# **Gut Hormones and Diabetes**

## Ominous Octet - The 8 core defects of diabetes

There are 8 core defects that can affect blood sugar levels (Figure 1). All of the different parts work together to keep your blood sugar under control. If one of the parts does not work properly, the other parts are affected, causing hyperglycemia. Over a period of time, it may lead to diabetes complications such as cardiovascular disease, nerve damage, kidney damage, foot damage, and eye damage.

#### Role of GLP-1

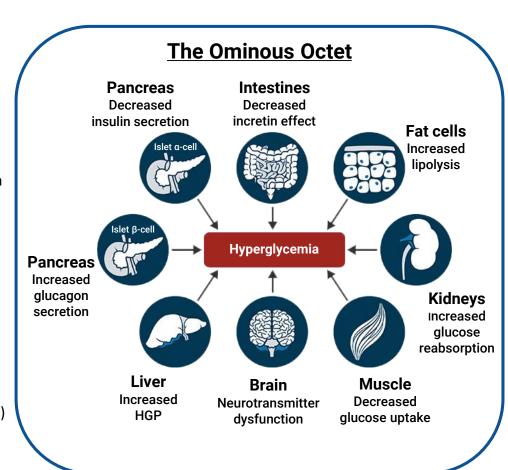
When we eat, our blood sugar rises. GLP-1 acts directly on the stomach, pancreas, liver, brain and muscles. It signals the organs to keep blood sugar in balance. However, evidence shows that people with type 2 diabetes have reduced incretin effects, which means they have fewer incretin hormones such as the glucagon-like peptide (GLP-1).

## **Functions of GLP-1**

- 1. Slows down how quickly food leaves the stomach (stomach)
- Promotes insulin secretion to contact with glucose after meals (pancreas)
- 3. Lowers hepatic glucose output (liver)
- 4. Suppresses appetite (brain)
- 5. Increases glucose uptake (muscles)

# Increase GLP-1 through diet:

- Avoid or minimize sugar
- Reduce carbohydrates
- Eat enriched protein foods: fish, whey protein, yogurt
- Choose anti-inflammatory ingredients; turmeric, onion, citrus fruits, tomatoes
- Leafy greens: spinach, kale, collards
- Probiotics: yogurt, kimchi, miso soup, kombucha
- Eat foods rich in omega 3 fatty acids: salmon, chia seeds
- Eat high fiber foods: beans, whole wheat
- Eat antioxidants: berries, nuts







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