



# Chico Eye Center

## Low VISION INFORMATION

IF YOU OR A LOVED ONE HAS VISION PROBLEMS DUE TO:

- MACULAR DEGENERATION
- GLAUCOMA
- DIABETIC RETINOPATHY
- RETINITIS PIGMENTOSA
- BLINDNESS
- EYE TRAUMA
- OTHER CAUSES

***WE CAN HELP!***

## **Facts About Low Vision and Legal Blindness:**

There is a difference between changes in the aging eye that are normal and those that are not. The only way to distinguish this is with a complete eye exam by an ophthalmologist or an optometrist. Your eye doctor may be able to detect certain vision issues before they cause noticeable symptoms. **Vision loss is NOT a normal part of aging.**

Most studies show that the majority of people with vision loss are not totally blind, but instead have low vision. The most common definition of low vision is “a condition caused by eye disease in which the visual acuity is 20/70 or worse in the better seeing eye and cannot be improved with glasses, contact lenses, medication, or surgery”. (Vision of 20/70 means that the line on an eye chart that a person with impaired vision sees at 20 feet is the same line a person with “normal” vision can see, on the same eye chart, at 70 feet.) However, some eye professionals prefer not to define low vision by the level of vision measured on an eye chart, but instead define it as the level of vision that prevents a person from being able to perform their daily activities.

The definition of legal blindness is different than the definition of low vision. Legal blindness is used by the government to determine eligibility for vocational training, schooling, disability benefits, low vision aids, and tax benefits. Legal blindness is defined as 1) vision of 20/200 or worse in the better seeing eye that cannot be improved with glasses, contact lenses, medication, or surgery OR 2) a visual field of 20 degrees or less in the better seeing eye (tunnel vision).

## **Experiencing Low Vision:**

It is always shocking to learn that vision that has been lost cannot be regained. It is important to recognize that anger, frustration, and depression are commonly experienced feelings with this diagnosis. It is important to stay active, continue to engage with others, and take care of oneself in order to avoid depression (this may appear as fatigue or lack of interest). If you are depressed, it is important to seek treatment, counseling, and consider joining a support group to recognize that your value to yourself and others does not depend on your vision.

Losing vision does not mean giving up activities, but it does mean learning new ways of doing them. There are many tools, techniques, and resources for people with low vision (see below). If a person has low vision, it is important that they do as much as possible independently. For friends and family members of individuals with vision loss, it is important to recognize the challenges of vision loss, but not to take over their tasks. Instead, it is important to help them identify the adjustments that they (and you) will need to make to maximize their independence.

## **Low Vision Symptoms:**

The most common symptoms of low vision are difficulty with

- Reading
- Writing
- Shopping
- Watching TV
- Driving a car
- Recognizing people and faces
- Glare
- Contrast sensitivity

Low vision may primarily affect a person's central vision (what we see when we look straight at something), their peripheral vision (our side vision), and/or their depth perception (the ability to judge the position of objects). Central vision is most commonly affected by conditions such as macular degeneration and diabetes. Peripheral vision is most commonly affected by glaucoma, stroke, and diabetes. Depth perception is most commonly affected when the vision in one eye is significantly different than the vision in the other eye.

### **The Phantom Vision of Charles Bonnet Syndrome:**

Approximately 20-30% of individuals with vision loss will see images that they know are not real. This is called Charles Bonnet Syndrome. This is not a loss of mental capacity, but just part of the vision loss process in some people. Essentially, this is the person's brain attempting to replace the missing areas of vision with some type of image.

### **Low Vision Techniques:**

- Increase the amount of light in your house and work areas
- Reduce glare from inside and outside
- Increase contrast
- Use heavy felt tip markers to make lists and notes

## **Low Vision Aids:**

There are many low vision aids to help improve a person's daily activities. These technologies continue to evolve and improve. With some of these aids there may be a need to undergo some training in order to maximize results. These technologies are not a cure all for those with low vision. Many people will need a combination of aids and may also need vision rehabilitation services with a specially trained occupational therapist to achieve their best possible visual results.

Some of the most common vision aids are:

- Magnifying spectacles
- Hand magnifiers
  - some of these have built in lights
- Stand magnifiers
  - hands free magnification
  - may or may not have built in lights
- Telescopes
  - attachment to eyeglasses
- Talking items – watches, timers, blood pressure cuffs, blood sugar devices
- Large print books, magazines, playing cards, and bank checks
- Telephones, thermostats, watches, remote controls with large sized numbers and contrasting colors
- Needle threaders, magnifying mirrors and tactile labels
- Video magnifiers
  - portable and desktop versions. These use a camera and a screen to magnify and improve the contrast of text and images.

- E-readers
  - have adjustable fonts.
  - reverse polarity (dark background with white letters) that helps improve contrast
- Audio books
- Smart phones
  - Built in powerful flashlights
  - Magnification features
  - Voice recognition
  - Various apps (read text aloud, interpret bar codes, identify colors, read handwriting, orally describe objects, and more). Some of the more popular are TapTapSee (free), Seeing AI (free), and KNFB Reader (fee).
- Tablets
  - Enlarged print
  - Text to speech
  - Voice recognition
  - Photography without requiring precise focus
- Computers
  - software to convert sound to print and vice
  - software to enlarge text
- Ride share services
  - Go Go Granny (with Uber) in some areas allows readers to phone in their description along with pickup location so the driver can identify them.
- Head mounted devices (stationary)
  - Iris Vision, NuEyes, e-Sight (among others) that offer broad clear view rather than the limited view through a magnifier or a telescope
- Head mounted devices (mobile)
  - OrCam is a camera mounted on an eyeglasses frame that offers text to speech capability as well as descriptions of objects and people

- AIRA
  - Is a subscription service that connects a person with vision loss to a live agent via wearable smart glasses. The agent can see the user's environment in real time, knows their location by GPS, and can assist with navigation, finding objects, or doing tasks.
- Blindsquare and iWatch
  - These are wearable systems that vibrate to assist with way finding in people with significant vision loss and mobility issues
- The Smart Cane
  - Uses ultrasound to detect objects
- Buzz Clip
  - Clipped on to clothes, it uses ultrasound to detect objects
- iGlasses
  - uses ultrasound to detect objects
- ScriptTalk
  - Audio medication label reader
- Sara
  - Freestanding text to speech device which reads printed material aloud
- DAISY (Digital Accessible Information System)
  - Over 600,000 free/low cost formatted audiobooks

## **Resources:**

### E-books and readers

- Bookshare
- Spotlight Text

### Books and magazines on tape

- National Library services for the Blind (800) 424-8567
- California State Library (800) 952-5666
- American Printing House for the Blind (800) 223-1839
- Choice Magazine Listenings (888) 724-6423

### Large print materials

- LS&S (800) 468-4789
- MaxiAids (800) 522-6294
- Enhance Vision (888) 811-3161
- Independent Living Aids (800) 537-2118

### Computer enlargement

- Magnifying mouse
- Ai Squared

### Telephone assistance

- California Telephone Access Program (800) 806-4474

### National and state organizations

- California Department of Rehabilitation (530) 895-6040
- AMD Alliance International (212) 821-9200
- American Occupational Therapy Association (800) 729-2682
- Macular Degeneration Support (888) 866-6148

### Vision rehabilitation self help

- Blindsight Inc.- a quarterly magazine on how to adapt to vision loss (800) 860-4224
- “Getting Started” Kit for People New to Vision Loss at [VisionAware.org](http://VisionAware.org)
- A Self Help Guide to Nonvisual Skill



- *Making Life More Livable: Simple Adaptations for Living at Home After Vision Loss*, M. Duffy: American Foundation for the Blind, 2002. (800) 232-3044
- *Macular Degeneration: The Complete Guide to Saving and Maximizing Your Sight*, L. Mogk, MD and M. Mogk, PhD
- *The First Year – Age Related Macular Degeneration*, D. Roberts
- *Overcoming Macular Degeneration: A Guide to Seeing Beyond the Clouds*, Y. Solomon and J. Solomon

Locating vision rehabilitation professionals and services

- Veterans
  - U. S. Department of Veteran Affairs (844) 698-2311
- Everyone
  - American Foundation for the Blind (800) 232-5463