

PORTABLE TONOMETER OF INTRAOCULAR PRESSURE

# diaton

The present guide contains the basic principles of intraocular pressure (IOP) measuring methodology using diaton tonometer and is assigned for the convenience of the doctor in his daily work.

## 1. Preparation of the tonometer for use

1.1 Take the tonometer **correctly** in hand as it is shown in figure 1: the thumb is placed on the side of the device's body, opposite to STOP button, the middle one - on STOP button (do not press it), the forefinger - above the STOP button, third finger is below the STOP button, the tonometer's body is turned with its tip downwards. The rod is seen in the tip area.



Figure 1



Figure 2

1.2 Press the STOP button with the middle finger and **holding** it move the tonometer **fluently** with its tip upwards (figures 1, 2).

1.3 Return the tonometer **fluently** in the position with its tip downwards **still holding** the STOP button.

1.4 The rod is in the initial position is fixed inside the tonometer (not seen in the tip area). Release the STOP button (figure 3).

**Attention!** If the rod is not in the initial position (is seen in the tip area) repeat steps 1.1-1.4.

1.5 Press the OPERATION button momentarily, holding the tonometer with its tip downwards. "0000" symbol appears on the display. The tonometer is ready for work.

**Attention!** An interrupted sound signal shows the tonometer's deviation from the vertical line; the frequency of the sound signals increases the tonometer being moved closer to the vertical line. The tonometer's position being vertical the sound signal stops.

**Attention!** If the rod is not in the initial position, "0000" symbol is



Figure 3

being displayed in a flickering mode. Not turning the tonometer off repeat steps 1.1-1.4.

1.6. Check the tonometer's capacity for work following the instructions in the Operation Manual (OM).

## 2. Measuring of intraocular pressure

### Attention!

Intraocular pressure measuring is possible the patient's position being sitting or reclining. In a **sitting** position the patient's head is placed horizontally on the head support. In the **reclining** position the patient's head is placed horizontally on the couch's cushion or bolster (the head's throwing back is not allowed). Stand at the side and behind on the left of the patient (if the device is in the right hand) or at the side and behind on the right of the patient (if the device is in the left hand).

2.1 Prepare the tonometer for work (steps 1.1-1.5), the tonometer's tip and rod being previously **disinfected** following the directions of OM.

2.2 Place and fix the patient's glance using the test object (for instance, the patient's hand), the glance line being oriented approximately at the angle of 45°.



Figure 4

2.3 Stretch the patient's upper lid with a finger of a free hand **without pulling it and pressing the eyeball** so that the edge of the upper lid **coincides with the limb**. To do this, correct the patient's eyeball position according to the patient's anatomic peculiarities by means of the test object moving within small limits. Place the hand with the tonometer with the palm's edge on the patient's forehead.



Figure 5

2.4 Make sure that the tonometer is turned ON and the rod is in initial position.

2.5 Move the tonometer to the patient's eyelid holding the device strictly vertically until the interrupted sound signal stops (figure 4).

2.6 Place the tonometer's tip on the lid's cartilaginous part **tightly** to the front edge **in parallel** to it (figure 5), at that the tonometer must be kept **vertically** (there's no sound signal). The influence zone of the tonometer's rod

must be the part of sclera corresponding to **corona ciliaris**.

2.7 **Fluently** move the tonometer's body down keeping its vertical **position** until the rod falls on the eyelid, which is accompanied with a short sound signal. **Do not let the eyelid removal** to the cornea at the moment of the measurement. **Do not press** on the eyelid with the tonometer. The number of IOP single measurement is being displayed and the measurement digital result is automatically registered in the tonometer's memory.

### Attention!

"L" symbol displaying indicates the tonometer's deviation from the vertical line during the measurement. The following measurements should be carried out keeping the tonometer's vertical position.

2.8 Carry out several IOP measurements of the same eye with the interval not more than 30 sec. When you hear a single long sound signal or two long sound signals press the OPERATION button to get the mean value of IOP measuring.

2.9 Interpretation of the mean IOP measuring values received is shown in table 1.

Table 1

Display indication	Result's interpretation	NOTES
Symbol "A" and the mean IOP value in nonflickering mode.	The result is reliable.	The IOP measuring of the eye being studies is finished.
Symbol "A" in flickering mode and the mean IOP value in flickering mode.	The result should be considered as approximate, but if IOP is equal or less than 19 mm Hg., it may be considered as reliable.	If necessary carry out the new measuring series strictly following the methodology.
Symbol "A 00" in a flickering mode.	The result is considered erroneous.	Carry out the new measuring series strictly following the methodology.

2.10 Measure the IOP of the other eye.