



## Pre-Health Advising FAQs

### Course/Prereq Questions

#### **Do I need to take biochemistry?**

The majority of dental and veterinary programs requires biochemistry. For medical schools, only a third require biochemistry (and most of those do not require lab), although many more recommend biochemistry. Even so, biochemistry constitutes 25% of the MCAT and medical schools generally consider biochemistry to be one of the most important areas of undergraduate study for future physicians. We highly recommend taking biochemistry if you are pre-med.

#### **Do I need to take the second semester of organic chemistry?**

Generally, health professions programs require 2-2.5 years of chemistry (to include general, organic, and biochemistry). Dental programs largely require both semesters of organic. Some medical schools that require two semesters of organic will accept biochemistry in lieu of the second semester; others require both semesters (e.g. Columbia, Baylor, UNC, Emory, Mayo, UT Southwestern, and Indiana). Whether you take the second semester of organic chemistry is dependent on your goals, interests, and the program/schools you are considering. We recommend taking both semesters of organic chemistry, especially since our biochemistry does not offer a lab component.

#### **Do I need to take psychology and sociology?**

A number of programs require behavioral or social science courses, including dental, veterinary, and pharmacy. Less than 10% of medical schools require behavioral science courses. However, the MCAT now has the Psychological, Sociological and Biological Foundations of Behavior subtest with 70% introductory psychology and 30% sociology content. Whether or not to take these courses depends on your interests and intended program. Highly recommended to take intro to psychology for pre-med.

#### **What math courses do I need to take?**

Across programs, the most common math requirements are college level math, calculus, and/or statistics. For medical schools, less than half require college level math, less than 10% require calculus (of those schools that require calculus, most, but not all, will accept AP/IB), and less than 10% require statistics. Due to the importance of quantitative skills for health professionals, and the increasing importance of statistics, we recommend taking one college math calculus course and one statistics course.

#### **How do I go about checking prerequisites for specific schools if I am not sure where I want to apply?**

It's always recommended to stay eligible for your public schools in your home state. Public state schools tend to have some preference for in-state applicants. If you're interested in medicine and you're not sure what your state schools are, you can search for them in the [AAMC Medical School Admissions Requirements online database \(link is external\)](#). Beyond those schools, you might check some that are in locations you're interested in using that same MSAR for MD programs and the [online map for osteopathic medical schools\(link is external\)](#).



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## **Is it okay to take premed prerequisites online?**

Your medical school requirements should be taken the old-fashioned way--in a classroom with preceptors and professors present. Most medical schools would not accept prerequisites such as Physics taken purely online (with exceptions made during the pandemic when classes were only offered online). Some health professions are more lenient about courses taken online. Check with individual programs of interest to gauge the acceptability.

## **If I take statistics, does it need to be within the math department?**

Generally, the course can be taken within a variety of academic departments including math, biology, economics, and psychology. However, schools may have specific requirements; therefore, it is best to check individual program/school requirements.

## **If English is required do I need to take the course(s) within the English department?**

Schools are most interested in students learning how to write well. Many schools also appreciate the close reading that is emphasized in English courses. It is recommended that you take a course within the English or Literature department, but steer clear of creative writing courses.

## **Will schools accept AP credit to fulfill a course requirement?**

Some schools accept AP credit towards a requirement. However, there is no standard with respect to AP credit; therefore, it is best to check individual program/school policies.

## **Major/Experience Questions**

### **Do I need to major in a science?**

There is no preferred major for health professions programs, and it does not affect your chance of admission. You should choose your major based on whatever interests you most.

### **Do I need shadowing experiences?**

Some schools see it as invaluable, while others are indifferent. However, all agree that applicants need to venture beyond shadowing to experiences that involve direct patient exposure. Shadowing can be a useful introduction to healthcare, but can be difficult to find given HIPPA rules. It is best to try private offices rather than large hospitals.

### **Is research mandatory?**

Research is not a requirement for a competitive application, unless your program is research intensive (e.g. MD-PhD, DO-PhD, DVM-PhD) or your career goals involve research. Gaining research experience will also be of interest to schools that have a research mission or curriculum component. Many MD programs will appreciate research and may find your application to be more competitive.

### **I've noticed a lot of medical schools seem to really value community service, both medical and non-medical. I don't have much free time but I want to show that I want to help others—what are the best ways to do this in an efficient way?**

Finding the right match for yourself goes a long way to making it feel like serving others is worth the time. If you're working toward a cause you care about—reducing poverty, educating others, addressing disparities, protecting others' rights, caring for those with health needs—in a way



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that resonates with you, it won't feel like something you "have to" do for medical school applications, but rather something that brings satisfaction in doing good.

## **What counts as an activity when I apply? Since I got a grade for my thesis, can it still be an activity?**

The Association of American Medical Colleges (AAMC) provides [guidance on what to include\(link is external\)](#). The categories you use to classify your activities is also useful in considering what "counts":

- Artistic Endeavors
- Community Service/Volunteer - Medical/Clinical
- Community Service/Volunteer - Not Medical/Clinical
- Conferences Attended
- Extracurricular Activities
- Hobbies
- Honors/Awards/Recognitions
- Intercollegiate Athletics
- Leadership - Not Listed Elsewhere
- Military Service
- Other
- Paid Employment - Medical/Clinical
- Paid Employment - Not Medical/Clinical
- Physician Shadowing/Clinical Observation
- Presentations/Posters
- Publications
- Research/Lab
- Teaching/Tutoring/Teaching Assistant

So, your thesis, which is a research experience, should certainly be included.

## **What counts as clinical experience?**

It helps to think about what professional schools want to know about you based on your clinical experience. As they read your application, they will ask questions like:

- Does this applicant know what they're getting into before committing to an expensive, time-intensive career path? Is their perspective sufficiently concrete and gained from personal experience?
- Has this applicant started to develop a good "bedside manner" and ability to care for people from diverse backgrounds who have medical needs?
- What is this applicant's career vision? Where do they see themselves long-term?
- Is this applicant ready to navigate in hospital and clinical environments and work successfully as a team member within them?

No single experience is likely to cover all four of these aspects of clinical experience, so most students do some of each. Here are a few common ways that students gain clinical experience.

- [Shadowing \(link is external\)](#): short-term, passive opportunity to get a glimpse into a certain specialty by following a doctor in their day to day work. You may have a chance to see how a physician interacts with their patients, discuss rewards and challenges of the profession, and gain insight on what you might want in your career.
- [Hospital / Clinic / Hospice volunteering \(link is external\)](#): longer-term, active opportunity in which you provide a service to the clinical setting. This can give you a sense of the culture within a unit of the hospital or other care facility over time, allow you



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to interact with the team within the unit (nurses, techs, physicians, etc.), and, in some units, you may have the opportunity to interact directly with patients and their families. Volunteering with patient populations: Opportunities outside of the hospital/clinic setting interacting with individuals with medical needs, such as working at a summer camp with kids with health issues; spending time with elderly individuals who are navigating dementia, Alzheimer's, and other conditions; assisting with health screenings for at-risk populations.

- [Working / volunteering as an Emergency Medical Technician \(link is external\)](#): after a course and certification test, Emergency Medical Technicians respond to emergency situations. Great opportunity to gain hands-on skills, but does not provide familiarity with the hospital setting or work of physicians.
- [Working as a Certified Nurse Assistant \(CNA\) \(link is external\)](#): after a course and certification test, CNAs work alongside nurses to provide direct care to patients. Training is available through community colleges and through care facilities like nursing homes. Check your state's Department of Health for a list of training facilities.
- [Scribing \(link is external\)](#): paid position in which you follow doctors as they visit with patients and take notes for them, so that they can focus on the patient.
- Clinical research: students may be able to assist in enrolling patients or administering tests, which can help develop interpersonal skills and provide better understanding of the patient experience. Research also gives students access to mentors in the field and a sense of what it's like to work within an academic medical/research environment.
- Volunteering through Hotline/Counseling opportunities: many students value the opportunity to develop active listening and counseling skills in these helping roles.

Don't limit yourself to one type of experience or one setting - the broader and more diverse the exposure to health and health care, the better.

## How many hours should I spend shadowing physicians?

It depends on what you'll be doing as you shadow and what you want to get out of it. Generally, if you're just observing and asking a few questions, about 50-100 hours will give you a good sense of what's going on. Spread your time out across different shadowing opportunities with physicians or other health professionals in diverse specialties, types of practice (e.g., private practice vs. hospital, in-patient vs. outpatient) to maximize the learning experience. The more that you can shadow physicians with whom you have something in common, the more it may help you think about yourself in the role later. If you're a humanities concentrator, look for physicians with a similar academic background; if you're interested in MD/PhD, try to shadow physician-scientists or MDs who run their own labs. A couple of the goals behind shadowing are to see enough that you understand the rewards and challenges of day-to-day doctoring, and that you gain insight from folks who are doing the kinds of things you want to be doing.

## What counts as research?

Any research experience will be of interest to medical schools. Your depth of knowledge in any subject, demonstration of intellectual curiosity, and interest in pursuing questions of interest via research for your JP and thesis, will be weighed favorably by schools. So, in a general sense, it all "counts." If you're interested in pursuing biomedical science research in med school and beyond, it doesn't hurt to have some experience in a science laboratory beyond your prerequisite course lab experiences. This would not have to be molecular in nature - chemical, physical, biochemical, etc. would all be fine. Again, this applies only to certain programs, and certain career goals you may have. And of course, if you're interested in the MD/PhD (or MSTP's), then in-depth research in a lab in your field of interest is critical. If you're more



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interested in other types of research--quality improvement; ethnographic; medical education--then seek opportunities that will give you exposure in these areas.

## **Study Abroad Questions**

### **Can I study abroad as a Pre-Health student?**

Yes. These experiences take careful planning, so it is best to consult with the Study Abroad Office and Pre-Health Advising early. We also highly encourage you to attend the Study Abroad for Pre-Health Students info session in the fall semester. If you decide not to study abroad, this will not disadvantage you as an applicant.

### **Can I take Pre-Health prerequisites abroad?**

Some schools state that they do not accept abroad courses and others will accept or consider abroad courses if they appear on a U.S. college or university transcript. Be sure to check individual program/school policies. Overall, it is less risky to take recommended rather than required courses abroad. Generally, we recommend to steer clear of taking prerequisite courses abroad.

## **MPH & MD/MPH Question**

### **What can I do with an MPH vs. MD/MPH?**

An MPH leads to a wide variety of career options. A great place to start researching career options is the [American Public Health Association "What is Public Health" resource\(link is external\)](#), where you'll see, among other things, that an MPH leads to work in environmental health, biostatistics, health administration, nutrition, epidemiology, health education, and more. Many of the prehealth students we see elect to go for the joint MD/MPH degree because they want to study health as it pertains to larger populations and cultures (public health) while still treating the individual (human medicine). A background in public health can benefit nearly any doctor in their desire to treat the "whole" patient and to be a leader within the community. For a list of joint MD/MPH programs and other information, check out the [Association of Schools and Programs of Public Health\(link is external\)](#).

## **MD vs DO Question**

### **Why consider osteopathic medicine?**

There are a number of reasons we might suggest [osteopathic \(DO\) medical schools](#). We are likely to suggest DO for students who we think would be a good fit for the philosophy of the profession, or whose interests and career goals align with those of other students we've seen find success in the DO profession. For example, if a student expresses interest in working primary care and preventative medicine in underserved communities, that may fit well with DO. If a student's highest priority is attending medical school in a specific area of the country, adding DO schools to a school list opens up more options.

DO programs often have lower average MCAT/GPA metrics for accepted applicants. But, we don't think that this means DO programs are "worse" than MD programs, nor does it mean that you should treat it as a "fallback" option.



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A little more detail on osteopathic medicine: the field is experiencing rapid growth, with more than 25% of current medical students training as osteopathic physicians.

Similarities between DOs and MDs:

- Both complete a four-year medical education
- Both participate in [residency match \(link is external\)](#) and can participate in any specialty
- Both are found in private practice and hospitals all over the country, and can practice abroad

Differences:

- DO schools employ a 'whole person' approach in their training, with an emphasis on the body as an integrated whole
- DO programs emphasize preventative medicine and the majority of students go into primary care, often in underserved areas
- DO training includes extra work in the musculoskeletal system and in manipulative treatment

Osteopathic medicine can be an attractive option for those who are interested in a holistic approach to medicine and also for those whose metrics may make them less likely to break through in the allopathic (MD) admission process. Any student interested in becoming a physician would do well to learn more about osteopathic medicine and see if it's a good fit for them.

## **Glide Year Questions**

### **What are the implications of taking one versus two glide years?**

In spring, seniors recognize the limited number of hours they have left to maximize the thesis, medical school application preparation, job search, and the rest of life—you only get one thesis, one senior year, whereas the medical school application timeline is more flexible.

If you plan on one glide year, that year is your application year—there will be many tasks: writing secondaries, sending updates to show your continued interest in schools, staying productive so that you have something to say in those updates, managing interviews, feeling the stress of the unknown.

If you take two years, the first year becomes another preparation year. You can take the MCAT, develop relationships for letters of rec, gain clinical experience, and just be an adult in the world. Application prep and our committee letter would begin late fall/early spring, but you will find that you likely have a lot more time to manage it.

### **Will taking a gap year(s) hurt my chances of getting into medical/dental/veterinary/etc. school?**

No, there is no disadvantage to taking a gap year. More and more applicants are waiting to apply. It will only advantage you to gain additional experience before entering a program. You should apply when you are ready and when you have fully prepared.



## **MCAT Questions**

### **What's the latest date I can take the MCAT and still apply knowing my score before I apply?**

For your application to be complete by late July, you should submit your transcripts and your primary application (AMCAS for MD programs, AACOMAS for DO programs) by early June. It can take up to eight weeks for the application to be processed. It takes about a month to receive your MCAT score after you take the exam.

If it's important to you to know your MCAT score prior to submitting your application, and you want to submit your application by early June, that means you should take your MCAT by early May. If you're comfortable submitting your application without knowing your score, you could submit your application in early June and take the MCAT in late June / early July. Your score will arrive a month later, which is still in that late July / early August window.

### **How much time should I spend studying?**

- On average nationally, students' study for about 12 weeks for about 20 hours per week. You should be spending at least a couple of hours per day during the week, with more concentrated time on the weekends.
- The AAMC – the official test administrators – offer their guidance on how to create a study plan, as do many companies (Student Doctor Network, Kaplan, to name a few): read through their suggestions, then create a plan that works for you.
- Content review is important, but practice is critical.
  - You have to adjust to an online test with time constraints, and build your endurance for such a long test day.
  - Most of our students take at least 6-8 full-length practice tests. A practice test takes 7.5 hours and reviewing the exam will take at least a few hours.
  - Reviewing the exam is critical: you need to understand what you got right and wrong, why you got things right and wrong, and then adjust your study and test strategies accordingly.
  - You should invest in the official [AAMC practice exams \(link is external\)](#) and supplement with additional resources (some students just use free exams that are offered from time to time by prep companies;

## **Applying to Medical School Questions**

### **When should I make my med school list?**

Most applicants start crafting their list in the spring prior to application. Almost all applicants include their public state schools on their list, so early on, check your state schools to be sure that you're fulfilling their requirements (if you don't know your state schools, use the [AAMC Medical School Admission Requirements \(link is external\)](#) site to find them.

It's hard to develop the list without your MCAT and GPA, so much of the work will be done after you've taken your MCAT.

You'll want to submit your application in June, with at least one school listed. Some applicants will submit the application with one school listed to secure an early place in the verification line (the longer you wait, the longer the verification process takes). They can then do additional school research and add more schools without losing their place in the verification line.



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## **What are secondary applications and why are they important?**

Your primary application (e.g., AMCAS, AACOMAS, TMDSAS) was broad and covered general information about your preparation and motivation for becoming a doctor, dentist, vet, etc. The information in the primary application will be received by all schools and they will determine how to use it. A supplemental or secondary application is specific and designed by each individual school to capture information that they, specifically, deem important in determining whether you're a good fit for their school. The bulk of your secondaries will likely arrive within two weeks of the first application release to schools (date varies by year, but typically late June), or two weeks after verification if you aren't verified by that release date. The rule of thumb is to send back within two weeks of receipt of a secondary.

## **What's the best way to learn about the different specialties I can pursue after medical school?**

The way that most premed students learn about different kinds of specialties is by shadowing physicians in those specialties and using the experience with someone in the field to think about their own fit for that field. Volunteering in a patient care setting will also provide some insight into a certain specialty; while you won't necessarily spend a lot of time with doctors, you will get a sense of how the general environment and culture feels, for example, in an inpatient vs. outpatient setting. Rather than trying to learn about all 120+ specialties before medical school, focus on the kinds of interactions you might like to have with patients (some specialties focus on long term and continuous care, others with shorter interactions but perhaps more variety), what kind of work/life balance you seek, how much time you want available for non-clinical activities (e.g., research, policy), and whether you prefer work that's more hands-on and procedural or more focused on reasoning and deduction. If you keep these factors in mind now, you'll have more information to start narrowing down specialty choice once you get to medical school. Once you get to medical school, you'll have an advisor who can help you think through your residency choices, just like at Princeton you have advisors to help you think through major choices. No need to absolutely decide until you've had much more exposure to medicine and much more time to think about other long-term life factors.

## **I have one med school acceptance but there were many schools that did not interview me but I really think I have a shot at. I'm thinking that I'd like to reapply. I really do not want to go to School X. Can I reapply?**

This is a serious matter. Please come in and talk to us about your reasons for not wanting to attend School X. We've advised you from the beginning to apply only to schools you would attend and to keep an open mind throughout. In general, we never advise former applicants to reapply when they were accepted to at least one U.S. medical school. Aside from the logistical issues of going through the process again when you already have an opportunity awaiting you, most schools feel, as we do, that enrollment in a U.S. medical school is a privilege and a wonderful thing.

The only time we can think of where such a reapplication might be OK is if a serious personal crisis led you away from your goal in the midst of this application cycle (a death in the family, an illness, etc), and a number of years passed before you came back as an applicant; depending on the uniqueness of the situation, we suspect that med schools would understand why you stepped away from the chance to attend med school the first time around. But even in that scenario, we would advise you to ask first for a one-year deferral and try to renew that deferral if you needed more time to get back on track.



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## **I know that most students get into medical school but what about the ones who don't? What do they usually do?**

Of those who were not accepted over the past four years, about 2/3 of them reapplied in a later year and were accepted. Most, but not all of them took two years – it is common to take a year to address any areas of the candidacy that needed strengthening (and take a step away from a long, stressful to reflect and regroup), then put the application in at the end of that year to go through the interview year. Commonly students need additional academic preparation to bring their metrics up, time to retake the MCAT, time to gain more clinical exposure or just time to be out in the real world and gain new perspectives and personal growth. We've had students some who have expanded their school list to osteopathic (DO) schools or overseas MD programs to expand their options. Of those who chose not to continue in the application process, some went into other health careers (dentistry, physician assistant, public health, nurse practitioner), some attended masters or doctoral programs to focus on the research aspect of health, some are approaching health as consultants, sales associates, or device makers in health-related companies.

## **When should I expect to receive interview invitations?**

Historically, over half of the interview invitations our applicants have received have come in September and October (this is part of the argument for applying early). At the same time, we've seen accepted applicants who received their first invitation in January or later in the spring. One of the hardest and most stressful parts of the process is waiting to hear about interviews.

## **Committee Letter Questions**

### **What is the committee letter and why is it important?**

The committee letter, also called a composite letter, is a two-page summary of your candidacy to health professions school. It is written by the Keck Science Committee and incorporates information from your individual letters of recommendation, your academic history, your cocurricular activities, and additional information that we ask for when you're applying. Simply put, the committee letter reflects what you have done and who you are as a future health professional. It can be a helpful road map for an admissions officer to read since it summarizes information found throughout your application materials into a cohesive narrative. The committee letter is available to Keck students up to 2 years after graduation with a minimum 3.3 GPA, applying to medical or dental programs.

### **How many letters do I need?**

Generally speaking, medical schools require at least three letters of recommendation. For applicants who receive our committee letter of recommendation, we ask you to collect from three to six letters. We send all of them along with our letter (your recommenders do not send letters directly to medical schools).

## **CASPer & AAMC PREview Question**

### **What are situational judgment tests and why are they important?**

Situational Judgment Tests (SJTs) are used by schools to better understand inter- and intrapersonal competencies and your approach to ethical decision making. Over the years, different SJTs have been piloted to complement the written secondary applications. Currently,



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the [CASPer\(link is external\)](#) and [AAMC PREview\(link is external\)](#) are the prevailing SJTs that you will be asked to take when applying to medical school. Try to take CASPer and PREview in the summer (June/July) around the time that you're completing secondary applications so that your score will arrive at your schools around the same time that your file will be complete.