

# PRE-OSTEOPATHIC MEDICAL: ACADEMIC AND CAREER INFORMATION

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## NATURE OF THE WORK, EARNINGS AND OCCUPATIONAL OUTLOOK

Osteopathic physicians, known as D.O.s, use all the tools and technology available to modern medicine with the added benefits of a holistic philosophy and a system of hands-on diagnosis and treatment known as osteopathic manipulative medicine (American Association of Colleges of Osteopathic Medicine, 2009). This modality can be used to relieve discomfort or musculoskeletal abnormality associated with a number of disorders, including: asthma, sinus disorder, carpal tunnel, migraines and menstrual pain. Osteopathic medicine's goal is to promote the body's innate ability to heal itself. The D.O. philosophy considers the impact of lifestyle and community on an individual's health and to treat the patients instead of treating an ailment or disease. D.O.'s are licensed to practice in any area of medicine within the United States. Osteopathic medicine is rapidly growing with one in five medical students attending an osteopathic medical school. The majority of most osteopathic medical school graduates choose careers in primary care. While DOs constitute 7 percent of all U.S. physicians, they are responsible for 16 percent of patient visits in communities with populations of fewer than 2,500 (AACOM, 2009).

Though earnings vary according to number of years in practice, type of practice, geographical location, and specialty, the average annual income of physicians after expenses is \$185,000 according to [Explorehealthcareers.org](http://Explorehealthcareers.org). With changes in the health care system, there are fewer solo practices and more physicians joining medical groups or networks. As employees of these medical groups, more physicians are drawing a set salary, so earnings potential may be more limited than in the past when the most physicians worked for themselves. The Occupational Outlook Handbook reports that employment of physicians and surgeons will grow faster than average for all occupations through 2016 due to continued expansion of the health care industries. Job prospects are expected to be the best for physicians entering primary care specialties such as general and family medicine, pediatricians, and internists.

## UNDERGRADUATE MEDICAL EDUCATION (MEDICAL SCHOOL)

There are 25 accredited osteopathic medical schools and 3 branch campuses in the U.S. that award the degree of Doctor of Osteopathic medicine (D.O.). Osteopathic medical school usually requires 4 academic years. The first two years of osteopathic medical school are geared toward the basic sciences, learning a core set of clinical examination skills and courses that cover the various systems of the body. "The first two years of lectures and laboratories are designed to prepare the student for the last two years of medical school, which are the clinical clerkship years" (Osteopathic Medical College Information Book, 2009). The second two years involves a series of clinical rotations throughout inpatient and outpatient settings where students work with patients under the supervision of attending physicians and medical residents. Throughout the 4 years of training osteopathic principles and techniques are integrated into the curriculum and rotations as additional resources for diagnosis and treatment of disease. During the last year of medical school,

students make decisions about medical specialty and apply for internship or residency programs in their desired area of expertise.

## GRADUATE MEDICAL EDUCATION (RESIDENCY AND FELLOWSHIP TRAINING)

Following medical school, graduates begin their graduate medical education or residency, which is paid on-the-job training in a specialty. The years of training required, between 3 and 7, depends on the specialty selected. Due to the Osteopathic philosophy the majority of D.O.s choose residencies in Family Practice, Pediatrics, and Internal Medicine which requires 3 years of training. Training in Obstetrics and Gynecology, Pathology, Anesthesiology, Dermatology, Neurology, Nuclear Medicine, Ophthalmology, Physical Medicine, Psychiatry, Radiology and Radiation Oncology lasts 4 years. The surgical specialties including General, Neurological, Orthopaedic, Otolaryngology, and Urology require 5 years of residency. Most specialties also offer advanced training in a subspecialty usually requiring an additional 1 to 2 years of fellowship following residency. D.O. graduates may apply to osteopathic and allopathic residency programs. Allopathic residency applicants may be required to take the USMLE (US Medical Licensing Exam) in addition to the COMLEX (Osteopathic Licensing Exam).

## PRE-MEDICAL PREPARATION (COLLEGE)

Due to the competitive nature of the medical school application process and rigorous training required, students should carefully consider their motivation and preparation for a career in medicine. In 2009, a total of 12,617 applicants applied to osteopathic medical school for 4,693 osteopathic medical college seats. The **mean science GPA** for applicants is a **3.25**. The **mean GPA** for entering students in 2007 was a **3.35**.

### MAJOR:

Any major is appropriate for osteopathic medical school preparation. While a science major requires many of the same basic pre-requisites, selecting a science major is not required for admission to any medical school. Students are advised to select a major they find interesting and to work at developing a broad-based, interdisciplinary foundation of knowledge and skills from which they can build upon.

### COURSE REQUIREMENTS FOR OSTEOPATHIC MEDICAL SCHOOL:

Specific undergraduate course requirements vary from program to program. Requirements that differ from those listed below can be found in school catalogs or in the [Osteopathic Medical College Information Book](#) which is available for free online at [www.aacom.org](http://www.aacom.org) or in the HPAO Resource Library. **This is NOT a comprehensive list of prerequisites for all Osteopathic programs. Students maintain responsibility for verifying course selection with individual programs.**

### CSULB courses which fulfill admission requirements at most U.S. DO programs:

Pre-medical Courses	CSULB Courses
One Year of General Chemistry with Lab	Chemistry 111A & 111B
One Year of Organic Chemistry with Lab	Chemistry 320A & 320B ( <i>Chem. &amp; Biochem. majors</i> ) <b>OR</b> 322A w/ 323A & 322B w/ 323B ( <i>Bio &amp; other majors</i> )
One Year of General Biology with Lab	Biology 111 w/ 111L & 212 w/ 212L & 213 w/ 213L*

Pre-medical Courses	CSULB Courses
One Year of General Physics with Lab	Physics 100A & 100B <b>OR</b> 151 & 152 & 254
One Semester to 1 Year of Calculus	Math 119A & 119B <b>OR</b> 122 & 123
One Year of English (Composition and Literature preferred)	English 100 <b>AND</b> one of the following 101,102, 184 or 300 (some schools <b>MAY</b> take equivalent courses)

\*Required or **Highly** Recommended

**Strongly Recommended (required at some schools):**

Pre-medical Courses	CSULB Courses
One (or more) courses in Biochemistry	Chemistry 441A and/or 441B or 448**
One course in Statistics	Biology 260 <b>OR</b> Statistics 108
Genetics	Biology 370
Mammalian Physiology	Biology 342
Microbiology	Microbiology 211

\*\*Some schools may not accept 448

Courses in the Social Sciences, Humanities, Languages, and computer skills are also recommended.

Please note: Many U.S. medical schools do not accept AP units toward the satisfaction of stated Pre-requisite courses- see HPAO for details.

**MCAT:**

The Medical College Admission Test (MCAT) is a standardized exam consisting of three multiple-choice sections (Verbal Reasoning, Physical Sciences, and Biological Sciences) and a writing sample (two thirty-minute essays). The MCAT is required by most medical schools and is used in combination with other criteria to evaluate an applicant’s potential for success in medical school. Before attempting the MCAT, students should have completed at least one year each of biology, general chemistry, organic chemistry, and physics. The MCAT is administered exclusively in a computer-based-format. The exam is offered on 24 dates throughout the year. A free computer format practice test is available at: [www.e-mcat.com](http://www.e-mcat.com).

**OTHER FACTORS CONSIDERED FOR SUCCESSFUL APPLICATION TO MEDICAL SCHOOLS:**

**CLINICAL EXPERIENCE** is strongly recommended for admission to most medical schools. This can include a paid or volunteer position in a doctor’s office, local clinic, or a hospital. Most hospitals and clinics gladly accept volunteers (contact the volunteer services office at your local hospital for more information). Medical school admission committees want to know that you have the desire and ability to work with patients. The successful participation in clinical volunteer or job experience can demonstrate this. **Note: Many osteopathic medical schools will require a letter of recommendation from a D.O.** See HPAO for details.

**COMMUNITY SERVICE** experience is highly valued by osteopathic medical schools. Future doctors should be able to demonstrate compassion and a willingness to give back to their communities. Getting involved in community service

efforts on and off campus that are of interest to you can enhance a medical school application. CSULB has a number of academic, service and health professions organizations to join.

**WORK EXPERIENCE** can also be valuable in demonstrating your potential to succeed in medical school. Past success in a work environment can reveal meaningful information to admissions committees. Depending on the setting, work experience can develop and showcase a variety of skills including communication (oral and/or written) time management, and problem solving.

**LETTERS OF RECOMMENDATION** are required for application to medical school. The purpose of the letters is to provide medical schools with an impression of the applicant from respected academicians or persons who are in a position to observe the applicant's work as it relates to the study of medicine. Students are encouraged to create and maintain positive contacts with prospective recommenders early in their academic career. The typical letter packet consists of three to five letters, two from science professors, one from a non-science professor and one, or more, from supervisors of relevant work, research, or clinical activities. Many DO programs ask for a letter of recommendation from a D.O. or M.D. The following schools require a letter from a D.O.: Lake Erie COM (both campuses), Lincoln Memorial COM, Oklahoma State U COM, Pikeville COM, Rocky Vista U COM, West Virginia SOM, and Edward Via Virginia COM.

**For more information on Osteopathic Medicine, visit [www.aacom.org](http://www.aacom.org) and see your HPAO advisor for further information on the application process, application assistance, and a list of upcoming workshops and events.**