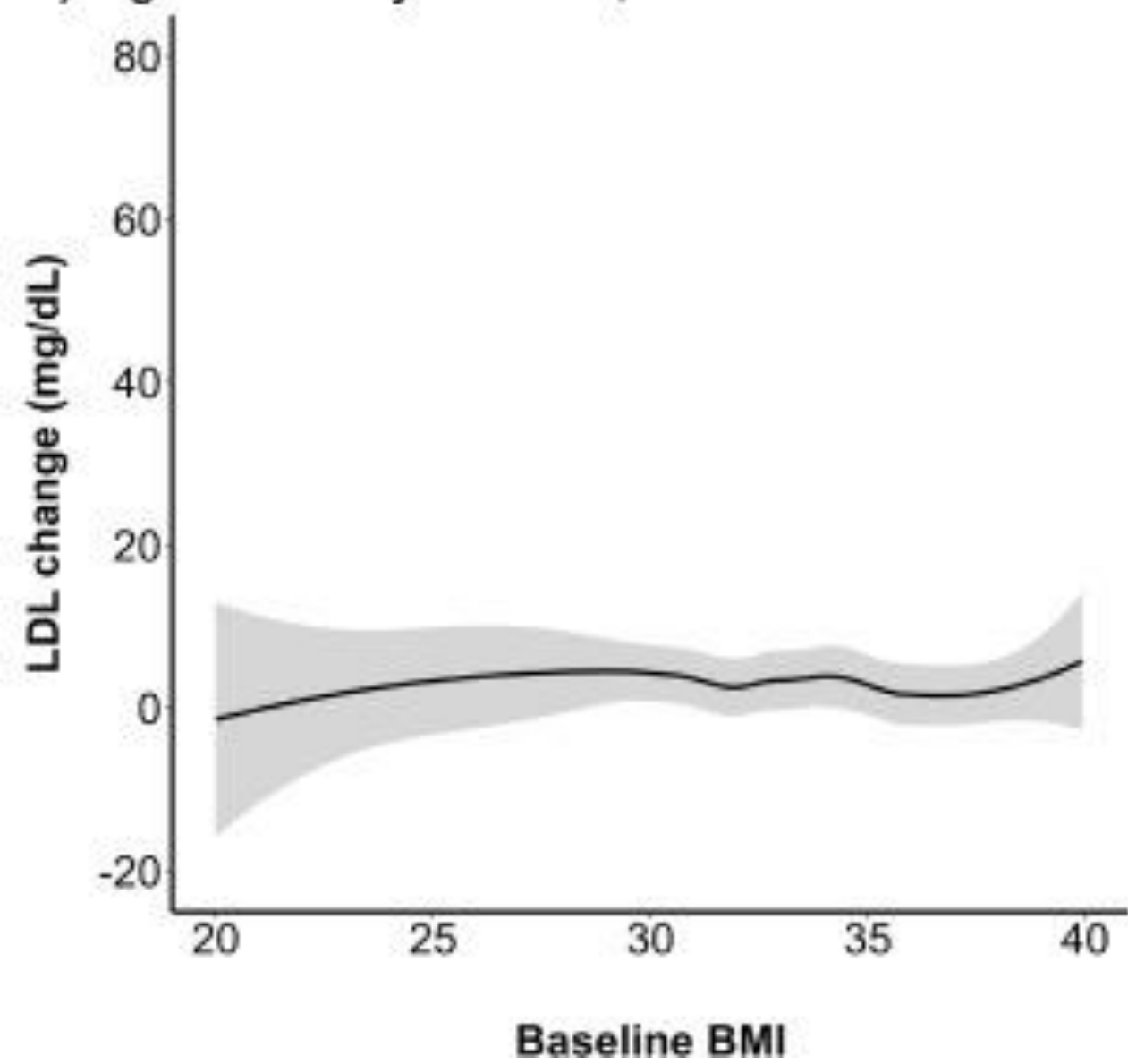
**B) Low-Carbohydrate Diet, Trials Excluding Statins**



**C) Low-Carbohydrate Diet, IPD**

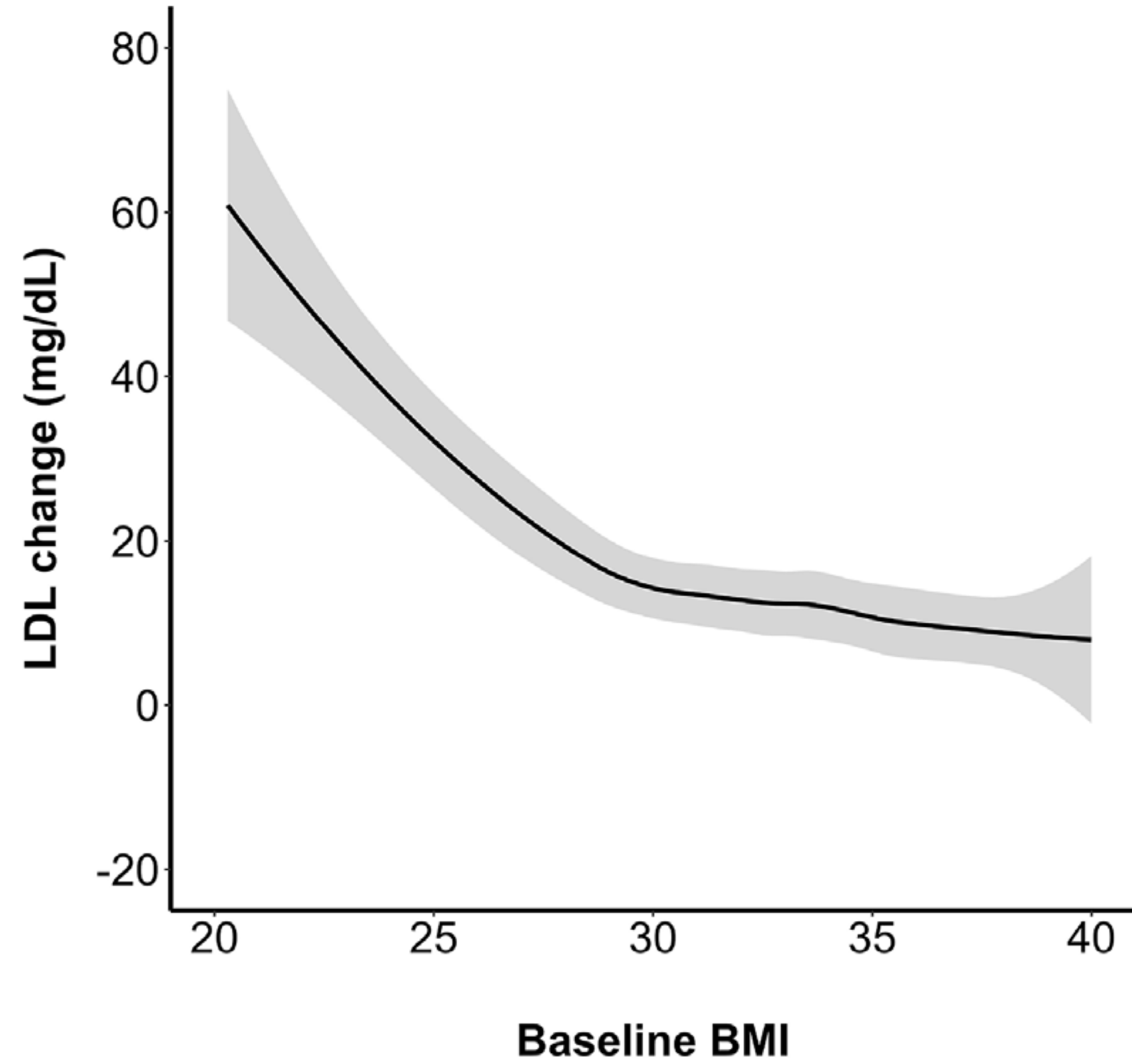


**D) Higher-Carbohydrate Diet, IPD**





**C) Low-Carbohydrate Diet, IPD**



**D) Higher-Carbohydrate Diet, IPD**

