



*Alamogordo Breakfast Lions Club Inc.*  
*Operation KidSight™*  
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How It Works

The iScreen system is accurate, easy to use and requires no verbal response from the patient. It combines several ophthalmic tests in one digital photograph. The tests, commonly called the Hirshberg and Bruckner (or red reflex) tests, provide important information about the eye. They have been used for decades and have been proven to be accurate. The iScreen system uses advanced technology to

administer these tests, called *Digital Ophthalmic Refractometry*. In the time required to take a photograph, a tremendous amount of information about a child's vision is captured. That information is recorded and sent to the iScreen Central Analysis Facility for review. In effect, the iScreen system has brought these tried and proven ophthalmic tests into the Information Age.



**The iScreen Digital Vision Screening System**

**T**he iScreen System identifies the following conditions:

- Myopia (near-sightedness)
- Hyperopia (far-sightedness)
- Strabismus (lazy eye)
- Media opacity (eg. cataracts)
- Anisometropia
- Some degree of astigmatism

The iScreen system captures three types of information:

*Orbital Structure:* the picture acquired by the iScreen system includes facial features like the eyelids and orbits. This allows the iScreen analysts to check for structural symmetry and function (if the eyelids open evenly, for example).

*Eye Alignment:* light reflection from the cornea, called the corneal light reflex, provides information about eye alignment (strabismus or lazy eye).

*Refraction:* a record of the focusing capabilities of each eye is captured in the image. This feature, called the "red reflex," provides information about the refractive power of the eye (near-sightedness, far-sightedness and astigmatism). It also tells us whether there are opacities (like cataracts) in the visual axis.

Vision disorders are the fourth most common disability in the USA and are the most prevalent handicapping condition in childhood.

*Survey of Ophthalmology, 1999.*

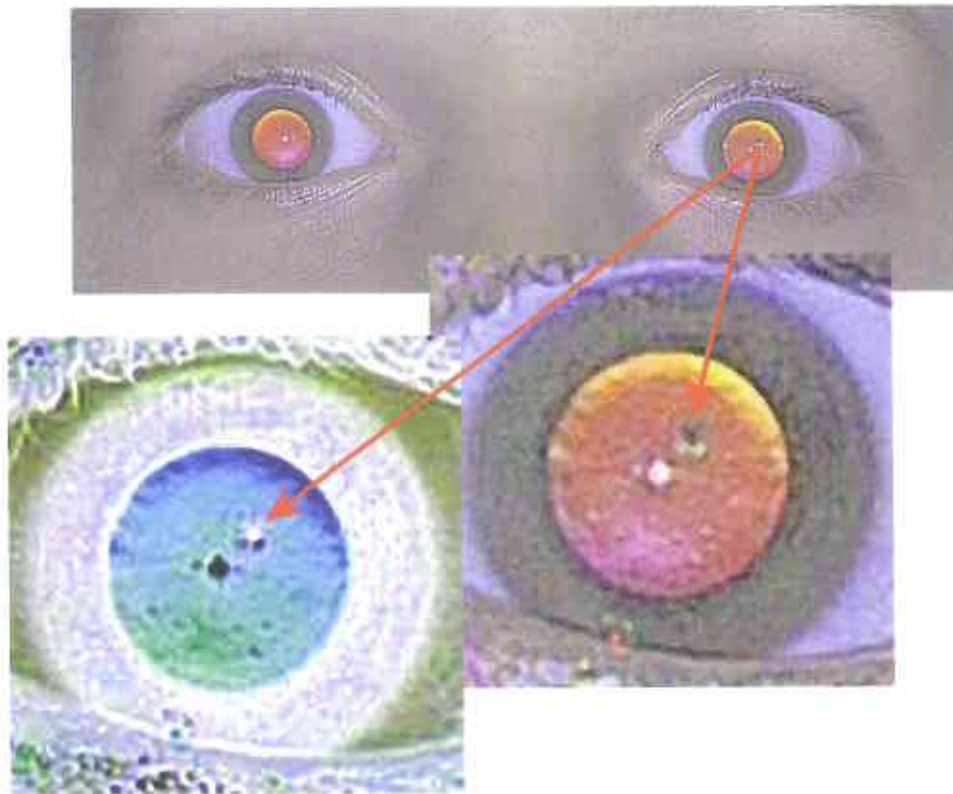
Among school-age children, vision disorders affect one in every four.

American Optometric Association, St. Louis, 1997.

Images and relevant information are electronically transmitted to the iScreen Central Analysis facility. The images are analyzed by highly trained technicians. Screening results indicate if the child should be seen by an eye care specialist. A report is automatically generated for each child, indicating whether referral to an eye care specialist is recommended. The Central Analysis system ensures that image review is consistent, and only qualified, highly trained technicians review each image. Further, a rigorous quality

assurance program has been implemented, including regular (blind) analyst testing to ensure continuing accuracy.

The entire system has been designed to maximize accuracy and effectiveness. Digital imaging allows implementation of sophisticated software to enlarge, enhance and measure regions of interest. Images are transmitted to the Central Analysis Facility in seconds *from anywhere in the world*.



*5-year-old with occlusion in the left eye*