

spinal adjustments, and provide clinical experience in physical and laboratory diagnosis, neurology, orthopedics, geriatrics, physiotherapy, and nutrition. Chiropractic programs and institutions grant the degree of Doctor of Chiropractic (DC).

Chiropractic requires keen observation to detect physical abnormalities. It also takes considerable hand dexterity to perform adjustments, but not unusual strength or endurance. Chiropractors should be able to work independently and handle responsibility. As in other health-related occupations, empathy, understanding, and the desire to help others are good qualities for dealing effectively with patients.

Newly licensed chiropractors can set up a new practice, purchase an established one, or enter into partnership with an established practitioner. They also may take a salaried position with an established chiropractor, a group practice, or a healthcare facility.

Job Outlook

Job prospects are expected to be good for persons who enter the practice of chiropractic. Employment of chiropractors is expected to grow faster than the average for all occupations through the year 2010 as consumer demand for alternative healthcare grows. Chiropractors emphasize the importance of healthy lifestyles and do not prescribe drugs or perform surgery. As a result, chiropractic care is appealing to many health-conscious Americans. Chiropractic treatment of back, neck, extremities, and other joint damage has become more accepted as a result of recent research and changing attitudes about alternative healthcare practices. The rapidly expanding older population, with their increased likelihood of mechanical and structural problems, also will increase demand.

Demand for chiropractic treatment is also related to the ability of patients to pay, either directly or through health insurance. Although more insurance plans now cover chiropractic services, the extent of such coverage varies among plans. Increasingly, chiropractors must educate communities about the benefits of chiropractic care in order to establish a successful practice.

In this occupation, replacement needs arise almost entirely from retirements. Chiropractors usually remain in the occupation until they retire; few transfer to other occupations. Establishing a new practice will be easiest in areas with a low concentration of chiropractors.

Earnings

Median annual earnings of salaried chiropractors were \$67,030 in 2000. The middle 50 percent earned between \$44,030 and \$105,520 a year.

Self-employed chiropractors usually earn more than salaried chiropractors. According to the American Chiropractic Association, in 2000, the average income for all chiropractors, including the self-employed, was about \$81,500 after expenses. In chiropractic, as in other types of independent practice, earnings are relatively low in the beginning, and increase as the practice grows. Earnings also are influenced by the characteristics and qualifications of the practitioner, and geographic location. Self-employed chiropractors must provide for their own health insurance and retirement.

Related Occupations

Chiropractors treat and work to prevent bodily disorders and injuries. So do dentists, occupational therapists, optometrists, physical therapists, physicians and surgeons, podiatrists, and veterinarians.

Sources of Additional Information

General information on chiropractic as a career is available from:

- ▶ American Chiropractic Association, 1701 Clarendon Blvd., Arlington, VA 22209. Internet: <http://www.amerchiro.org>

- ▶ International Chiropractors Association, 1110 North Glebe Rd., Suite 1000, Arlington, VA 22201. Internet: <http://www.chiropractic.org>
- ▶ World Chiropractic Alliance, 2950 N. Dobson Rd., Suite 1, Chandler, AZ 85224-1802. Internet: <http://www.worldchiropracticalliance.org>
- ▶ Dynamic Chiropractic, P.O. Box 40109, Huntington, CA 92605. Internet: <http://www.chiroweb.com>

For a list of chiropractic programs and institutions, as well as general information on chiropractic education, contact:

- ▶ Council on Chiropractic Education, 7975 North Hayden Rd., Suite A-210, Scottsdale, AZ 85258.

For information on State education and licensure requirements, contact:

- ▶ Federation of Chiropractic Licensing Boards, 901 54th Ave., Suite 101, Greeley, CO 80634. Internet: <http://www.fclb.org/fclb>

For information on requirements for admission to a specific chiropractic college, as well as scholarship and loan information, contact the admissions office of the individual college.

Dentists

(O*NET 29-1021.00, 29-1022.00, 29-1023.00, 29-1024.00, 29-1029.99)

Significant Points

- Most dentists have at least 8 years of education beyond high school.
- Although employment growth will provide some job opportunities, most jobs will result from the need to replace the large number of dentists projected to retire.
- Dental care will increasingly focus on prevention, which involves teaching people how better to care for their teeth.

Nature of the Work

Dentists diagnose, prevent, and treat teeth and tissue problems. They remove decay, fill cavities, examine x rays, place protective plastic sealants on children's teeth, straighten teeth, and repair fractured teeth. They also perform corrective surgery on gums and supporting bones to treat gum diseases. Dentists extract teeth and make models and measurements for dentures to replace missing teeth. They provide instruction on diet, brushing, flossing, use of fluorides, and other aspects of dental care, as well. They also administer anesthetics and write prescriptions for antibiotics and other medications.

Dentists use a variety of equipment, including x-ray machines, drills, and instruments such as mouth mirrors, probes, forceps, brushes, and scalpels. They wear masks, gloves, and safety glasses to protect themselves and their patients from infectious diseases.

Dentists in private practice oversee a variety of administrative tasks, including bookkeeping, and buying equipment and supplies. They may employ and supervise dental hygienists, dental assistants, dental laboratory technicians, and receptionists. (These occupations are described elsewhere in the *Handbook*.)

Most dentists are general practitioners, handling a variety of dental needs. Other dentists practice in 1 of 9 specialty areas. *Orthodontists*, the largest group of specialists, straighten teeth by applying pressure to the teeth with braces or retainers. The next largest group, *oral and maxillofacial surgeons*, operate on the mouth and jaws. The remainder may specialize as *pediatric dentists* (focusing on dentistry for children); *periodontists* (treating gums and bone supporting the teeth); *prosthodontists* (replacing missing teeth with permanent fixtures, such as crowns and bridges, or removable fixtures, such as dentures); *endodontists* (performing root canal



Nearly all dentists work in private practices.

therapy); *public health dentists* (promoting good dental health and preventing dental diseases within the community); *oral pathologists* (studying oral diseases); or *oral and maxillofacial radiologists* (diagnosing diseases in the head and neck through the use of imaging technologies).

Working Conditions

Most dentists work 4 or 5 days a week. Some work evenings and weekends to meet their patients' needs. Most full-time dentists work about 40 hours a week, but others work more. Initially, dentists may work more hours as they establish their practice. Experienced dentists often work fewer hours. A considerable number continue in part-time practice well beyond the usual retirement age.

Most dentists are "solo practitioners," meaning they own their own businesses and work alone or with a small staff. Some dentists have partners, and a few work for other dentists as associate dentists.

Employment

Dentists held about 152,000 jobs in 2000. Almost all dentists work in private practice. According to the American Dental Association, about 80 percent of dentists in private practice are sole proprietors, and 13 percent belong to a partnership. A small number of salaried dentists work in private or public hospitals and clinics.

Training, Other Qualifications, and Advancement

All 50 States and the District of Columbia require dentists to be licensed. In most States, a candidate must graduate from a dental school accredited by the American Dental Association's Commission on Dental Accreditation, and pass written and practical examinations to qualify for a license. Candidates may fulfill the written part of the State licensing requirements by passing the National Board Dental Examinations. Individual States or regional testing agencies administer the written or practical examinations.

Currently, about 17 States require dentists to obtain a specialty license before practicing as a specialist. Requirements include 2 to 4 years of postgraduate education and, in some cases, completion of a special State examination. Most State licenses permit dentists to engage in both general and specialized practice. Dentists who want to teach or do research usually spend an additional 2 to 5 years in advanced dental training, in programs operated by dental schools or hospitals.

Dental schools require a minimum of 2 years of college-level pre dental education. However, most dental students have at least a

bachelor's degree. Pre dental education emphasizes coursework in the sciences.

All dental schools require applicants to take the Dental Admissions Test (DAT). When selecting students, schools consider scores earned on the DAT, applicants' grade point average, and information gathered through recommendations and interviews.

Dental school usually lasts 4 academic years. Studies begin with classroom instruction and laboratory work in basic sciences, including anatomy, microbiology, biochemistry, and physiology. Beginning courses in clinical sciences, including laboratory techniques, also are provided at this time. During the last 2 years, students treat patients, usually in dental clinics, under the supervision of licensed dentists.

Most dental schools award the degree of Doctor of Dental Surgery (DDS). The rest award an equivalent degree, Doctor of Dental Medicine (DMD).

Dentistry requires diagnostic ability and manual skills. Dentists should have good visual memory, excellent judgment of space and shape, a high degree of manual dexterity, and scientific ability. Good business sense, self-discipline, and communication skills are helpful for success in private practice. High school and college students who want to become dentists should take courses in biology, chemistry, physics, health, and mathematics.

Some dental school graduates work for established dentists as associates for a year or two in order to gain experience and save money to equip an office of their own. Most dental school graduates, however, purchase an established practice or open a new one immediately after graduation. Each year, about one-fourth to one-third of new graduates enroll in postgraduate training programs to prepare for a dental specialty.

Job Outlook

Employment of dentists is expected to grow more slowly than the average for all occupations through 2010. Although employment growth will provide some job opportunities, most jobs will result from the need to replace the large number of dentists projected to retire. Job prospects should be good if the number of dental school graduates does not grow significantly, thus keeping the supply of newly qualified dentists near current levels.

Demand for dental care should grow substantially through 2010. As members of the baby-boom generation advance into middle age, a large number will need maintenance on complicated dental work, such as bridges. In addition, elderly people are more likely to retain their teeth than were their predecessors, so they will require much more care than in the past. The younger generation will continue to need preventive checkups despite treatments such as fluoridation of the water supply, which decreases the incidence of tooth decay.

Dental care will focus more on prevention, including teaching people how better to care for their teeth. Dentists will increasingly provide care that is aimed at preventing tooth loss—rather than simply providing treatments, such as fillings. Improvements in dental technology also will allow dentists to provide more effective and less painful treatment to their patients.

However, the employment of dentists is not expected to grow as rapidly as the demand for dental services. As their practices expand, dentists are likely to hire more dental hygienists and dental assistants to handle routine services.

Earnings

Median annual earnings of salaried dentists were \$129,030 in 2000. Earnings vary according to number of years in practice, location, hours worked, and specialty.

Self-employed dentists in private practice tend to earn more than do salaried dentists. A relatively large proportion of dentists is

self-employed. Like other business owners, these dentists must provide their own health insurance, life insurance, and retirement benefits.

Related Occupations

Dentists examine, diagnose, prevent, and treat diseases and abnormalities. So do chiropractors, optometrists, physicians and surgeons, podiatrists, psychologists, and veterinarians.

Sources of Additional Information

For information on dentistry as a career and a list of accredited dental schools, contact:

▶ American Dental Association, Commission on Dental Accreditation, 211 E. Chicago Ave., Chicago, IL 60611. Internet: <http://www.ada.org>

For information on admission to dental schools, contact:

▶ American Dental Education Association, 1625 Massachusetts Ave. NW., Washington, DC 20036. Internet: <http://www.adea.org>

The American Dental Association also will furnish a list of State boards of dental examiners. Persons interested in practicing dentistry should obtain the requirements for licensure from the board of dental examiners of the State in which they plan to work.

Prospective dental students should contact the office of student financial aid at the schools to which they apply, in order to obtain information on scholarships, grants, and loans, including Federal financial aid.



Dietitians and nutritionists help prevent and treat illnesses by promoting healthy eating habits.

Dietitians and Nutritionists

(O*NET 29-1031.00)

Significant Points

- Employment of dietitians is expected to grow about as fast as the average for all occupations through the year 2010 as a result of increasing emphasis on disease prevention through improved health habits.
- Dietitians and nutritionists need at least a bachelor's degree in dietetics, foods and nutrition, food service systems management, or a related area.

Nature of the Work

Dietitians and nutritionists plan food and nutrition programs, and supervise the preparation and serving of meals. They help prevent and treat illnesses by promoting healthy eating habits and suggesting diet modifications, such as less salt for those with high blood pressure or reduced fat and sugar intake for those who are overweight.

Dietitians run food service systems for institutions such as hospitals and schools, promote sound eating habits through education, and conduct research. Major areas of practice include clinical, community, management, and consultant dietetics.

Clinical dietitians provide nutritional services for patients in institutions such as hospitals and nursing homes. They assess patients' nutritional needs, develop and implement nutrition programs, and evaluate and report the results. They also confer with doctors and other healthcare professionals in order to coordinate medical and nutritional needs. Some clinical dietitians specialize in the management of overweight patients, care of the critically ill, or of renal (kidney) and diabetic patients. In addition, clinical dietitians in nursing homes, small hospitals, or correctional facilities also may manage the food service department.

Community dietitians counsel individuals and groups on nutritional practices designed to prevent disease and promote good health. Working in places such as public health clinics, home health agencies, and health maintenance organizations, they evaluate individual needs, develop nutritional care plans, and instruct individuals and their families. Dietitians working in home health agencies provide instruction on grocery shopping and food preparation to the elderly, individuals with special needs, and children.

Increased interest in nutrition has led to opportunities in food manufacturing, advertising, and marketing, in which dietitians analyze foods, prepare literature for distribution, or report on issues such as the nutritional content of recipes, dietary fiber, or vitamin supplements.

Management dietitians oversee large-scale meal planning and preparation in healthcare facilities, company cafeterias, prisons, and schools. They hire, train, and direct other dietitians and food service workers; budget for and purchase food, equipment, and supplies; enforce sanitary and safety regulations; and prepare records and reports.

Consultant dietitians work under contract with healthcare facilities or in their own private practice. They perform nutrition screenings for their clients, and offer advice on diet-related concerns such as weight loss or cholesterol reduction. Some work for wellness programs, sports teams, supermarkets, and other nutrition-related businesses. They may consult with food service managers, providing expertise in sanitation, safety procedures, menu development, budgeting, and planning.

Working Conditions

Most dietitians work a regular 40-hour week, although some work weekends. Many dietitians work part time.

Dietitians and nutritionists usually work in clean, well-lighted, and well-ventilated areas. However, some dietitians work in warm, congested kitchens. Many dietitians and nutritionists are on their feet for much of the workday.

Employment

Dietitians and nutritionists held about 49,000 jobs in 2000. More than half were in hospitals, nursing homes, or offices and clinics of physicians.

State and local governments provided about 1 job in 10—mostly in health departments and other public health related areas. Other jobs were in restaurants, social service agencies, residential care