

# MODULE 1 L08

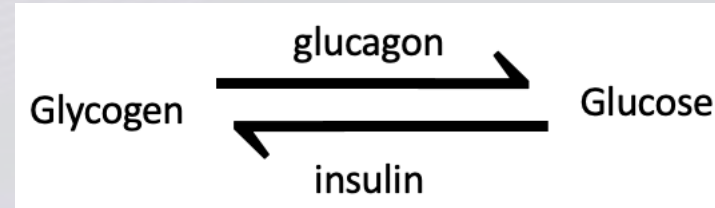
# Pancreas

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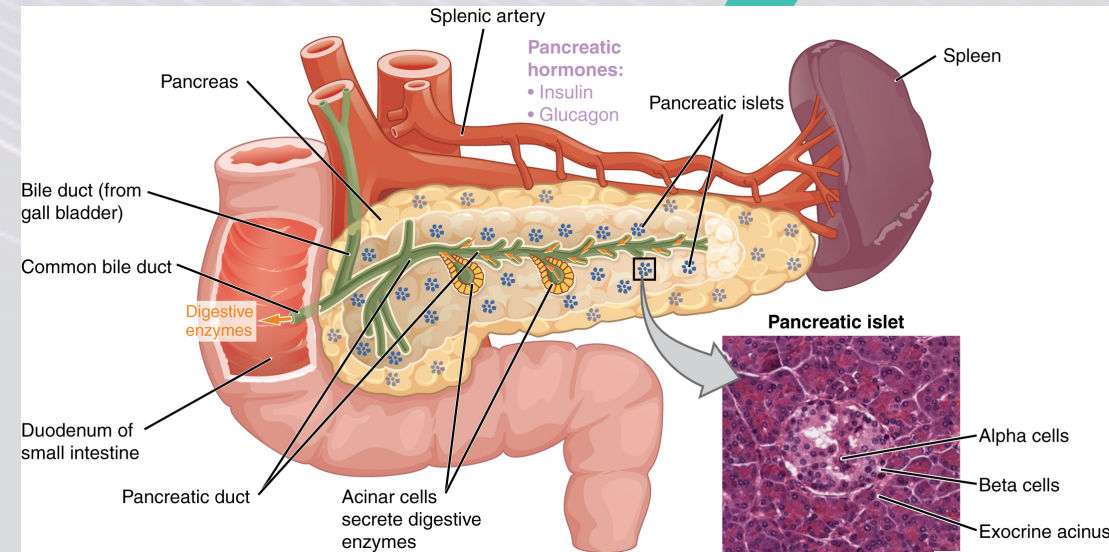


# 8. Pancreas

- Exocrine function
  - ❖ Acinar cells
    - Digestive enzymes
- Endocrine function
  - ❖ Pancreatic islets
    - Alpha cells ( $\alpha$ -islet cells)
      - ✓ Glucagon
      - ✓ Breaks down glycogen
    - Beta cells ( $\beta$ -islet cells)
      - ✓ Insulin
      - ✓ Builds up/stores
    - Delta cells ( $\delta$ -islet cells)
      - ✓ Somatostatin
    - PP cells
      - ✓ Pancreatic polypeptide

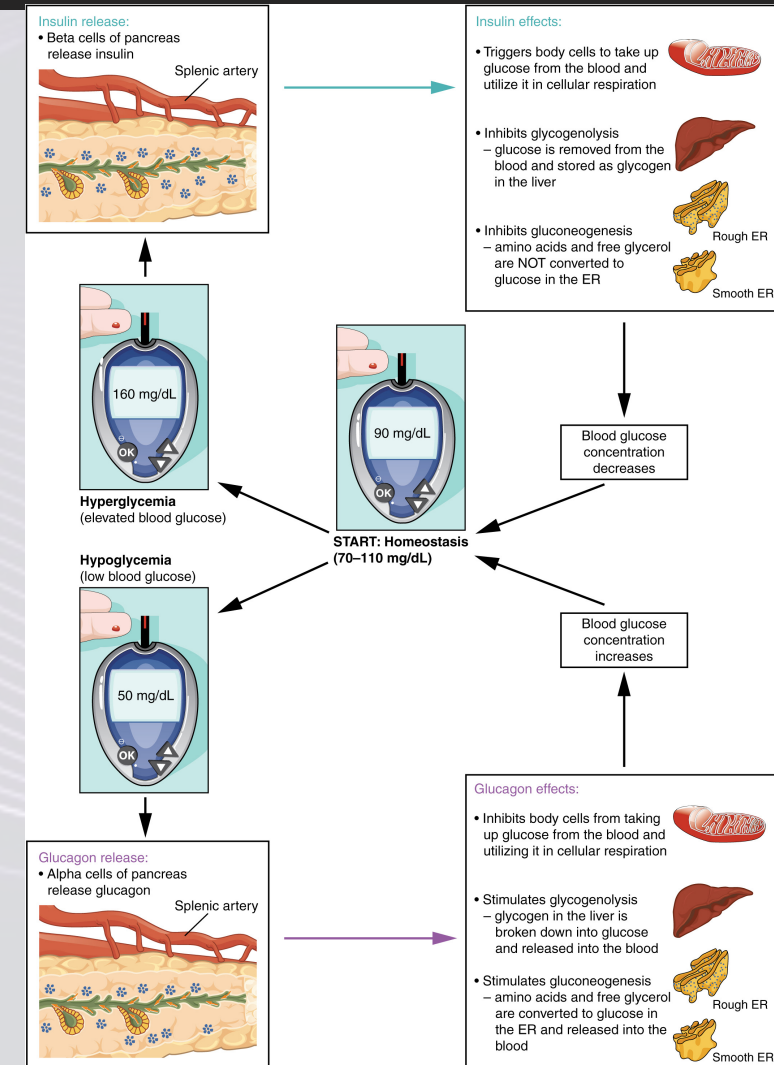


Regulate rate of glucose metabolism



# Homeostatic Regulation of Blood Glucose Levels

- Glucose function:
  - ❖ Cellular respiration
- Where do we get glucose from?
  - ❖ Storage:
    - Liver and muscles = Glycogen
    - Adipose tissue = Triglycerides
- Glucose regulation: (70 mg/dL and 110 mg/dL)
  - ❖ ↓ levels of glucose
    - Glucagon is released
      - **Stimulates:**
        - Use of glucose in cellular respiration
        - Glycogenolysis
        - Gluconeogenesis
        - ✓ Lipolysis
  - ❖ ↑ levels of glucose
    - Insulin is released
      - **Inhibits:**
        - Use of glucose in cellular respiration
        - Glycogenolysis
        - Gluconeogenesis



# Diabetes Mellitus

- Insulin
  - ❖ too much glucose = diabetes
- Effects of too much glucose:
  - ❖ Eye
  - ❖ Nerve
  - ❖ Kidney disease
- Types of diabetes
  - ❖ Type 1
    - Affects  $\beta$ -islet cells
    - No insulin production
  - ❖ Type 2
    - Insulin cell receptors are non-functional

