

## **MERCHANDISING ASPECTS OF DEVICES FOR MONITORING LEVELS OF BLOOD GLUCOSE**

Prikota A. N., Kovalenko Sv. N.

The National University of Pharmacy, Kharkiv, Ukraine

lana\_koval@mail.ru

It is known that diabetes is a serious chronic disease that affects all the organs and systems of the human body. This disease occurs in violation of the endocrine part of the pancreas, resulting in the amount of glucose in blood or lack or in excess. To monitor blood sugar levels for the prevention of diabetes and to control the disease a special handheld device - glucometer, is used. It helps at any time to determine the level of glucose in your own body. Blood glucose meter is a device whose primary function is independent measurement of human blood sugar.

The main criteria for instruments to monitor blood glucose levels are: ease of operation; price; characteristics (speed of analysis, the type of test strips); measurement accuracy; ease of use. According to the principle of existing blood glucose meters divided into electrochemical and photometric.

Photometric glucometers register the change of color of special test zone. These devices work on capillary blood. Electrochemical blood glucose meter is built on the principles of complex chemical interaction of blood glucose with special chemical elements.

During this interaction is allocated current, that registers the device. These are the most common blood glucose meters, are accurate and require a minimum of blood to measure. But photometric and electrochemical blood glucose meters, which are widely used in many countries, are invasive, require that puncture the skin. For blood samples and use disposable test strips. The main disadvantages of many models of blood glucose meters are: the need to the application of low blood volume is an error in the survey, the optical zone of the device need to be cleaned, the need to rub a drop of blood on a test strip. After 1 minute after application, the effect of hematocrit, cholesterol, triglycerides, some drugs on the measurement results, the lack of protection from improper measurement procedure.

Also, the complexity of determining the concentration of glucose in the blood «in vivo» due to the fact that the concentration of glucose in tissues is ten times less than its concentration in the blood and thus ruled out the use of chemical reactions. Glucometers latest generation spectrometric called for their application does not need the integrity of the blood (noninvasive method). Glucometer translucent palm weak laser and then generates indices on the spectrum, which are developed in the United States.

These devices do not use test stripes, they are the most accurate, but the most expensive. Scanning earlobe patient infrared rays - a method opened in Ukraine.

For blind diabetics and diabetics with low vision produced glucometers, that say, but they are the most expensive.

Consequently, current and future, today is the creation of non-invasive blood glucose meters that will relieve diabetic patients from injury and will allow for more frequent monitoring the concentration of glucose.