

AUTOREFRACTION

Refraction

This is a simplified explanation of refraction. Refraction is the determination of the optical power of the eyes and need for glasses. For best vision an image must be focused clearly on the retina from where it is sent to the brain where it is interpreted.

The SPOT, SureSight or SPOT gives three readings which can be printed out. These readings are S for Sphere, C for Cylinder and A for Axis.

The first reading (S) will be a + or - number. + is for farsightedness (hyperopia), and - is for nearsightedness (myopia).

The second reading (C) will be a - (number) which indicates the size of the astigmatism, at an (axis) (A) (third reading) that is determined by the refraction. For example, +2.00 (sphere) - 0.75 (cylinder) x 90 (axis). This can be written +2.00 - 0.75 x 90. Some Doctors use +cylinders in which case the same Rx may be written +1.25 +0.75 X 180.

When a prescription is placed in front of the eye it should focus the image, so vision is not blurry. Farsightedness (hyperopia) means the eyeball is too short and needs a convex (magnifying) lens to move the image forward. In (myopia) the eye is too long and needs a concave lens to move the image back onto the retina. The cylinder is used to correct astigmatism.

Refraction is the act of determining the glass prescription necessary to provide clear vision.

Autorefracton (SureSight) gives these readings automatically. This reading is not as accurate as that obtained by a doctor using trial lenses, it is useful for screening children and for providing glasses during our adult screenings.

HOW TO USE The AUTOREFRACTOR

There are three pieces of equipment which will provide an estimate of the refractive error of the eye, so we can determine if glasses are needed and what approximate refraction needs to be corrected (to hand out or prescribe glasses).

These devices are: 1. SPOT Vision Screener 2. SureSight Autorefractor

3. Automatic Refractor (autorefractor) - Most Accurate

INSTRUCTIONS FOR USE OF AUTOREFRACTOR:

1. Place Autorefractor on Table or stand, chin rest close to one edge.
2. Plug in Autorefractor
3. Turn on Autorefractor (switch on back or side)
4. Have patient sit in front of Autorefractor and place chin on the chin rest. Raise or Lower chinrest (turning knob on the side) till the eye is level with the autorefractor optic.
5. Place forehead against forehead rest. (adjust seat or table height)
6. The viewing screen will show the face and eye to be tested
7. Raise or lower the optic with the joy stick (twist clockwise or counter clockwise)
8. Move the unit forward or backward (or to the side) to center the eye image and focus the central dot till it is sharp within the pupil.
9. The Autorefractor may take images and readings of the eye and its refractive error automatically. If it does not do this automatically, push and hold the button on the top of the joy stick.
10. Take three readings of each eye.
11. Push the print button to print the results.
12. Write the average readings for S,C and A on the screening form for each eye. (form says SureSight results). The averages are found along the bottom of the screen on the Autorefractor. OD for right eye, OS for left eye.
13. If instructed, staple the results to the patient data form (upper left corner) instead of writing on the patient form.
14. Erase the results by touching the eraser icon on the lower right of the Autorefractor screen.

rev 9/19

