

# **Blood Glucose Monitoring**



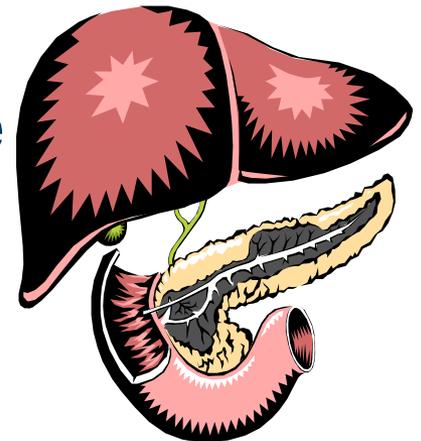
# Blood Glucose Monitoring

- Measures blood glucose levels for monitoring control of diabetes mellitus.
- Test results direct
  - Diet
  - Amount and type of medication
  - Exercise prescription
- Helps prevent diabetic emergencies by prompt detection & treatment of hypo- & hyperglycemia

Whoa, Nelly....

## What is Diabetes????

- Inability of the pancreas to either produce enough insulin or the body's inability to utilize the insulin it has.
- Insulin is the substance that converts glucose to a form that is usable by the body.
- Thus, low insulin equal high glucose circulating in the blood but not utilized by the cells.



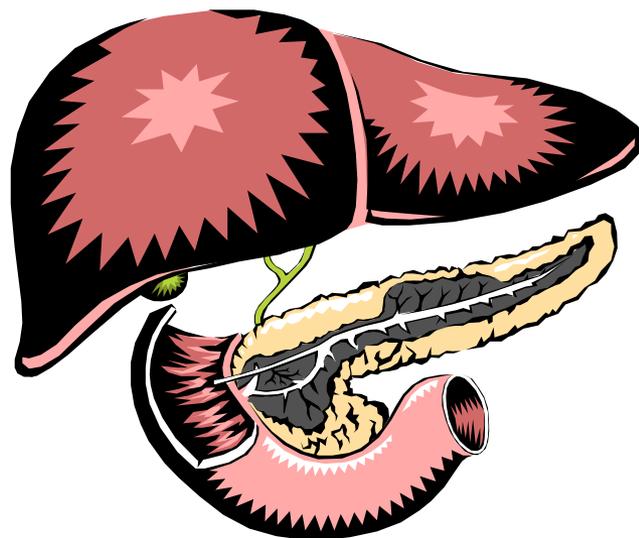
# Hypoglycemia vs. Hyperglycemia

- Hypoglycemia

- Low blood sugar
- hyperinsulinemia

- Hyperglycemia

- Elevated blood sugar
- Inadequate insulin



# Hypoglycemia

- Sweating
- Tachycardia
- Palpitations
- Nervousness
- Tremors
- Weakness
- Headache
- Mental confusion
- Fatigue



# Hyperglycemia

- Thirst
- Polyuria
- Polyphagia
- Weakness
- Fatigue
- Headache
- Blurred vision
- Nausea
- Vomiting
- Abdominal cramping



*So What...?*

## Complications of Abnormal Blood Glucose

- Heart attack
- Cerebrovascular accident
- Kidney dysfunction
- Blindness
- Nerve damage

\*Elkin et. al (2004, 3<sup>rd</sup> Ed.), Table 14-1, p.361

# Goals for Glucose Control

	Normal	Goal	Intervention needed
Fasting Glucose	<115	<120	<80 or >140
Postparandial	<140	<180	>180
Bedtime Glucose	<120	100-140	<100 or >160
Glycosylated Hemoglobin	<6%	<7%	>8%

# Glucose Meter



# What is Glucose ?

- Glucose is a simple sugar that provides the body with its primary source of energy.
- This type of sugar comes from digesting carbohydrates into a chemical that the body can easily convert to energy. When glucose levels in the bloodstream aren't properly regulated, a person can develop a serious condition, such as diabetes.

# What is Glucose ?

- This functional form of energy then gets absorbed through the small intestine into the bloodstream. It is then carried throughout the body, providing energy for the person to perform all types of activities, such as simple movements, demanding physical exercises or even thinking.

# How to measure concentration of glucose in blood

A **glucose meter** (or **glucometer**) is a medical device for determining the approximate concentration of glucose in the blood.



# Glucose Meter

- It is a key element of home blood glucose monitoring (HBGM) by people with diabetes



Insert Strip



Add blood to strip



Read results



Eject Test Strip





**Thank you for listening**