

ESTIMATION OF BLOOD GLUCOSE USING GLUCOMETER

MEASUREMENT OF BLOOD GLUCOSE USING GLUCOMETER

It is well recognised that the colorimetric/spectrophotometric estimation of plasma glucose using glucose oxidase method is the gold standard for glucose estimation.

However, in survey settings there are major problems in separating plasma and reaching plasma for glucose estimation to a lab within a short time. Many diabetic persons find it difficult to go all the way to the lab for repeated blood sugar estimation and find it expensive to get someone from the lab to come and collect the blood for blood glucose estimation repeatedly.

Glucometer has come in to vogue as the option under these circumstances.

Even though glucometer estimation of blood glucose is not as accurate and reliable as plasma glucose estimation using spectrophotometer/colorimeter, it is widely used in community based surveys because plasma glucose estimation by colorimeter is not possible under survey conditions.

ACCURACY TESTING OF GLUCOMETER

PROCEDURE FOR BLOOD SUGAR ESTIMATION



The instrument is switched on by pressing the switch



After switching on the glucometer, the symbol for the strip will appear on the screen as seen in picture.



After the strip is inserted correctly a symbol for blood drop will appear on the screen.



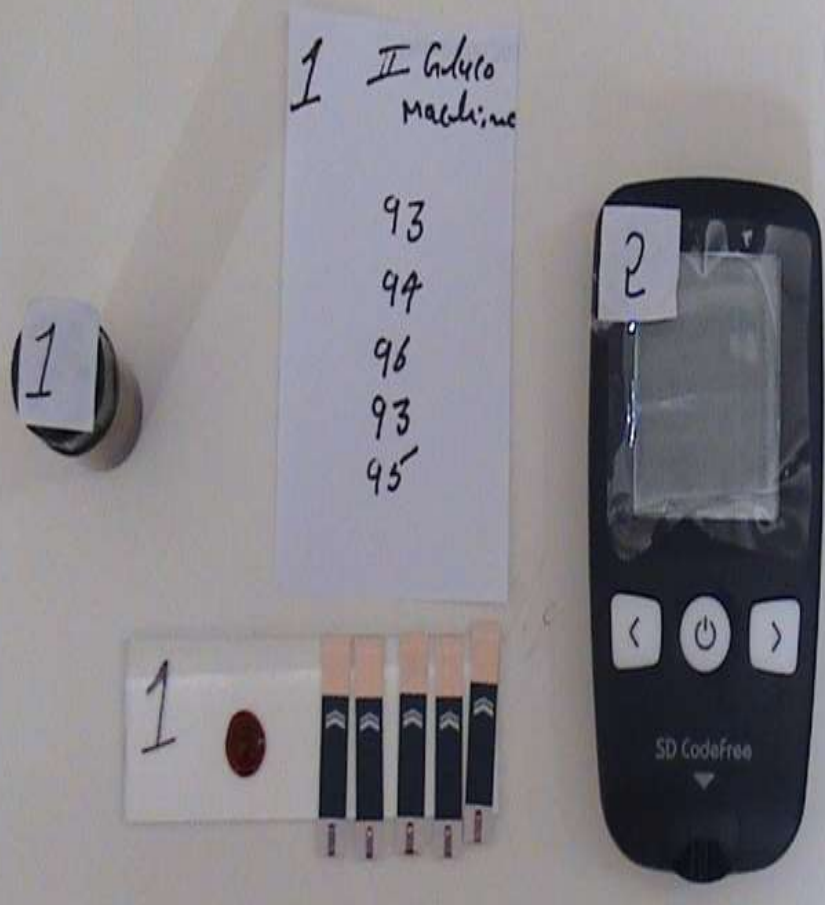
Put the edge of the strip on the drop of blood on the slide or from a finger prick. The blood will get drawn up due to capillary action.



Blood sugar reading will appear in about 5 seconds;

TESTING ACCURACY OF GLUCOMETERS

For testing accuracy of the glucometers used in surveys, collect blood from five normal individuals and estimate blood sugar using glucometer and compare with colorimeter reading



TESTING ACCURACY OF GLUCOMETERS (GLUCOSE MG/DL)

| Blood sample 1 | | Blood sample2 | | Blood sample 3 | | Blood sample 4 | | Blood sample 5 | |
|------------------------------------|----------------|----------------------|----------------|-----------------------|----------------|-----------------------|----------------|-----------------------|----------------|
| No. | glucose | No. | glucose | No. | glucose | No. | glucose | No. | glucose |
| 1 | 100 | 1 | 72 | 1 | 77 | 1 | 77 | 1 | 75 |
| 2 | 101 | 2 | 73 | 2 | 76 | 2 | 77 | 2 | 73 |
| 3 | 93 | 3 | 62 | 3 | 74 | 3 | 68 | 3 | 73 |
| 4 | 100 | 4 | 74 | 4 | 78 | 4 | 84 | 4 | 74 |
| 5 | 99 | 5 | 71 | 5 | 80 | 5 | 79 | 5 | 76 |
| Spectro photo meter | 96 | | 62 | | 76 | | 67 | | 73 |

The difference in the blood glucose values between quintuplicates in glucometer and between spectrophotometer and glucometer is less than 20 mg /dl.

Therefore this glucometer is accurate enough for use

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**Blood has been collected from finger prick for blood glucose estimation by glucometer
Her blood glucose is 120 mg /dl**





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COMMUNITY
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