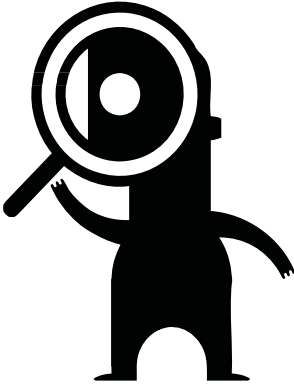


Enhancing Low Vision: Magnification and Magnifiers



For many people with low vision, the inability to read creates the greatest hardship. Fortunately there are many magnifying devices that can help.

The purpose of magnification is to increase the size of the retinal image so that you can see print or objects more easily.

There are four basic ways to do this:

- Enlarge the actual object
- Bring the object closer
- Make the object appear larger
- Enlarge the object by projecting it electronically onto a screen.

This article will focus on three common types of magnifiers:

- Hand magnifiers
- Stand magnifiers
- Spectacle magnifiers

As these magnifiers bring an object closer to the eye, the retinal image becomes larger. The decreased viewing distance creates the magnification; lenses clarify the enlarged image.

What is the best magnifier to use?

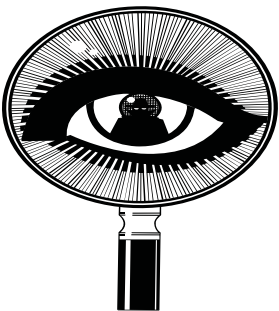
First: Think about the tasks and activities you want to do, as some magnifiers are better for certain tasks than others.

Second: What you see through a magnifier—your *field of view*—depends on the strength and design of the magnifier. For example, the stronger a magnifier is, the smaller its field of view will be, and the closer you will have to hold the materials.

Third: High-powered magnifiers may require special training for effective use, so you need to determine how motivated you are to learn new skills. Finally, any limitations created by your eye condition or other physical conditions can affect the type and effectiveness of magnifiers you use.

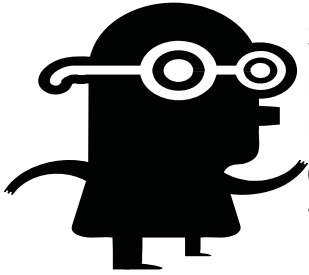


Hand magnifiers are the most recognizable type of magnifiers since many people find them comfortable and easy to use. They are portable, relatively lightweight and may be used with or without glasses. The distance between the eye and the lens can be adjusted at will, which provides a greater working range. However, hand magnifiers must be held steadily at the correct focal distance to obtain maximum benefit. The farther the eye is from the lens, the smaller the field of view, and magnification is decreased if the magnifier is moved closer to the page. People who use a visual skill called “eccentric viewing” can easily manipulate a hand magnifier, although those who have tremors may find it difficult to use. Unlike spectacle magnifiers, a hand magnifier usually requires both hands.



Stand magnifiers have a preset focal distance and rest directly on the surface of the reading material. Some have self-contained illumination, perfect for those who need more light. Stand magnifiers can be helpful to people who cannot hold a hand magnifier. Disadvantages include a reduced visual field; to widen the field you have to move closer to the magnifier, and a posture that can be awkward and tiring. Furthermore, you must look down directly into the lens; distortion occurs if the image is viewed from an angle. Also, writing is difficult as the design of some stand magnifiers obstructs the pen.

Both **hand** and **stand** magnifiers are designed to help with short-term “up close” spotting tasks. Typical uses include reading a newspaper briefly or scanning headlines; reading labels or prices while shopping; seeing dials, gauges, and other controls on ovens, grills, or ranges; reading recipes; looking up telephone numbers; and reading mail.



Spectacle magnifiers (magnifying glasses) are strong reading-only lenses worn like conventional glasses. They use either regular or half-eye frames. One advantage of this type of magnifier is that both hands remain free to adjust reading materials or for writing. Spectacle magnifiers have a larger field of view compared with the hand and stand magnifiers, because they are worn close to the eye. A spectacle magnifier has a shorter working distance than conventional spectacles, however, which requires you to hold the material closer than usual in order to read.

Many stores carry low powered versions of the three types of magnifiers discussed above. However, these “over-the-counter” magnifiers are often not strong enough for people with serious vision loss. If you find that low-powered magnifiers no longer help, there are many other devices and techniques you can utilize to make better use of your remaining vision. These include high-powered prescription magnifiers, telescopes and closed circuit television systems. These devices and skills are offered through low vision rehabilitation programs, which assess your remaining vision, help you determine your best options for low vision devices and teach you how to use them most effectively. Such programs also introduce you to simple adjustments you can make in your environment such as improving lighting, reducing glare and heightening contrast.

Choosing the Right Strength **Diopters and X Powers**

- + 4.00 diopters = 1X
 - + 8.00 diopters = 2X
 - + 12.00 diopters = 3X
 - + 16.00 diopters = 4X
 - + 20.00 diopters = 5X
-



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Programs and Services

- Low vision clinic and low vision rehabilitation
- Instruction in independent living skills
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- Education, information and referral services
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