

Ophthalmic Laboratory Technicians

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Significant Points

- Nearly all ophthalmic laboratory technicians learn their skills on the job.
- Employment is expected to grow more slowly than the average, reflecting the increasing use of automated machinery.
- Only a limited number of job openings will be created each year, because the occupation is small.

Nature of the Work

Ophthalmic laboratory technicians—also known as manufacturing opticians, optical mechanics, or optical goods workers—make prescription eyeglass or contact lenses. Prescription lenses are curved in such a way that light is correctly focused onto the retina of the patient's eye, improving his or her vision. Some ophthalmic laboratory technicians manufacture lenses for other optical instruments, such as telescopes and binoculars. Ophthalmic laboratory technicians cut, grind, edge, and finish lenses according to specifications provided by dispensing opticians, optometrists, or ophthalmologists and may insert lenses into frames to produce finished glasses. Although some lenses still are produced by hand, technicians are increasingly using automated equipment to make lenses.

Ophthalmic laboratory technicians should not be confused with workers in other vision care occupations. Ophthalmologists and optometrists are “eye doctors” who examine eyes, diagnose and treat vision problems, and prescribe corrective lenses. Ophthalmologists are physicians who perform eye surgery. Dispensing opticians, who also may do the work of ophthalmic laboratory technicians, help patients select frames and lenses, and adjust finished eyeglasses. (See the statement on physicians and surgeons, which includes ophthalmologists, as well as the statements on optometrists and opticians, dispensing, elsewhere in the *Handbook*.)

Ophthalmic laboratory technicians read prescription specifications, select standard glass or plastic lens blanks, and then mark them to indicate where the curves specified on the prescription should be ground. They place the lens in the lens grinder, set the dials for the prescribed curvature, and start the machine. After a minute or so, the lens is ready to be “finished” by a machine that rotates it against a fine abrasive, to grind it and smooth out rough edges. The lens is then placed in a polishing machine with an even finer abrasive, to polish it to a smooth, bright finish.

Next, the technician examines the lens through a lensometer, an instrument similar in shape to a microscope, to make sure that the degree and placement of the curve are correct. The technician then cuts the lenses and bevels the edges to fit the frame, dips each lens into dye if the prescription calls for tinted or coated lenses, polishes the edges, and assembles the lenses and frame parts into a finished pair of glasses.

In small laboratories, technicians usually handle every phase of the operation. In large ones, in which virtually every phase of the operation is automated, technicians may be responsible for operating computerized equipment. Technicians also inspect the final product for quality and accuracy.

Working Conditions

Ophthalmic laboratory technicians work in relatively clean and well-lit laboratories and have limited contact with the public. Their

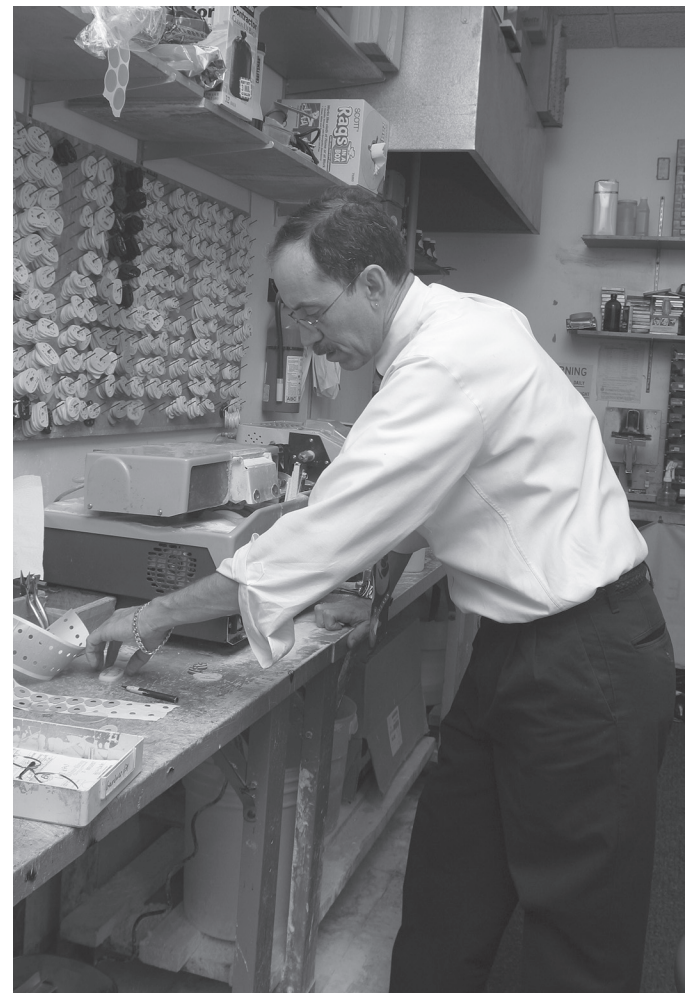
surroundings are relatively quiet despite the humming of machines. At times, technicians wear goggles to protect their eyes, and they may spend a great deal of time standing.

Most ophthalmic laboratory technicians work a 5-day, 40-hour week, which may include weekends, evenings, or, occasionally, some overtime. Some work part time.

Ophthalmic laboratory technicians need to take precautions against the hazards associated with cutting glass, handling chemicals, and working near machinery.

Employment

Ophthalmic laboratory technicians held about 33,000 jobs in 2002. Around 34 percent were in health and personal care stores, such as optical goods stores that manufacture and sell prescription glasses and contact lenses. About 29 percent were in medical equipment and supplies manufacturing, working for ophthalmic goods manufacturers that produce eyewear and contact lenses for sale by retail stores, as well as by ophthalmologists and optometrists. Most of the rest were in offices of other health practitioners, professional and commercial equipment and supplies merchant wholesalers, offices of physicians, employment services, or in commercial and service industry machine manufacturing firms that produce lenses for other optical instruments, such as telescopes and binoculars.



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Training, Other Qualifications, and Advancement

Nearly all ophthalmic laboratory technicians learn their skills on the job. Employers filling trainee jobs prefer applicants who are high school graduates. Courses in science, mathematics, and computers are valuable; manual dexterity and the ability to do precision work are essential.

Technician trainees producing lenses by hand start on simple tasks, such as marking or blocking lenses for grinding, and then progress to grinding, cutting, edging, and beveling lenses, and, finally, to assembling the eyeglasses. Depending on individual aptitude, it may take up to 6 months to become proficient in all phases of the work.

Technicians using automated systems will find computer skills valuable. Training is completed on the job and varies in duration, depending on the type of machinery and the worker's aptitude.

A very small number of ophthalmic laboratory technicians learn their trade in the Armed Forces or in the few programs in optical technology offered by vocational-technical institutes or trade schools. These programs have classes in optical theory, surfacing and lens finishing, and the reading and applying of prescriptions. Programs vary in length from 6 months to 1 year and award certificates or diplomas.

Ophthalmic laboratory technicians can become supervisors and managers. Some become dispensing opticians, although further education or training generally is required in that occupation.

Job Outlook

Overall employment of ophthalmic laboratory technicians is expected to grow more slowly than the average for all occupations through the year 2012, reflecting the increasing use of automated machinery. Most job openings will arise from the need to replace technicians who transfer to other occupations or who leave the labor force. Only a limited number of job openings will be created each year, because the occupation is small.

Demographic trends make it likely that many more Americans will need vision care in the years ahead. Not only will the population grow, but also, the proportion of middle-aged and older adults is projected to increase rapidly. Middle age is a time when many people use corrective lenses for the first time, and elderly persons usually require more vision care than others.

Fashion also influences demand. Frames come in a variety of styles and colors, encouraging people to buy more than one pair. Demand is expected to grow as well in response to the availability of new technologies that improve the quality and look of corrective lenses, such as antireflective coatings and bifocal lenses without the line that is visible in traditional bifocals.

Earnings

Median hourly earnings of ophthalmic laboratory technicians were \$10.46 in 2002. The middle 50 percent earned between \$8.73 and \$13.05 an hour. The lowest 10 percent earned less than \$7.56, and the highest 10 percent earned more than \$16.40 an hour. In 2002, median hourly earnings of ophthalmic laboratory technicians were \$10.68 in medical equipment and supplies manufacturing and \$10.15 in health and personal care stores.

Related Occupations

Workers in other precision production occupations include dental laboratory technicians; opticians, dispensing; orthotists and prosthetists; and precision instrument and equipment repairers.

Sources of Additional Information

For a list of accredited programs in ophthalmic laboratory technology, contact:

► Commission on Opticianry Accreditation, P.O. Box 3073, Merrifield, VA 22116-3073.

State employment service offices can provide information about job openings for ophthalmic laboratory technicians.