Should I become a Doctor?
Should I become a doctor?

- Do you like challenges?
- Are you interested in science and how the body works?
- Do you care deeply about other people, their problems, and their pain?
- Are you a good listener?
- Do you enjoy learning?
- Are you intrigued by the ways medicine can be used to improve life?
What is a doctor’s job like?

- Physicians diagnose and care for people of all ages who are ill or have been injured.
- They take medical histories,
- perform physical examinations,
- conduct diagnostic tests,
- recommend and provide treatment,
- and advise patients on their overall health and well-being.
What type of doctor?

- **Primary care physicians** are the doctors patients usually visit most frequently. They treat a wide range of illnesses and regularly provide preventive care, and they also enjoy long-term relationships with their patients. Pediatricians, family practitioners and general internists are primary care physicians.

- **Surgeons** perform operations to treat diseases and repair injuries.

- **Specialists** have expertise related to specific diseases as well as body parts, organs, and systems. Cardiologists, Oncologists, Neurologists, and ophthalmologists are examples of specialists. The AAMC’s Careers in Medicine website contains information and links about various specialties in medicine.
How much education does it take to become a doctor?

- Becoming a doctor requires a serious educational commitment.
- It typically takes from 11 to 16 years to complete your education,
  - four years of college (undergraduate school),
  - four years of medical school
  - three to eight years of training in a specific specialty area (residency training),
What is the lifestyle and salary like?

- Work hours can be long and unpredictable.
- Many doctors work more than 60 hours a week.
- They may also have to respond to emergencies and be on call for their patients.
- Work hours vary depending on the type, size and location of practice.
- Salaries vary depending on where physicians live and the type of medical specialty they practice.
Doctors' median starting salary (2013)

- Surgeon: $300,000
- Anesthesiologist: $300,000
- Radiologist: $280,000
- Emergency room doctor: $260,000
- Ob-gyn: $225,000
- Hospitalist: $203,000
- Psychiatrist: $200,000
- Internal medicine doctor: $190,000
- Family medicine doctor: $180,000
- Pediatrician: $165,000

Source: MGMA
MORE INFORMATION

- Careers in Medicine specialty information: www.aamc.org/cim/specialty/list
- Information about financing a medical education and repaying education debt: www.aamc.org/first
How to prepare for medical school applications in college

- Take all college prep courses
- Take as much math as possible
  - You should have finished trigonometry and geometry at a minimum (be ready for pre-calculus)
- Take as many science classes as possible
- Take as many AP courses and college in high school classes as possible
  - Take the graded courses seriously, as they will affect your GPA in college
- Have a minimum of 23 on the ACT
Investigate:

- Medical school application process (www.aamc.org/students/applying/).

- Medical College Admission Test (MCAT®) (www.aamc.org/mcat).

- Fee Assistance Program (FAP) (www.aamc.org/fap).
How to prepare for medical school in college

- Plan your schedule to assure that you take all required courses
- Participate in research activities with presentation opportunities
- Apply for summer undergraduate research experiences
- Shadow doctors
- Volunteer in hospitals
- Visit medical schools you are interested in both on the web and in person
- Take the MCAT exam
When to take the MCAT exam

- Usually in the third year of college and the summer following

- This assumes that you already have taken biochemistry, physics, etc.

- If your early MCAT scores are not high, consider taking a year after college to take supplemental courses and MCAT prep and try again
MCAT2015 has four test sections:

1) Biological and Biochemical Foundations of Living Systems,

2) Chemical and Physical Foundations of Biological Systems,

3) Psychological, Social and Biological Foundations of Behavior, and

4) Critical Analysis and Reasoning Skills
The *Biological and Biochemical Foundations of Living Systems* and the *Chemical and Physical Foundations of Biological Systems* sections are designed to:

- test introductory-level biology, organic and inorganic chemistry, and physics concepts;
- test biochemistry concepts at the level taught in many colleges and universities in first-semester biochemistry courses;
- test cellular/molecular biology topics at the level taught in many colleges and universities in introductory biology sequences;
- target basic research methods and statistics concepts described by many baccalaureate faculty as important to success in introductory science courses; and
- require you to demonstrate your scientific inquiry and reasoning, research methods, and statistics skills to solve problems that demonstrate your readiness for medical school.
The *Psychological, Social and Biological Foundations of Behavior* section is designed to:

- test your knowledge and use of the concepts in psychology, sociology, and biology that provide a solid foundation for learning in medical school about the behavioral and socio-cultural determinants of health;
- target concepts taught at many colleges and universities in one-semester introductory psychology and one-semester introductory sociology courses;
- target biology concepts that relate to mental processes and behavior that are taught at many colleges and universities in introductory biology; and
- target basic research methods and statistics concepts described by many baccalaureate faculty as important to success in introductory science courses; and
- require you to demonstrate your scientific inquiry and reasoning, research methods, and statistics skills using knowledge of social and behavioral sciences concepts.
The *Critical Analysis and Reasoning Skills* section is designed to:

- test your analysis and reasoning skills by asking you to critically analyze information provided in reading passages;
- test your comprehension, evaluation, application, and information incorporation skills;
- include content from ethics, philosophy, cross-cultural studies, and population health and a wide range of social sciences and humanities disciplines; and
- provide all the information needed to answer questions in the passages.
# Required courses for medical school applications

<table>
<thead>
<tr>
<th><strong>Case Western</strong></th>
<th><strong>University of Cincinnati</strong></th>
<th><strong>Ohio State</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>General Bio- one year</td>
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<td>General Bio- one year</td>
</tr>
<tr>
<td>General Chem- one year</td>
<td>General Chem- one year</td>
<td>General Chem- one year (also mentions quantitative chemistry)</td>
</tr>
<tr>
<td>General Physics- one year</td>
<td>General Physics- one year</td>
<td>General Physics- one year (with lab)</td>
</tr>
<tr>
<td>Writing</td>
<td>General Physics- one year</td>
<td>Biochemistry (strongly recommended)</td>
</tr>
<tr>
<td>BioChemistry (depending upon program)</td>
<td>Calculus- one year</td>
<td>Anatomy (strongly recommended)</td>
</tr>
<tr>
<td>Calculus- one year</td>
<td>MCAT</td>
<td>Recommended: writing, social science, humanities, diversity/ethics, math, statistics, physiology, human behavior, computer literacy</td>
</tr>
<tr>
<td>Exploration of Medicine/Shadowing</td>
<td>Letters of Recommendation</td>
<td>Letters of Recommendation</td>
</tr>
<tr>
<td>MCAT</td>
<td></td>
<td>MCAT (average 33)</td>
</tr>
<tr>
<td>Letters of Recommendation</td>
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</tbody>
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<thead>
<tr>
<th><strong>University of Toledo</strong></th>
<th><strong>Wright State University</strong></th>
<th><strong>Ohio University (DO)</strong></th>
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<tbody>
<tr>
<td>MCAT (average of 30)</td>
<td>MCAT (average 28-29)</td>
<td>English-one year</td>
</tr>
<tr>
<td>Letters of Recommendation</td>
<td>Letters of Recommendation</td>
<td>Psychology and Sociology</td>
</tr>
<tr>
<td>General Bio- one year</td>
<td>General Bio- one year</td>
<td>Biology-one year</td>
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<tr>
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<td>General Physics- one year</td>
<td>General Physics- one year (with lab)</td>
</tr>
<tr>
<td>Writing- one year</td>
<td>Writing- one year</td>
<td>Biochemistry, Histology and Anatomy recommended</td>
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<tr>
<td>Calculus- one year</td>
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DRAFT Pre-Medical Courses for the Bachelor of Science Degree in Biological Sciences

**Biology**

**Required**
- BIOL 2601/L – General Biology: Molecules and Cells (Prerequisite or taken concurrently: MATH 1513 and CHEM 1515)
- BIOL 2602/L – General Biology: Organisms and Ecology
- BIOL 3721 – Genetics
- BIOL 4861 – Senior Biology Capstone Experience

**Core courses** (2 required; General Biology 1 & 2 are prerequisites)
- BIOL 3730 – Human Physiology with lab
- BIOL 3711 – Cell Biology: Fine Structure

**Upper level courses** – at least one 4800-5800 course with a laboratory component is required

**Recommended pre-medical courses**
- BIOL 3702/L – Microbiology
- BIOL 3703 – Clinical Immunology
- BIOL 3705/L – Introduction to Human Gross Anatomy (required by some medical programs)
- BIOL 4813/L – Vertebrate Histology
- BIOL 4822 – Principles of Pharmacology
- BIOL 5832 – Principles of Neurobiology

**Additional (optional) upper level courses**
- BIOL 4890/L – Molecular Genetics
- BIOL 4829/L – Functional Neuroanatomy
- BIOL 5834/L – Advanced Systems Physiology
- BIOL 5840 – Advance Microbiology

A minimum total of 37 hours in Biology is required

**Chemistry** (must have 18 hr for minor)

**Required**
- CHEM 1515 and 1516 – General Chemistry 1 and 2 (recitations recommended)

**Recommended**
- CHEM 3719 and 3720 – Organic Chemistry 1 and 2 (recitations recommended)
- CHEM 3785 – Biochemistry 1 (required for MCAT exam and by some medical programs)

**Physics**

**Required**
- PHYS 2610/2610L and 2611/2611L – General Physics 1 and 2 (with labs)

**Mathematics**

**Required**
- MATH 1571 and 1572 – Calculus I and Calculus II
- STAT 3717 – Statistical Methods or STAT 3743 Probability and Statistics

**General Education Degree Requirements**

**English**
- ENGL 1550 and 1551 – Writing 1 and 2
- COMST 1545 – Communication Theory and Practice (with lab)

**Speech**
- Two courses from Arts and Humanities
- Two courses from Natural Science (satisfied by Biol 2601/L and Biol 2602)
- Two courses from Social Science (satisfied by PSYCH 1560 and SOC 1500)
- Two courses from Social and Personal Awareness (recommended Soc 3745 Medical Sociology)
- One elective from any of the four knowledge domains listed above (satisfied by CHEM 1515)
- Required for MCAT exam: PSYC 1560 (SS #1) – General Psychology, SOC 1500 (SS #2) Intro to Sociology

Suggested courses to prepare for MCAT and medical school: PHIL 2630 - Critical Thinking and PHIL 3725 - Medical Ethics

A total of 124 semester hours (sh) is required for the B.S. degree, of which 48 sh must be at the 3700 or above level.

* Placement or proficiency exam
What are they looking for in applicants

- Competitive applicants typically have at least a 3.6 science GPA and 8s and above on each MCAT subsection.
- Work and research experience
- Leadership qualities
- Significant community volunteer experience
- Shadowing and hospital volunteer experience
- Good reference letters from medical committee or faculty at university, work supervisors, supervisor during research or volunteer experience
When to apply for medical school

- Usually early in your fourth year of college for traditional medical programs and BS/MD combined programs (usually 2 yr undergrad plus 4 year medical school)

- Investigate alternative models
  - **Advanced Standing M.D. Program**
    - Candidates currently attending an osteopathic school or a foreign medical school may be considered for M2 or M3 after completing at least two years at their current medical school
  - **Post-Bacc/M.D.**
    - Designed for those who hold a bachelor’s degree from an accredited four-year college or university. Offers Post Bacc/M.D. students the necessary pre-medical courses and a reserved seat at the College of Medicine.
  - **Bacc/M.D.**
    - Non-accelerated combined degree program allows undergraduates of most majors to apply for admission to the Bacc/M.D. program which includes a reserved seat at the College of Medicine.
What is medical school like

Example of 4 year Medical Curriculum
What happens after medical school?

- Training for family physicians is a process that begins with medical school and continues through residency.
- During their time in medical school, students take two “step” exams, called the United States Medical Licensing Examination (USMLE)(www.usmle.org),
- Passing both exams and the clerkships grants students the “Medical Doctor” (MD) degree, which entitles them to start full clinical training in a residency program.
Residency

- The first year of residency, called the internship year, is when the final “step” of the USMLE (Step 3 exam) is taken.
- Most residencies require at least 3 years of training in your specialty.
- After three “program years” of training are completed and all requirements are met, residents are eligible to take the certification exam and apply for medical licensing in their state.
How to pay for medical school

- **How much does medical school cost?**
  approximately $31,783 for state residents and $55,294 for non-residents. These figures do not include health insurance, housing, or living expenses.

- In 2013, the median debt for graduating students was $175,000

- Grants and scholarships are available from the federal government and from the individual medical schools.
How to pay for medical school

- Federal Service programs include the Armed Forces Health Professions Scholarship and the National Health Service Corps.
- Scholarships for underrepresented minority students also are available through the National Medical Fellowships.