

The Gluco Watch

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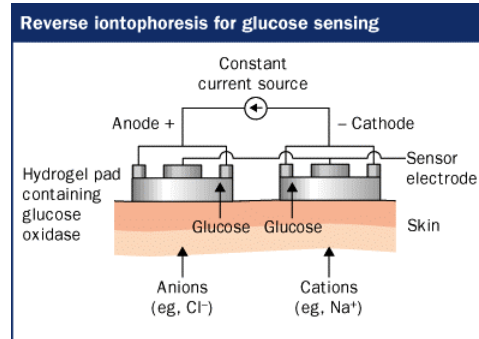
What is Diabetes?

Diabetes is most always an inherited disease that impedes the body's ability to produce insulin, a key element in the break down of glucose. Glucose is a form of sugar that is the body's basic source of energy. Insulin is a hormone produced by the pancreas, without insulin the cells can be surrounded by sugar and still starve. In a diabetic emergency a patient can suffer from hypoglycemia or hyperglycemia. Hypoglycemia is more common and is caused by taking too much insulin creating the patient to have a very low blood sugar level. Hyperglycemia is when the patient has not taken enough insulin creating a high blood sugar level.



What is a Gluco Watch and how it works?

The Gluco Watch is the first FDA approved noninvasive instrument that measures the level of glucose in a patient's blood stream. This device is noninvasive and automatic. It measures the blood sugar every 20 minutes for up to 12 hours. The way the watch works is it uses low levels electric current to extract glucose painlessly and move it into a transdermal pad called the Autosensor which is connected to the back of the watch. The glucose levels are estimated by the auto sensor that uses electrons generated by a reaction caused by the electrical stimulation.



Iontophoresis is the movement of ions as a results of an applied electric field.

Advantages and Disadvantages

People with diabetes measure their blood glucose levels by sticking a finger with a needle to obtain a blood drop that is placed on a test strip and analyzed by a portable instrument. Repeating this procedure several times a day can be painful and it often leads to performing the procedure less infrequently. Since the Gluco Watch is noninvasive, painless, and automatic blood sugar levels are taken more frequently. Some disadvantages are that the Gluco Watch takes 3 hours to warm up and had a about an 18 minute delay in the read out time. The estimated cost of the watch is approximately \$250 to \$350 and the disposable sensor pads cost between \$4 to \$5 a piece.

Scientific American. "Revolutions in Science-Artificial Organs". 1999

<http://www.cygn.com/glucowatch.html>

<http://www.islet.org/lancet02/>

<http://www.diabetes->

midon.org/Archived/Glucosewatch.htm

<http://www.diabetesnet.com/sit.html>

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