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# Osteopathic Medical School

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## What is a D.O.?

A D.O. is a Doctor of Osteopathic Medicine. D.O.'s have the same medical responsibilities and rights as an M.D. D.O.'s are trained to practice the same medical and surgical techniques as an M.D. but have additional training in osteopathic manipulative medicine. D.O.'s attend osteopathic medical schools, separate from M.D. schools.

[Directory of U.S. Colleges of Osteopathic Medicine](#)

## What is a D.O.? Video by A.T. Still University



Students learning manipulative techniques during class at the University of New England College of Osteopathic Medicine. Taken from <http://www.une.edu/com/admissions/programs.cfm>.

## What is Osteopathic Medicine?

Osteopathic medicine is a blend of modern traditional medicine (surgical procedures, prescription medication) and hands-on manipulative techniques (osteopathic manipulative medicine). Osteopathic medicine focuses on the relationship between structure and function of the human body while recognizing the body's capacity to heal itself. D.O.'s believe that parts of the human body are interrelated and depend on one another to maintain health. D.O.'s view the body as a whole interconnected being that consists of the body, mind, and spirit. D.O.'s treat the body as a whole entity instead of focusing on individual symptoms and organ systems.<sup>[8]</sup>

### *Did you know?*

- In the United States, there are currently 26 osteopathic medical schools in 34 locations<sup>[1]</sup>
- In 2011, approximately 1 in 5 medical students were attending an osteopathic medical school<sup>[2]</sup>
- Former President George Bush's personal physician was a D.O.<sup>[3]</sup>
- Osteopathic medical school enrollment is growing rapidly every year. It is estimated that at least 100,000 D.O.'s will be in active medical practice by the year 2020.<sup>[4]</sup>
- D.O.'s can obtain joint degrees including D.O./M.P.H., D.O./M.S., and D.O./Ph.D.<sup>[5]</sup>
- There are currently three new osteopathic medical schools in the planning stages.<sup>[6]</sup>
- Former Surgeon General of the United States Army, Dr. Ronald Blanck, was a D.O.<sup>[3]</sup>
- D.O.'s represent 6% of the total U.S. physician population.<sup>[4]</sup>
- Osteopathic medicine was developed by an M.D.<sup>[7]</sup>

## History of Osteopathic Medicine

Dr. Andrew Taylor Still developed the osteopathic philosophy in 1874. Still, now considered the father of osteopathic medicine, was also the founder of Baker University in Kansas, a surgeon, and a Kansas state legislator. He founded the first osteopathic medical school, A.T. Still University, in Kirksville, Missouri in 1892.

Preceding the death of his three children from spinal meningitis, Still was convinced that the current medical practices were sometimes harmful and often ineffective. He was inspired to further study the human body and create a new approach to treating human disease.

Still discovered that the musculoskeletal system played an essential role in maintaining health. He thought that by manually manipulating the musculoskeletal system to eliminate structural problems, the body's ability to function could be maximized.<sup>[7]</sup> Today, this is known as osteopathic manipulative medicine. He founded the osteopathic philosophy on four main principles.<sup>[9]</sup>

1. A person is comprised of body, mind, and spirit
2. The body is capable of self-regulation, self-healing, and health maintenance
3. The structure and function of the body are reciprocally related
4. Rational medical treatment is based upon an understanding and integration of these three principles along with the use of evidence-based medicine

### Hippocratic Oath<sup>[10]</sup>

*"I do hereby affirm my loyalty to the profession I am about to enter. I will be mindful always of my great responsibility to preserve the health and the life of my patients, to retain their confidence and respect both as a physician and a friend who will guard their secrets with scrupulous honor and fidelity, to perform faithfully my professional duties, to employ only those recognized methods of treatment consistent with good judgment and with my skill and ability, keeping in mind always nature's laws and the body's inherent capacity for recovery.*

*I will be ever vigilant in aiding in the general welfare of the community, sustaining its laws and institutions, not engaging in those practices which will in any way bring shame or discredit upon myself or my profession. I will give no drugs for deadly purposes to any person, though it be asked of me.*

*I will endeavor to work in accord with my colleagues in a spirit of progressive cooperation and never by word or by act cast imputations upon them or their rightful practices.*

*I will look with respect and esteem upon all those who have taught me my art. To my college I will be loyal and strive always for its best interests and for the interests of the students who will come after me. I will be ever alert to further the application of basic biologic truths to the healing arts and to develop the principles of osteopathy which were first enunciated by Andrew Taylor Still."*

Taken from <http://www.osteopathic.org/inside-aoa/about/leadership/Pages/osteopathic-oath.aspx>

## Common Myths and Misconceptions

*Myth:* D.O.'s are not as qualified to practice medicine as M.D.'s.

*Truth:* D.O. school is not “easier” than M.D. school and a D.O. is held to the same basic technical and academic standards as an M.D. Both D.O.'s and M.D.'s have a four-year undergraduate degree followed by four years of medical education. Both must take the MCAT and undergo the rigorous application process to medical school. During medical school, D.O.'s and M.D.'s study the same essential medical coursework but D.O.'s have additional training in osteopathic manipulative medicine. Both complete their medical training during residency programs. D.O.'s and M.D.'s have comparable medical accreditation; both must pass medical board exams to receive their medical degree and additional exams to become board-certified for their chosen medical specialty.

*Myth:* All D.O.'s have a holistic philosophy.

*Truth:* While D.O.'s are trained to have a holistic, whole-body approach, many D.O.'s practice the same traditional, mainstream medicine that M.D.'s are trained to practice. Not every D.O. practices osteopathic manipulative techniques either and some are more strongly focused on a holistic approach than others. There are also a growing number of M.D.'s that are practicing a more holistic style of medicine.

*Myth:* A D.O. is a chiropractor.

*Truth:* D.O.'s and chiropractors have different training and limitations on their scope of medical practice. A D.O. is a fully licensed and trained physician that has graduated from an accredited medical school. While a chiropractor also obtains a professional degree (Doctor of Chiropractic), they do not attend an accredited medical school. Chiropractors are only licensed to practice musculoskeletal manipulative techniques, and not other medical or surgical practices. D.O.'s are licensed and trained to practice musculoskeletal manipulative techniques in conjunction with other medical and surgical practices.<sup>[11]</sup>

*Myth:* M.D.'s have more career opportunities than D.O.'s.

*Truth:* D.O.'s enter a wide range of medical fields from more holistic integrative medicine to very traditional surgical specialties. While D.O.'s can choose to practice any specialty, 60% of practicing osteopathic physicians practice in the primary care specialties.<sup>[12]</sup> D.O.'s also have full practice rights in 45 countries ([map of countries with international practice rights](#)) and are eligible for Doctors Without Borders recruitment.<sup>[13],[14]</sup> Unlike some international M.D. programs, D.O.'s that have completed osteopathic medical school outside the U.S. are not eligible for U.S. licensure.<sup>[15]</sup> The medical branches of the Army, Navy, and Air Force recruit D.O.'s and D.O. medical students are eligible for the Health Professions Scholarship Program in the [Army](#), [Navy](#), and [Air Force](#).

## Applying to an Osteopathic Medical School – Basic Statistics

For applicants of the 2009-2010 application cycle and matriculants of the 2010 entering class for all D.O. and M.D. medical schools.

### Total number of applicants and matriculants, by gender.

	D.O. <sup>[16]</sup>		M.D. <sup>[17]</sup>	
	Applicants	Matriculants	Applicants	Matriculants
<b>Male</b>	6,869	2,718	22,533	10,193
<b>Female</b>	6,277	2,313	20,207	9,037
<b>Total</b>	<i>13,147</i>	<i>5,031</i>	<i>42,741</i>	<i>19,230</i>

### Mean GPAs

	D.O. <sup>[16]</sup>		M.D. <sup>[17]</sup>	
	Applicants	Matriculants	Applicants	Matriculants
<b>Science</b>	3.32	3.41	3.43	3.61
<b>Non-Science</b>	3.54	3.58	3.65	3.75
<b>Overall</b>	<i>3.43</i>	<i>3.49</i>	<i>3.53</i>	<i>3.67</i>

### Mean MCAT scores

	D.O. <sup>[16]</sup>		M.D. <sup>[17]</sup>	
	Applicants	Matriculants	Applicants	Matriculants
<b>Verbal</b>	8.46	8.69	9.10	9.90
<b>Biological Sciences</b>	8.93	9.27	9.80	10.8
<b>Physical Sciences</b>	8.38	8.51	9.40	10.4
<b>Overall</b>	<i>25.63</i>	<i>26.48</i>	<i>28.30</i>	<i>31.10</i>

## How is the Application Process Different from M.D. Schools?

Osteopathic schools follow the same general application process and timeline as M.D. schools. First, there is a primary application submitted through an online service, and then schools will send out secondary applications based on an applicant's primary application. Instead of using [AMCAS](#), D.O. schools use [AACOMAS](#) to submit primary applications. Similar to AMCAS, the AACOMAS is a centralized application service for all D.O. schools. To apply to both M.D. and D.O. schools, an applicant must complete primary applications through both AMCAS and AACOMAS.

### AACOMAS Fast Facts:<sup>[18]</sup>

*Cost (2012):* \$175 plus \$32 for every additional school

*Deadlines:* The application opens May 5 and can be submitted beginning June 1. The application cycle ends April 1 but deadlines vary by school. A complete list of primary and secondary application deadlines can be found on the [AACOMAS](#) website.

*Content:* Undergraduate/graduate coursework transcripts, MCAT scores, personal information, personal statement, extracurricular/volunteer/community service, work experience, additional information (academic honors, legal history, military status, awards, scholarships, etc.).

**AAMC:** Association of American Medical Colleges

- ◆ *Runs the AMCAS, administers the MCAT, associated with M.D. schools*

**AMCAS:** American Medical College Application Services

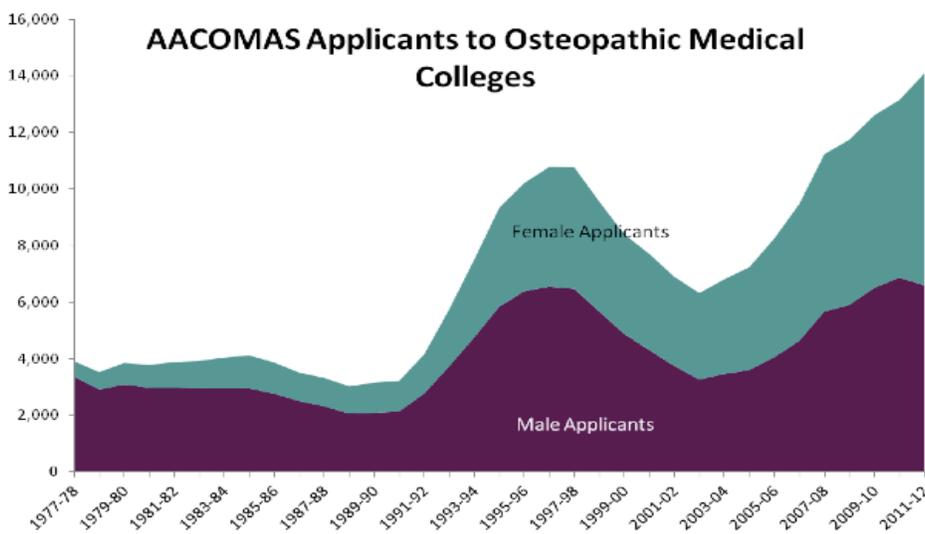
- ◆ *Application service for M.D. schools*

**AACOM:** American Association of Colleges of Osteopathic Medicine

- ◆ *Runs the AACOMAS, associated with D.O. schools*

**AACOMAS:** American Association of Colleges of Osteopathic Medicine Application Service

- ◆ *Application service for D.O. schools*



Taken from <http://www.aacom.org/data/Documents/Trends-apps-enroll-grads.pdf>

### International Students

Currently, only 14 of the 26 D.O. schools accept applications from international students. A list of these schools and their policies can be found in AACOM's [Osteopathic Medical College Information Book](#).<sup>[19]</sup>

## What Are the Prerequisite Requirements for Osteopathic Medical School?

Just as with M.D. schools, specific coursework, GPA, and MCAT requirements vary by school. Similar to the AAMC’s annual Medical School Admissions Requirements guidebook (MSAR), AACOM publishes the Osteopathic Medical College Information Book (CIB) annually. Similar to the [MSAR](#), the [CIB](#) contains admissions criteria, tuition, application deadlines, and other basic information specific to each osteopathic medical school. The CIB can be purchased online or downloaded for free on the AACOM website.

According to AACOM, applicants should:<sup>[20]</sup>

- Be well-rounded
- Have good communication and interpersonal skills
- Have a record of community service
- Have a record of leadership
- Have some clinical experiences
- Have participated in a variety of extracurricular activities
- Come from diverse backgrounds
- Are motivated to pursue a career in osteopathic medicine
- Have knowledge of osteopathic medicine
- Have shadowed an osteopathic physician
- Have a bachelor’s degree
- Have taken the MCAT
- ◆ Demonstrate a strong academic record

## Want to Shadow a D.O.?

[Minnesota Osteopathic Medical Society](#) – has a search engine of D.O.’s in Minnesota who are willing to have students shadow them.

[St. Olaf Alumni Directory](#) – search “DO” under “Degree Earned”

[AOA Physician Database](#) – search for a D.O. by specialty and location

## How Much Does Osteopathic Medical School Cost?

Mean tuition and fees for first year students for the 2009-2010 academic year by state resident and non-resident status. Note that this cost does not include living expenses, educational expenses, or transportation.

	D.O. Schools <sup>[21]</sup>				M.D. Schools <sup>[22]</sup>			
	Resident		Non-Resident		Resident		Non-Resident	
	Public	Private	Public	Private	Public	Private	Public	Private
<b>Mean</b>	23,992	37,975	45,228	38,633	23,000	41,000	44,000	42,000

## What is the Coursework?

The specific required courses and electives vary by school and are often found on the school's webpage. D.O. school follows the same general outline as M.D. school. The first two years of medical school are lecture and laboratory based while the last two years consist of clinical clerkships.<sup>[23]</sup>

### *Year 1*

Anatomy  
Physiology  
Clinical Skills  
Radiology  
Osteopathic Principles and Practices  
Microbiology and Immunology  
Neuroscience  
Histology  
Biochemistry  
Pathology  
Doctor/Patient Communication

### *Year 2*

Gerontology  
Cardiology  
Gastrointestinal System  
Hematopoietic System  
Osteopathic Principles and Practices  
Endocrinology  
Psychiatry  
Respiratory  
Ethics and Jurisprudence  
Family Medicine  
Genitourinary System  
Reproductive System  
Pediatrics/Growth and Development  
Pharmacology

### *Core Clinical Clerkships (Years 3 and 4)*

Emergency Medicine  
Family Medicine  
Internal Medicine  
Obstetrics and Gynecology  
Osteopathic Principles and Practices  
Pediatrics  
Psychiatry and Behavioral Science  
Surgery

### *Other Clinical Clerkships (Years 3 and 4)*

Anesthesiology  
Cardiology  
Gastroenterology  
Laboratory Medicine  
Nephrology  
Neurology  
Oncology and Hematology  
Orthopedics  
Otorhinolaryngology  
Pulmonary Medicine  
Radiology

Taken from <http://www.aacom.org/InfoFor/applicants/becoming/pages/CurriculumOverview.aspx>

## Do Osteopathic Medical Schools Offer Dual Degrees?

Yes! Currently, 19 of the 26 osteopathic medical schools have at least one dual degree program.<sup>[24]</sup> Keep in mind that a dual degree program follows a different academic schedule from a D.O.-only program. More information regarding a specific program can be found on the school's website. There are 15 different D.O. dual degree programs currently offered, a complete list can be found in the [CIB](#).

### D.O./Masters in Business Administration:

New York Institute of Technology	Lincoln Memorial University
Nova Southeastern University	Oklahoma State University
Edward Via College of Osteopathic Medicine	Ohio University
Philadelphia College of Osteopathic Medicine	
University of Medicine & Dentistry of New Jersey	
Kansas City University of Medicine & Biosciences	

### D.O./PhD:

Midwestern University	Ohio University
New York Institute of Technology	Michigan State University
Oklahoma State University	University of New England
University of North Texas	
Philadelphia College of Osteopathic Medicine	
University of Medicine & Dentistry of New Jersey	

### D.O./Masters of Science:

Philadelphia College of Osteopathic Medicine	Des Moines University
Touro University	Midwestern University
Edward Via College of Osteopathic Medicine	A.T. Still University
New York Institute of Technology	Ohio University
Lake Erie College of Osteopathic Medicine	Oklahoma State University
University of Medicine & Dentistry of New Jersey	

### D.O./Masters in Public Health:

Philadelphia College of Osteopathic Medicine	A.T. Still University
Edward Via College of Osteopathic Medicine	Des Moines University
Pacific Northwest University of Health Sciences	Michigan State University
University of Medicine & Dentistry of New Jersey	Touro University
University of New England	Ohio University
Nova Southeastern University	University of North Texas

## Licensure Exams

Both D.O. and M.D. medical students take three board licensure exams to obtain their medical license: one after the second year of medical school, one after the end of the fourth year (knowledge and skills tests), and one prior to the end of the internship year of residency. The scores from the first board exam are part of the application for residency programs. D.O. students take the [COMLEX](#) and may choose to additionally take the [USMLE](#), while M.D. students are only eligible to take the USMLE.

**COMLEX:** Comprehensive Osteopathic Medical Licensure Examination

- Taken only by D.O. students

**USMLE:** United States Medical Licensure Examination

- Taken by M.D. and some D.O. students

D.O. medical students choose to take the USMLE in addition to the COMLEX for a wide variety of reasons. Many take the USMLE due to specific residency and fellowship plans. However, most allopathic residency programs accept COMLEX scores.<sup>[25]</sup>

The main difference between the COMLEX and USMLE is the content. Osteopathic manipulative medicine and osteopathic principles are tested in the COMLEX only.

## Osteopathic vs. Allopathic Residency Programs

*How are they different?*

Osteopathic residency programs consist of students that have graduated from a D.O. medical school and typically integrate osteopathic principles into their clinical practice. Allopathic residency programs consist of students from both M.D. and D.O. medical schools. Allopathic and osteopathic residencies have separate matches and students may only participate in one match at a time.<sup>[26]</sup>

*Why would a D.O. student attend an allopathic residency program?*

D.O. medical students have many different reasons for choosing to apply to or M.D. residency programs. Some students prefer the nature of an osteopathic or allopathic program. In addition to this, medical students often apply to residency programs based on their reputation, location, and overall fit with their individual interests and career goals.<sup>[27]</sup>

*After residency, both osteopathic and allopathic physicians take certification exams specific to their specialty, which are required by most employers. The boards of each specialty administer these exams.*

[Complete list of osteopathic internship, residency, and fellowship opportunities](#)

## Helpful Resources

- 1.) [American Association of Colleges of Osteopathic Medicine](#)
- 2.) [American Osteopathic Association](#)
- 3.) [Student Osteopathic Medicine Association](#)
- 4.) [Association of American Medical Colleges](#)
- 5.) [MCAT](#)
- 6.) Professor Ted Johnson's ["Preparation for a Career in Medicine"](#)
- 7.) [St. Olaf College Health Professions Committee](#)
- 8.) [St. Olaf College Center for Experiential Learning](#)
- 9.) [Video by AACOM: "Explore Osteopathic Medicine"](#)
- 10.) [Video by American Osteopathic Association: "AOA Health Dose: Osteopathic Manipulative Treatment"](#)

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