



# Gadgets & Insulin administration in Diabetes

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# Self blood glucose monitoring

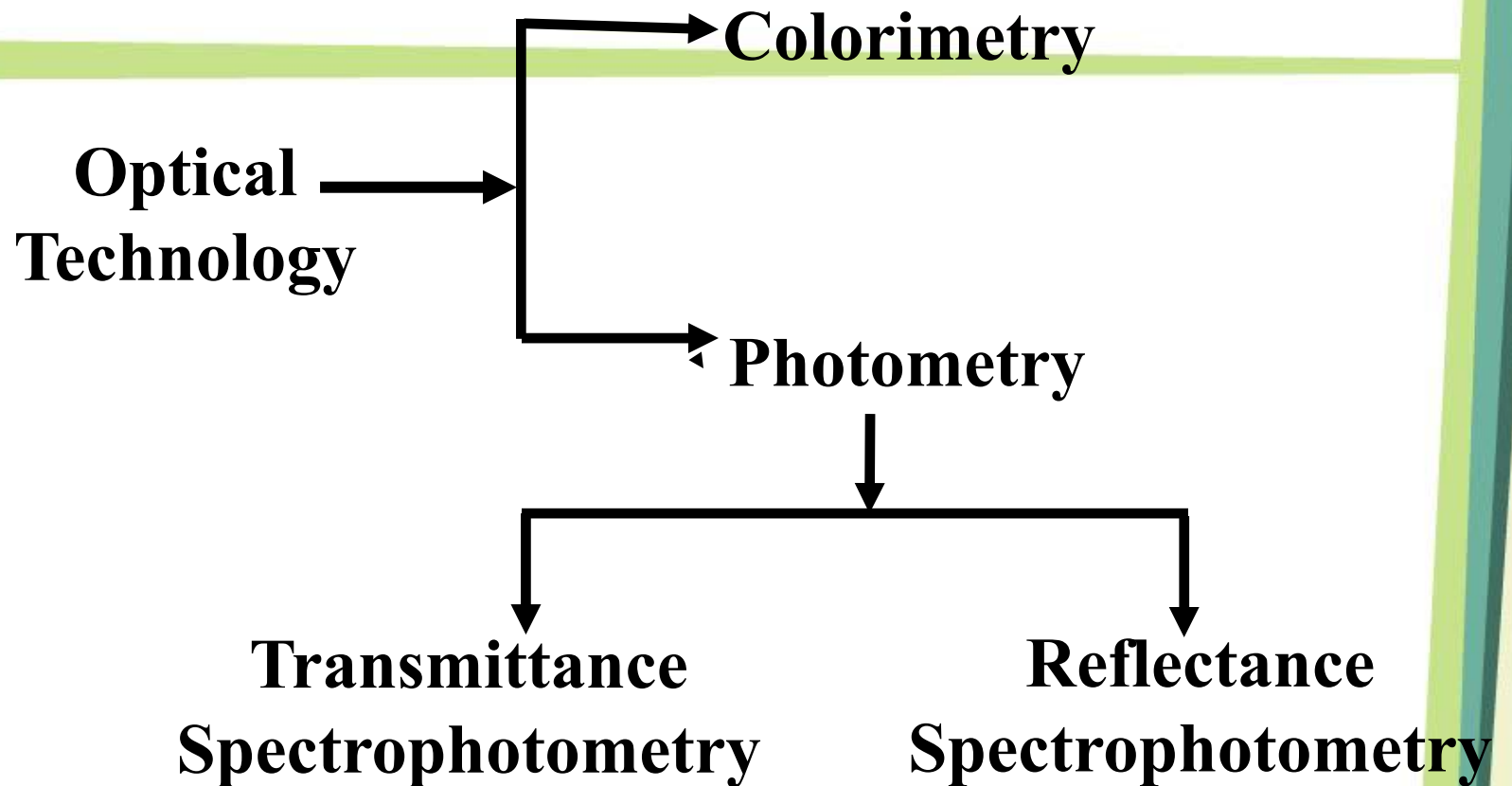
- **Glucometers**
- **Haemo Gluco Test Strips**
- **Continious Glucose Monitoring System**



# Functions of SBGM

- **To give physician in long term treatment planning.**
- **To give client in short term adjustments in insulin and diet.**
- **To signal possible emergency situations.**
- **To enhance client education.**
- **Facilitates the better understanding of diabetes to give client an active role in the management of the disease to obtain an optimal blood glucose control.**

# Technology Involved



**Amperometric Technology - Biosensors**

# Amperometry

*Oxidation of glucose*

*Electrons (electric current)*

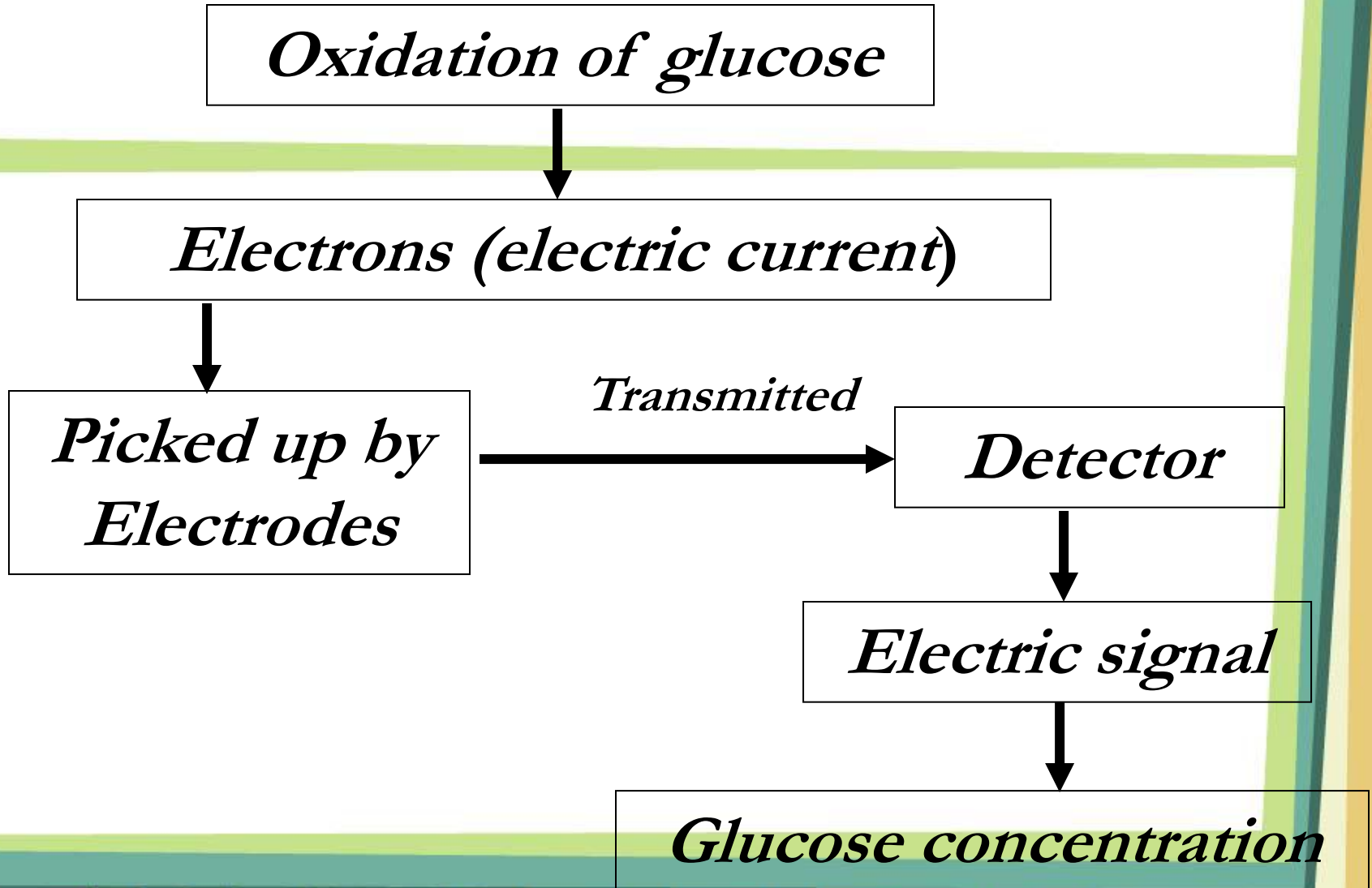
*Picked up by  
Electrodes*

*Transmitted*

*Detector*

*Electric signal*

*Glucose concentration*



# Factors to be considered while selecting Glucometers

- **Cost**
- **Maintenance**
- **Technique of use**
- **Availability of strips**
- **Portability**
- **Features**



# Client associated factors

- **Visual Acuity**
- **Manual Dexterity**
- **Psychological**
- **Literacy**
- **Age**



# HEMOGLUCO TEST STRIPS



Colour coding test strips



# Bed side glucose monitoring

- **Clear administrative responsibility for the procedure**
- **A well-defined policy/procedure manual**
- **A training program for those personnel doing the testing**
- **Quality control procedures, and**
- **Regularly scheduled equipment maintenance**

# Factors affecting blood glucose

- **Source of blood**
- **Altitude**
- **Hematocrit levels**
- **Other substances**
- **Faulty user techniques**

# **Insulin Administration**

## **Conventional Method**

- **U- 40 Syringes**
- **U- 50 Syringes**
- **U- 100 Syringes**

# Guidelines for Insulin Administration

- Syringes
- Disposal
- Syringe Reuse
- Syringe Alternatives
- Injection Technique
- Injection Procedures
- Injection Site

# Insulin Pens



**Temporary Pen devices**  
short term insulin therapy

**Permanent Pen devices**  
Intended for long term Insulin  
therapy



# Advantages of the Pen

- **Fine needle**
- **Easy & Accurate loading**
- **Easy administration**
- **Portable and Easy storage**

12.7 mm (1/2")

RD's largest inner diameter



8 mm (5/16")

No needle is thinner



5 mm (3/16")

World's shortest needle



# Storage of Insulin

- **Refrigerator**
- **Earthen Vessel**
- **Flask with ice water**
- **Coolant jelly while transporting (to maintain the cold chain)**

# Loading the syringe

- **40 U - One division → one unit**
- **100U - One division → two unit**
- **Load air**
- **Push into the vial**
- **Withdraw insulin**
- **Expel air**



# Sites of insulin administration

- **Upper outer arm**
- **Upper outer thigh**
- **Anterior abdominal wall**

# Anterior abdominal wall

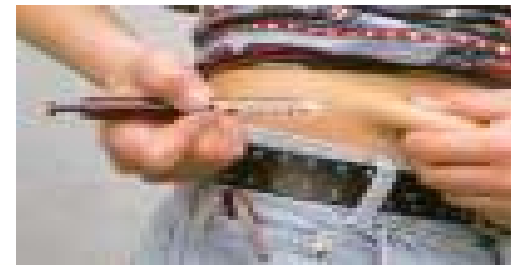
- **ease in self administration**
- **larger surface area**
- **rate of absorption**
- **risk of hitting muscles**

# Technique of insulin administration

- **Normalize temp**
- **Mix**
- **Clean the rubber top**

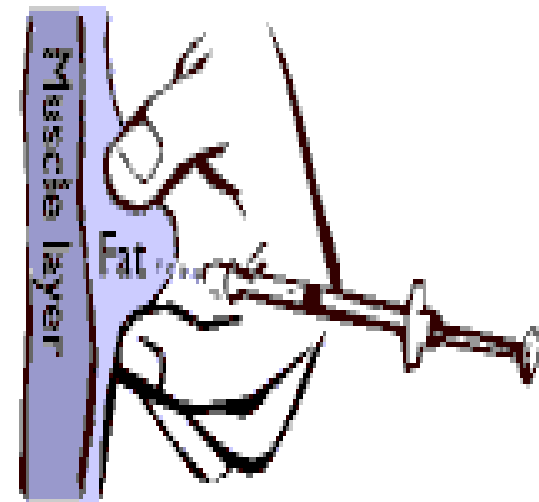
# Insulin administration using Pens

- **Mix**
- **Select the site**
- **Priming**
- **Dial the dose**
- **Inject**
- **Count till 10**
- **Withdraw**



# Injection Technique

- **Appropriate site**
- **Hold the site with non-dominant hand**
- **Hold syringe like a pen,**
- **inject at 90 degrees**
- **Push the plunger**
- **Take a count of 10**
- **Don't massage**



Pinching the skin to give an insulin injection. A small pinch with the finger and thumb is enough.

# Skin Problems & Injection Sites

- **Lipoatrophy**
- **Lipohypertrophy**



*Thank You*