

facilities, diet workshops, physical fitness facilities, school systems, colleges and universities, and the Federal Government—mostly in the U.S. Department of Veterans Affairs. Some dietitians and nutritionists were employed by firms that provide food services on contract to such facilities as colleges and universities, airlines, correctional facilities, and company cafeterias.

Some dietitians were self-employed, working as consultants to facilities such as hospitals and nursing homes, or providing dietary counseling to individual clients.

### Training, Other Qualifications, and Advancement

High school students interested in becoming a dietitian or nutritionist should take courses in biology, chemistry, mathematics, health, and communications. Dietitians and nutritionists need at least a bachelor's degree in dietetics, foods and nutrition, food service systems management, or a related area. College students in these majors take courses in foods, nutrition, institution management, chemistry, biochemistry, biology, microbiology, and physiology. Other suggested courses include business, mathematics, statistics, computer science, psychology, sociology, and economics.

Twenty-seven of the 41 States with laws governing dietetics require licensure, 13 require certification, and 1 requires registration. The Commission on Dietetic Registration of the American Dietetic Association (ADA) awards the Registered Dietitian credential to those who pass a certification exam after completing their academic coursework and supervised experience. Because practice requirements vary by State, interested candidates should determine the requirements of the State in which they want to work before sitting for any exam.

As of 2001, there were 234 bachelor's and master's degree programs approved by the ADA's Commission on Accreditation for Dietetics Education (CADE). Supervised practice experience can be acquired in two ways. The first requires completion of an ADA-accredited coordinated program. As of 2001, there were 51 accredited programs, which combined academic and supervised practice experience and generally lasted 4 to 5 years. The second option requires completion of 900 hours of supervised practice experience in any of the 258 CADE-accredited/approved internships. Internships and may be full-time programs lasting 6 to 12 months, or part-time programs lasting 2 years. Students interested in research, advanced clinical positions, or public health may need an advanced degree.

Experienced dietitians may advance to assistant, associate, or director of a dietetic department, or become self-employed. Some dietitians specialize in areas such as renal or pediatric dietetics. Others may leave the occupation to become sales representatives for equipment, pharmaceutical, or food manufacturers.

### Job Outlook

Employment of dietitians is expected to grow about as fast as the average for all occupations through 2010 as a result of increasing emphasis on disease prevention through improved dietary habits. A growing and aging population will increase the demand for meals and nutritional counseling in nursing homes, schools, prisons, community health programs, and home healthcare agencies. Public interest in nutrition and the emphasis on health education and prudent lifestyles will also spur demand, especially in management. In addition to employment growth, job openings also will result from the need to replace experienced workers who leave the occupation.

The number of dietitian positions in hospitals is expected to grow slowly as hospitals continue to contract out food service operations. On the other hand, employment is expected to grow fast in contract providers of food services, social services agencies, and offices and clinics of physicians.

Employment growth for dietitians and nutritionists may be somewhat constrained by some employers substituting other workers such as health educators, food service managers, and dietetic technicians. Growth also is constrained by limitations on insurance reimbursement for dietetic services.

### Earnings

Median annual earnings of dietitians and nutritionists were \$38,450 in 2000. The middle 50 percent earned between \$31,070 and \$45,950 a year. The lowest 10 percent earned less than \$23,680, and the highest 10 percent earned more than \$54,940 a year. Median annual earnings in hospitals, the industry employing the largest numbers of dietitians and nutritionists, were \$39,450.

According to the American Dietetic Association, median annual income for registered dietitians in 1999 varied by practice area as follows: \$48,810 in consultation and business, \$48,370 in food and nutrition management, \$47,040 in education and research, \$37,990 in community nutrition, and \$37,565 in clinical nutrition. Salaries also vary by years in practice, educational level, geographic region, and size of community.

### Related Occupations

Workers in other occupations who may apply the principles of food and nutrition include food service managers, health educators, and registered nurses.

### Sources of Additional Information

For a list of academic programs, scholarships, and other information about dietetics, contact:

► The American Dietetic Association, 216 West Jackson Blvd., Suite 800, Chicago, IL 60606-6995. Internet: <http://www.eatright.org>

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## Occupational Therapists

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(O\*NET 29-1122.00)

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### Significant Points

- Employment is projected to increase faster than the average, as rapid growth in the number of middle-aged and elderly individuals increases the demand for therapeutic services.
- Occupational therapists are increasingly taking on supervisory roles.
- More than one-third of occupational therapists work part time.

### Nature of the Work

Occupational therapists (OTs) help people improve their ability to perform tasks in their daily living and working environments. They work with individuals who have conditions that are mentally, physically, developmentally, or emotionally disabling. They also help them to develop, recover, or maintain daily living and work skills. Occupational therapists not only help clients improve basic motor functions and reasoning abilities, but also compensate for permanent loss of function. Their goal is to help clients have independent, productive, and satisfying lives.

Occupational therapists assist clients in performing activities of all types, ranging from using a computer, to caring for daily needs such as dressing, cooking, and eating. Physical exercises may be used to increase strength and dexterity, while paper and pencil exercises may be chosen to improve visual acuity and the ability to

discern patterns. A client with short-term memory loss, for instance, might be encouraged to make lists to aid recall. A person with coordination problems might be assigned exercises to improve hand-eye coordination. Occupational therapists also use computer programs to help clients improve decision making, abstract reasoning, problem solving, and perceptual skills, as well as memory, sequencing, and coordination—all of which are important for independent living.

For those with permanent functional disabilities, such as spinal cord injuries, cerebral palsy, or muscular dystrophy, therapists instruct in the use of adaptive equipment such as wheelchairs, splints, and aids for eating and dressing. They also design or make special equipment needed at home or at work. Therapists develop computer-aided adaptive equipment and teach clients with severe limitations how to use it. This equipment enables clients to communicate better and to control other aspects of their environment.

Some occupational therapists, called *industrial therapists*, treat individuals whose ability to function in a work environment has been impaired. They arrange employment, plan work activities, and evaluate the client's progress.

Occupational therapists may work exclusively with individuals in a particular age group, or with particular disabilities. In schools, for example, they evaluate children's abilities, recommend and provide therapy, modify classroom equipment, and in general, help children participate as fully as possible in school programs and activities. Occupational therapy is also beneficial to the elderly population. Therapists help senior citizens lead more productive, active and independent lives through a variety of methods, including the use of adaptive equipment.

Occupational therapists in mental health settings treat individuals who are mentally ill, mentally retarded, or emotionally disturbed. To treat these problems, therapists choose activities that help people learn to cope with daily life. Activities include time management skills, budgeting, shopping, homemaking, and use of public transportation. They may also work with individuals who are dealing with alcoholism, drug abuse, depression, eating disorders, or stress related disorders.

Recording a client's activities and progress is an important part of an occupational therapist's job. Accurate records are essential for evaluating clients, billing, and reporting to physicians and others.

### Working Conditions

Occupational therapists in hospitals and other health care and community settings usually work a 40-hour week. Those in schools



Occupational therapists use a variety of treatments to relieve pain.

may also participate in meetings and other activities, during and after the school day. More than one-third of occupational therapists work part time.

In large rehabilitation centers, therapists may work in spacious rooms equipped with machines, tools, and other devices generating noise. The job can be tiring, because therapists are on their feet much of the time. Those providing home healthcare may spend time driving from appointment to appointment. Therapists also face hazards such as back strain from lifting and moving clients and equipment.

Therapists are increasingly taking on supervisory roles. Due to rising healthcare costs, third party payers are beginning to encourage occupational therapist assistants and aides to take more hands-on responsibility. By having assistants and aides work more closely with clients under the guidance of a therapist, the cost of therapy should be more modest.

### Employment

Occupational therapists held about 78,000 jobs in 2000. About 1 in 6 occupational therapists held more than one job in 2000. The largest number of jobs was in hospitals, including many in rehabilitation and psychiatric hospitals. Other major employers include offices and clinics of occupational therapists and other health practitioners, school systems, home health agencies, nursing homes, community mental health centers, adult daycare programs, job training services, and residential care facilities.

Some occupational therapists are self-employed in private practice. They see clients referred by physicians or other health professionals, or provide contract or consulting services to nursing homes, schools, adult daycare programs, and home health agencies.

### Training, Other Qualifications, and Advancement

A bachelor's degree in occupational therapy is the minimum requirement for entry into this field. All States, Puerto Rico, and the District of Columbia regulate occupational therapy. To obtain a license, applicants must graduate from an accredited educational program, and pass a national certification examination. Those who pass the test are awarded the title of registered occupational therapist.

In 1999, entry-level education was offered in 88 bachelor's degree programs; 11 postbachelor's certificate programs for students with a degree other than occupational therapy; and 53 entry-level master's degree programs. Nineteen programs offered a combined bachelor's and master's degree and 2 offered an entry-level doctoral degree. Most schools have full-time programs, although a growing number also offer weekend or part-time programs.

Occupational therapy coursework includes physical, biological, and behavioral sciences, and the application of occupational therapy theory and skills. Completion of 6 months of supervised fieldwork also is required.

Persons considering this profession should take high school courses in biology, chemistry, physics, health, art, and the social sciences. College admissions offices also look favorably at paid or volunteer experience in the healthcare field.

Occupational therapists need patience and strong interpersonal skills to inspire trust and respect in their clients. Ingenuity and imagination in adapting activities to individual needs are assets. Those working in home health care must be able to successfully adapt to a variety of settings.

### Job Outlook

Employment of occupational therapists is expected to increase faster than the average for all occupations through 2010. Federal legislation imposing limits on reimbursement for therapy services may adversely affect the job market for occupational therapists in the

near term. However, over the long run, the demand for occupational therapists should continue to rise as a result of growth in the number of individuals with disabilities or limited function requiring therapy services. The baby-boom generation's movement into middle age, a period when the incidence of heart attack and stroke increases, will increase the demand for therapeutic services. The rapidly growing population 75 years of age and above (an age that suffers from a high incidence of disabling conditions), also will demand additional services. Medical advances now enable more patients with critical problems to survive. These patients may need extensive therapy.

Hospitals will continue to employ a large number of occupational therapists to provide therapy services to acutely ill inpatients. Hospitals will also need occupational therapists to staff their outpatient rehabilitation programs.

Employment growth in schools will result from expansion of the school-age population and extended services for disabled students. Therapists will be needed to help children with disabilities prepare to enter special education programs.

### Earnings

Median annual earnings of occupational therapists were \$49,450 in 2000. The middle 50 percent earned between \$40,460 and \$57,890. The lowest 10 percent earned less than \$32,040, and the highest 10 percent earned more than \$70,810. Median annual earnings in the industries employing the largest numbers of occupational therapists in 2000 were as follows:

Nursing and personal care facilities .....	\$51,220
Hospitals .....	50,430
Offices of other health practitioners .....	49,520
Elementary and secondary schools .....	45,340

### Related Occupations

Occupational therapists use specialized knowledge to help individuals perform daily living skills and achieve maximum independence. Other workers performing similar duties include chiropractors, physical therapists, recreational therapists, rehabilitation counselors, respiratory therapists, and speech-language pathologists and audiologists.

### Sources of Additional Information

For more information on occupational therapy as a career, contact:

► The American Occupational Therapy Association, 4720 Montgomery Ln., P.O. Box 31220, Bethesda, MD 20824-1220. Internet: <http://www.aota.org>

## Optometrists

(O\*NET 29-1041.00)

### Significant Points

- Licensed optometrists must earn a Doctor of Optometry degree from an accredited optometry school and pass a written and a clinical State board examination.
- Competition for admission to optometry school is keen.
- Because optometrists usually remain in practice until they retire, replacement needs arise almost entirely from retirements.

### Nature of the Work

More than half of the people in the United States wear glasses or contact lenses. Optometrists, also known as *doctors of optometry*, or *ODs*, provide most primary vision care.

Optometrists examine people's eyes to diagnose vision problems and eye diseases. They use instruments and observation to examine eye health and to test patients' visual acuity, depth and color perception, and ability to focus and coordinate the eyes. Optometrists analyze test results and develop a treatment plan. Optometrists prescribe eyeglasses and contact lenses, and provide vision therapy and low vision rehabilitation. They administer drugs to patients to aid in the diagnosis of eye vision problems and prescribe drugs to treat some eye diseases. Optometrists often provide preoperative and postoperative care to cataract, laser vision correction, and other eye surgery patients. They also diagnose conditions due to systemic diseases such as diabetes and high blood pressure, and refer patients to other health practitioners as needed.

Optometrists should not be confused with ophthalmologists or dispensing opticians. Ophthalmologists are physicians who perform eye surgery, and diagnose and treat eye diseases and injuries. Like optometrists, they also examine eyes and prescribe eyeglasses and contact lenses. Dispensing opticians fit and adjust eyeglasses and in some States may fit contact lenses according to prescriptions written by ophthalmologists or optometrists. (See the sections on physicians and surgeons; and opticians, dispensing, elsewhere in the *Handbook*.)

Most optometrists are in general practice. Some specialize in work with the elderly, children, or partially sighted persons who need specialized visual devices. Others develop and implement ways to protect workers' eyes from on-the-job strain or injury. Some specialize in contact lenses, sports vision, or vision therapy. A few teach optometry, perform research, or consult.

Most optometrists are private practitioners who also handle the business aspects of running an office, such as developing a patient base, hiring employees, keeping records, and ordering equipment and supplies. Optometrists who operate franchise optical stores also may have some of these duties.



*Optometrists diagnose vision problems and eye diseases.*