



Working Effectively with People who are Blind or Visually Impaired

What is blindness or visual impairment?

To many people, the word “blindness” implies complete darkness. In reality, a person who is categorized as “blind” may retain some usable vision. The term “legally blind” designates vision of 20/200 or worse in the better eye (with best correction), or a field of vision restricted to 20° or less. “Vision impairment” describes a variety of levels of vision loss, and “severe vision impairment” describes vision which can be corrected, at best, to 20/70.

Some people are born with no vision or significantly reduced vision. Others lose vision due to accidents or the natural aging process, usually starting in their 40s. Vision loss is sometimes sudden, or it may be gradual. Some conditions (diabetes, for example) cause vision to fluctuate from day to day.

How does blindness affect employment?

When a significant vision loss occurs, time off from work to receive adaptive training may be needed. Such instruction can allow a person to continue as a productive and dedicated employee.

What fields employ people who are blind or visually impaired?

With appropriate training and equipment, people who are blind or visually impaired have the same range of abilities as sighted people, including professional success as

artists and musicians	boat builders
auto mechanics	fashion models
governors	teachers
lawyers	machinists
masseuses	mayors
production workers	story tellers
computer programmers	word processing specialists

The Americans with Disabilities Act

Everyone in the workforce uses helpful technologies each day. Velcro fasteners on protective clothing, hand trucks, word processors – these and countless other tools allow us to accomplish things that would be difficult and sometimes impossible without them. Such supports enhance our productivity by reasonably accommodating our humanness.

Similarly, the Americans with Disabilities Act (ADA) requires that employers “reasonably accommodate” the limitations imposed by a person’s physical or mental disability. Reasonable accommodation is defined as the modification or adjustment of a job, employment practice, or work environment that makes it possible for a qualified person with a disability to perform the essential functions of a job.

The ADA extends protections to all aspects of a job, so a reasonable accommodation may be required during the application process, on the job, in training, at the work site, and/or when considering promotions and layoffs. If job duties change, new accommodations may become necessary.

The ADA requires an employer to accommodate the individual with a disability unless doing so would cause an undue hardship. A hardship is “undue” if it would cause significant difficulty or expense to the current circumstances of the employer’s business. To make this determination, one examines (among other things) the nature and net cost of the accommodation; the number of employees, type of operations and financial resources of the facility, and the larger business entity of which it may be a part; and the impact of the accommodation on the operation of the facility. If the cost would impose an undue burden on the employer’s business, the employer may offer the person with the disability an opportunity to provide his or her own accommodation or may assist that person in finding resources to pay for the accommodation. If employers think of accommodations as “productivity enhancements” (similar to others in the workplace), then they become a cost of doing business.

What accommodations might be offered during the employee selection process?

During the hiring process, employers seek to determine whether applicants have the necessary skills, experience, education, and other background to perform the essential functions of the job. This is the same regardless of disability status; employers need similar information about every applicant in order to make effective hiring decisions. In order to provide equal access to this process, it is sometimes necessary to offer specific accommodations.

For instance, if a visual impairment prevents a person from reading and completing a printed job application, he or she may become discouraged and hesitate to apply (even if the job itself requires minimal vision). Potential em-

employers can attract and retain qualified blind and/or visually impaired candidates by offering accessible options during the application process. Options might include:

- mailing the application to the candidate;
- offering a walk-in applicant the opportunity to take the form home, get assistance to complete it, and return it by mail or in person; or
- providing an electronic application to complete online.

Similarly, specific information about accessibility can be helpful to an interviewee who is blind or visually impaired. An employer might appropriately offer any of the following kinds of assistance:

- driving directions (candidate may be able to drive using assistive technology, or may retain a driver);
- location of the closest public transportation stop; and/or
- assistance from the reception area to the interview location by asking, “Would you like to take my arm?” In this case, the candidate may lightly grasp your arm just above the elbow and follow a step behind you, or choose to follow you without assistance.

As with any prospective employee, attention to non-verbal cues and respect for appropriate boundaries will facilitate the interview process. Assistance should be offered but not insisted upon, and a guide animal, if present, should not be petted or distracted.

Although all interviews require care to avoid using insensitive or biased expressions, there is no need to avoid normal, customary language and phrasings with an interviewee who is blind or visually impaired. Phrases such as the following are appropriate:

- “Do you see what I mean?”

- “Would you like to take a look at the work area?”
- “I hope to see you again.”

How can productivity be sustained and enhanced?

When an ADA-required accommodation becomes necessary, employer and employee can work together to brainstorm and research equipment options and/or job restructuring. The person who requests an accommodation has lived (and perhaps worked) with his or her disability and may already know what will sustain productivity most effectively. Appropriate assistive technology (AT) may need to be acquired in order to provide proper accommodation. The term, “AT,” includes any item, piece of equipment, or product system (whether acquired commercially off-the-shelf, modified, or customized) that is used to increase, maintain, or improve the functional capabilities of individuals with disabilities. AT services include any service that directly assists an individual with a disability with the selection, acquisition, or use of an AT device.

Low-Tech Assistive Technology

AT can enhance employee productivity, and it does not have to be complicated or expensive. Low-tech AT solutions include:

- magnification devices (e.g., handheld magnifiers);
- a dot of silicon placed on a knob, switch, or button (permits a blind person to align the controls on a machine);
- a wide, felt-tipped marker for writing file folder labels (readable to a person with a visual impairment);
- electronic text and voice mail instead of written notes;
- a human reader for printed and handwritten materials that cannot be converted electronically;

- work hours that correspond with mass transit availability;
- sharing or switching job tasks among employees to maximize strengths;
- Braille labels on vending machines; and/or
- accessible labels for parts bins.

Employees who are blind or have low vision will be able to suggest additional, simple solutions.

High-Tech Assistive Technology

Adaptive software or hardware can provide enlarged screen displays, speech output, or Braille output. This AT has been developed for the Windows operating system. The Apple Mac can enlarge information on the monitor and includes a screen reader software package called Voiceover.

- Optical Character Recognition (OCR) systems (or “reading machines”) include a scanner and recognition software. Print materials are scanned into a computer and the information is displayed on a monitor. A person who is blind or visually impaired can access information through screen enlargement, a screen reader, or refreshable Braille display. Offices may have scanner/printer/copier systems which require only an additional adaptation. Prices for scanners range from \$100 to \$700. Optical Character Recognition software, designed for use by people who are blind, is priced between \$100 and \$1000. Some of the more popular scanning packages are Openbook, Kurzweil 1000, and Text Cloner. A stand-alone OCR system without a monitor costs about \$2900.
- Screen enlargement programs use software to enlarge text and graphics from 2X to 36X on a computer monitor. Using larger monitors or dual monitors will also help employees who use these enlargement programs. MAGic and ZoomText, the two leading screen enlargement programs, each cost about \$600.
- Screen reader systems provide speech output as a synthesized voice reading text from the computer monitor. Most screen readers have a robotic voice, but software programs are available to make them sound more human. Although some software that is mouse-dependent or highly graphical is more difficult for a screen reader to process, there are ways to address this. These programs give auditory feedback of on-screen content including menus, dialog boxes, text, and other messages commonly displayed in Windows. They cost between \$500 and \$1000. Popular screen reader programs include JAWS for Windows, Window-Eyes, and System Access.
- Electronic Magnification Systems (also known as closed circuit television or CCTV) use a modified motion camera to magnify printed material and display it, usually on a 19” monitor. This device permits a person who has some usable vision to read print materials and to fill out forms. CCTV systems are often the best way for a person with some functional vision to read printed material visually. Black and white systems are available, but most people opt for the variety of foreground and background colors offered by a color system at an average cost of \$2500. Some portable systems use a hand-held camera that may connect to a TV. These systems cost between \$500 and \$1000. They require the user to hold the camera, which may present limitations for a person with a physical disability.
- Braille output uses a refreshable Braille device to display up to 80 characters of text at a time. This allows an entire line of information to be read from a monitor. There is no typical price for a refreshable Braille device, but costs run about \$110 per Braille cell (most have 40-60 cells). Popular refreshable devices include the BrailleNote, PACmate, and the Braille Sense.

All three devices function as refreshable Braille output for the computer, and they are also stand-alone personal digital assistants (PDAs).

- Braille documents can be created using a Braille translation program and a Braille embosser with special heavy Braille paper. Translation programs typically cost about \$400, and embossers average around \$3000.

All of these assistive software and hardware technologies were designed to work with the Windows operating system. They also work with most commercial software programs. Also, AT companies generally provide customer service to assist with compatibility.

When considering costs of accommodations, an employer should review expenses for the company's entire computer system and the overall financial resources of the facility before deciding whether the equipment needed to enhance a visually impaired worker's productivity is too expensive. In some cases, the individual who is blind may already have the needed equipment. Vocational rehabilitation services may also be able to assist. In general, well equipped work areas, individually organized by the workers who use them, are likely to maximize productivity.

Tips for On-The-Job Training

Employees who are blind or visually impaired need the same initial training for a new position as their sighted colleagues. Providing orientation to the company and the job, and considering whether verbal instruction alone or a combination of hands-on, written, and verbal learning is most effective will facilitate orientation for all new employees. Printed materials should be available in an accessible medium.

Performance Management

In any workplace, the supervisor must establish an atmosphere that fosters productivity and quality work. Employees who are blind or visually impaired have the same career aspirations as other employees and can be expected to contribute similarly to these goals, provided that appropriate training and accessible materials are provided. Like others, they want to know when they are performing well and when they need to do things differently. Clear communication is essential, and performance appraisals should be conducted using the same criteria for all peer employees. If feedback is provided throughout the year, an annual performance appraisal should contain no surprises.

One way employers can support productivity in workers who are blind or visually impaired is by periodically reviewing adaptive equipment to ensure that it works well and meets employee needs. Upgrading when necessary can help employees who need AT to remain competitive in their fields. The local Vocational Rehabilitation Agency, Rehabilitation Center for the Blind, or rehabilitation service provider can provide more information about maintaining and upgrading AT to keep up with emerging technologies, product compatibility, and current pricing.

Training and Promotion

Providing the same opportunities for advancement (attending out-of-town training, speaking at professional conferences, training new workers) as for comparable employees allows workers who are blind or visually impaired to grow with and through their jobs, just as their sighted coworkers do. If accommodations are needed in order to have access to such opportunities, they should be provided as identified by the employee. In any case, employers can create a positive and productive work envi-

ronment by using the same approaches and criteria for career planning and promotion for employees who are blind or visually impaired as they use for all employees.

Resources

A number of resources offer job adaptation assistance to employers and their employees who are blind or visually impaired. Discussions about accommodation should always begin with the employee. A number of organizations can provide additional information:

ADA Disability and Business Technical Assistance Center Hotline
800.949.4232 (voice/TTY)

American Council of the Blind
2200 Wilson Boulevard, Suite 650,
Arlington, VA 22201
800.424.8666 or visit <http://www.acb.org>

American Foundation for the Blind
National Technology Center
2 Penn Plaza, Suite 1102, New York, NY 10121
M-F, 8:30 a.m. – 4:30 p.m.
212.502.7600 or visit www.afb.org
The AFB Career Connect provides resources for employers including a “virtual worksites” section where employers can get a comprehensive understanding of current workplace uses of AT by people who are blind or visually impaired.

Equal Employment Opportunity Commission
131 M Street NE, Washington, DC 20507
Technical Assistance 800.669.4000 (voice)
800.669.6820 (TTY)
Publications 800.669.3362 (voice)
800.669.3302 (TTY)

Job Accommodation Network (JAN)
800.526.7234 (voice)
877.781.9403 (TTY) or visit <http://askjan.org>
Employers can speak with Human Factors Consultants about an individual with a disability (not limited to blindness or low vision). The consultant searches JAN’s database for information related to the functional requirements of the job, the functional limitations of the employee, environmental factors, etc. The search provides information about similar situations, names and addresses of appropriate resources, and consultation on assistive technologies.

Listing of State Vocational Rehabilitation Agencies Serving the Blind
Visit www.ncsab.org/ncsab_directory.htm

National Federation of the Blind (NFB)
200 East Wells Street, Baltimore, MD 21230
410.659.9314 or visit <http://www.nfb.org>

Rehabilitation Research & Training Center (RRTC) on Blindness and Low Vision at Mississippi State University
800.675.7782 or visit www.blind.msstate.edu
The RRTC can provide technical assistance to employers who are considering hiring a person with a vision impairment or trying to retain a valuable employee who is experiencing vision loss.

Services (or Commission) for the Blind (look in local phone book under state agencies or vocational rehabilitation)
Some of these agencies have technology centers where employers can view adaptive equipment.

Vocational Rehabilitation Division (in states that do not have a separate agency for people who are blind)

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The U.S. Equal Employment Opportunity Commission has reviewed it for accuracy. However, opinions about the Americans with Disabilities Act (ADA) expressed in this material are those of the author, and do not necessarily reflect the viewpoint of the Commission or the publisher. EEOC interpretations of the ADA are reflected in its ADA regulations (29 CFR Part 1630), Technical Assistance Manual for Title I of the Act, and Enforcement Guidance.

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The Equal Employment Opportunity Commission has issued enforcement guidance which provides additional clarification of various elements of the Title I provisions under the ADA. Copies of the guidance documents are available for viewing and downloading from the EEOC web site at:
<http://www.eeoc.gov>

About this Brochure

This brochure is one of a series on human resources practices and workplace accommodations for persons with disabilities edited by Susanne M. Bruyère, Ph.D., CRC, Director, Employment and Disability Institute, Cornell University ILR School.

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The full text of this brochure, and others in this series, can be found at www.hrtps.org.

More information on accessibility and accommodation is available from the ADA National Network at 800.949.4232 (voice/ TTY), www.adata.org.

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