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## **Questions from the RJOS Webinar on Orthopedic Surgery as a Career**

Responses as compiled by Kali Tileston MD, Amanda Mener MD, and Deborah Bohn MD

### **Residency/Fellowship Training**

#### **How did you decide on surgery first, and then narrow it to ortho?**

I always wanted to be a surgeon. It really fit my personality. However, many people don't know they want to be a surgeon until third year of medical school. Your rotations during third year of medical school are very helpful in figuring out what you want to do. You may find out you like something you never thought you would!

The first decision is to figure out if you like surgery or medicine more. If you like surgery, the medical school rotations also help you to figure out which type of surgical residency you want (ortho, urology, ENT, general, etc.)

#### **Do you have to do a fellowship right after residency or is it something that you can do later?**

In general, you do fellowship immediately following residency. A fellowship is not required but allows you to further specialize within orthopedic surgery. Fellowships are one additional year.

#### **What are the pros and cons of the various orthopedic fellowships?**

I think that is a very personal, subjective experience. Also, it is very dependent on where you train and who you train with.

#### **After medical school is there someone who helps us get set up with fellowship and residency?**

Yes! There are counselors and mentors all along the way, especially for residency applications.

#### **After deciding upon orthopedic, how did you come to decide between a being a more generalized orthopedic surgeon like trauma vs more focused like hand or joint replacement?**

During residency you rotate through all the different types of orthopaedic surgery. This allows you to try out all of the different specialties prior to making a decision.

#### **Was it difficult to adjust to working so early in the morning during residency/fellowship?**

As a non-morning person the early mornings are hard at first but it gets better the further on you get in your training. Then you have kids and realize you're never sleeping in again and you begin to make the most of your mornings!

Later, when you're in practice, you can set your own schedule or choose a job or specialty where you're not up in the middle of the night so much, don't have to be at work until 7 or 7:30, etc.

**How competitive is a residency in orthopedic surgery?**

It is always one of the most competitive.

**Can you pursue more than one orthopedic surgery subspecialty?**

Yes! It is becoming more common to do two fellowships. However, usually these fellowships are complementary (ie hand and pediatrics to become a pediatric hand surgeon). It would be very rare to do two very disparate fellowships like spine and arthroplasty since people usually just pick one specialty to focus on when they are in practice.

**Did you have any inspiration that led you to pick orthopedic surgery?**

Operating in the middle of the night with a team of 4 other orthopaedic residents. Despite it being 2 o'clock in the morning, everyone was having a great time and was truly enjoying what they were doing.

**What types of research will help my residency application the most?**

It would be most helpful if you could find research that will have at least a couple of papers completed by the time you apply. In a perfect world, you would be first author which would demonstrate that you spearheaded the project.

**How many fields were you interested in before you knew orthopedics was the right one for you?**

I always wanted to be a surgeon. I didn't know I wanted to do orthopaedics specifically until third year of medical school.

Many women don't consider orthopedic surgery until they are in medical school. We are hoping to change that!

**Is there a case where a medical student wouldn't be accepted into any residency programs? What happens then, in terms of career options?**

It is possible not to be accepted into a residency. Orthopedic surgery is a desirable, and thus very competitive specialty.

If a student doesn't match into a residency program, there is something called a "scramble" where you find a spot at a place you may not have applied or find a spot for 1 year in a program and then you could apply again.

If someone goes unmatched, sometimes people also choose to delay medical school graduation and just apply to orthopedics again the next year.

### **Does Academia hire General Orthopedic?**

Not usually since the practices are so large and you are training other physicians. Generalists tend to be in private practice, especially in smaller communities where there isn't access to all the sub-specialties

### **What is the average age of orthopedic surgeons well into their careers? (done with the schooling part)**

If you go straight through school, residency and fellowship and take no gaps, you start your career at 32. Most people take some sort of gap or do something else for a year or two so don't necessarily start at that age.

The ages of my intern (1<sup>st</sup> residency year) class range from 26-30, so we will start our careers from 32-36. With more people taking gap years at various parts of their schooling, the ages that people start careers can vary.

It sounds like a LOT of school, but after college, the only real "school" is the first 2 years of medical school. Years 3 and 4 in medical school is exciting because you are working in the hospitals and clinics learning how to take care of patients and about the different specialties. In residency, you are actually paid—it's considered a job and it feels like a job, not school.

### **Would you recommend taking a year off during medical school to focus on research before applying to residency?**

It is helpful if you need to strengthen your application or if you want to take some time off. Otherwise, I don't think it's necessary. In some medical schools, this is a very common track but in most the students go straight through.

### **Compared to other surgical specialties, do orthopedic surgeons have a similar career longevity? Wondering if using power tools would limit the length of a career someone could have vs other specialties that don't.**

I find that orthopaedic surgeons tend to work longer than other specialties. We all really love what we do. Power tools make our jobs EASIER. Also, many surgeons become surgical assistants or just do clinic after they stop operating.

### **How do fellowships differ from residencies?**

A fellowship is done after residency. It is where you specialize in a certain portion of that specialty. So for orthopaedic surgery, you go to residency and train in all types of orthopaedic surgery. Then, if you want to do something more specific like spine, foot and ankle, hand, etc then you do a fellowship in that subspecialty.

### **When does a typical day that starts at 4am end in residency?**

Usually 3<sup>rd</sup> or 4<sup>th</sup> year.

**I'm a medical student in an MD/PhD program...are there orthopedic surgeons who are part time researchers?**

Yes! Most academic surgeons spend at least one day a week or potentially more doing research.

**What is a benefit of a fellowship?**

It allows you to be more specific in your specialization. You learn things much more in depth in fellowship than you could in residency. A general orthopedic surgeon does a lot of different types of surgery but usually refers more specialized or complicated problems to a fellowship trained surgeon. A fellowship allows you to focus on a specific body region or type of surgery.

**Family & Work-Life Balance**

**Suggestions on work-life balance, dating, etc in medical school and residency?**

Keeping an organized schedule is incredibly important. In medical school, many of your friends are also in medical school and you have more free time than in residency, so it is easier to have a work life balance. The first few years of residency are more difficult but do-able. It's really about maximizing your time.

Many women see friends and family, date, travel, marry, and even have children during medical school. I think of it like this: many people have jobs where they travel several days per week or have to work 2 jobs to make ends meet. Nobody tells them they shouldn't have a family. Residency is no different; it may be busy but it's all about setting priorities.

**I guess this is more of a personal life question, but I've often heard in general for females going into medicine it's hard to have a work life balance and that you shouldn't try to get married or have kids until after residency. What do you guys have to say about that? Because Dr. Tileston and Dr. Wong's presentations seemed like they had pretty good work-life balances while doing orthopedic surgery.**

Work life balance is all about priorities. I made sure that I truly enjoy my job and the people that I work with so that when I am at work, it doesn't really seem like work. Also, I have gotten better about sticking to a schedule and blocking out time every so often for my family. I think getting married in medical school and residency is fine. In terms of kids, just make sure you have a stable child care plan that is flexible and that you understand the cost of childcare in your area.

The other female co-intern in my residency class and I both met our husbands in medical school and got married before starting residency. Our husbands are in residency programs elsewhere. In fact, in my intern class 4 of the 5 of us are either married or in long-term relationships. I would not be discouraged from

getting married before or during residency. I will likely wait until after residency to have kids but that is just a personal choice. In general, I have seen women in ortho and other surgical subspecialties choose to get pregnant later in residency (4<sup>th</sup> or 5<sup>th</sup> year) when in house call is lighter.

I (Dr. Bohn) had a baby before I started medical school at age 26 and another during medical school, so I had kids during residency. We made it work. It was hard and I didn't have time for much else at the time, but humans are good at getting through whatever challenge is put in front of them.

**How hard is it to raise a family while in med school/residency and when do most women who pursue medicine have kids?**

Kids in medical school and residency can be done but is challenging. You just need consistent childcare. Most women wait until towards the end of residency to start having kids but there are women that have had them in residency and have done extraordinarily well.

**Dr. Tileston, can you speak a bit about what your hours look like in academia and how this translates into your work life balance?**

As I progress in my career, my hours are continually changing. I am spending more time in leadership positions and therefore was travelling more (pre-COVID). I have a husband who is very supportive of my career so I never feel like I have to justify my time to my family. I also live close to my in-laws and have a live-in nanny so know that someone is always taking excellent care of my children if I'm not around. I truly love what I do so work is like a hobby to me and I'm happy to spend time doing it. I also make sure to be diligent about blocking time in my schedule for my kids. I do not read work emails or do work related things during that time.

I started doing this after hearing a talk on burn out and its effect on family life. When they ask kids and spouses about the effect the physician's schedule had on their lives, most kids didn't feel like there was not enough time with the parent. Rather, it was when they brought their work frustrations home and didn't separate themselves from work that it affected the children. It truly is about quality rather than quantity.

**How do you all balance your orthopedic careers with other parts of your life (hobbies, family, etc)? As an orthopedic surgeon, do you have time to pursue other hobbies such as writing books (even books about medicine)?**

I think one of the things I love most about orthopaedic surgeons is that they have so many other interests outside of medicine. You get good at managing your time and most of us have the means to outsource many of the things that do not bring us joy (house cleaning, grocery shopping, etc). This leaves time for the other fun stuff!

**Is it more competitive to work in academia or private practice?**

Depends on where you want to live and what your specialty is. They are different types of careers. Residency is a good place to determine what type of practice would fit best for you.

**Good evening, thank you for presenting! I was wondering, have you or any of your colleagues done work on translational research while practicing?**

Translational research is absolutely done. Many times the physician will team up with a PhD and they run a lab together.

**Medical School**

**For someone like myself, who is finding undergrad hard at the moment do you guys who have gone through it think it gets better? Or is just something you have to adjust to?**

It gets better as you begin to like your coursework more. It seems less monotonous and more applicable to your life. You also adjust to the rigors of studying independently and find good study habits.

**When can you apply for medical school?**

You apply for medical school during the last year of college (or later if you are taking a gap year).

**Without the ability to shadow due to COVID-19, how should medical students try to find out if they are fit for ortho?**

Join the orthopaedic interest group. You should also have an opportunity to rotate on orthopaedics during your third year.

**What skills/projects should medical students work on to demonstrate their interest in orthopaedics?**

Research and join an orthopaedic interest group.

**Are there any ways for medical students to get more involved in RJOS, e.g. leadership roles?**

Yes! You should apply for membership in RJOS. There is a \$40 fee to become a student member. Once you are a member, you will have access to resources such as being assigned a mentor, applying for leadership positions on one of the RJOS committees, and applying for a scholarship to attend our annual meeting in person. There is also a book called, Medical Student Guide to Orthopedic Surgery (\$11 for the electronic version) available from RJOS (<http://www.rjos.org>)

**Is orthopedic surgery the best fit for someone who is very into surgery (isn't faint-hearted or afraid of blood, etc)? What other surgeries are like this?**

I don't think there is a specific type of person that orthopaedic surgery is best for. You get a sense in medical school if you enjoy being in the operating room and then you make your decision from there.

**I'm currently a high school student going off to college new year. I am very interested in sports medicine and orthopedics, but I am unsure as to what I should major in. What do you think is the best major for a career in sports medicine or orthopedics?**

Whatever you are passionate about! You must take prerequisites to apply to medical school so many people go into a science major. But if you love art history and can do both then go for it! It makes you a more interesting applicant and school will be more stimulating if you like your coursework.

Check out what prerequisites medical schools require on the individual med school websites. They tend to be the same or similar for all medical schools.

**How important is research when applying to medical school?**

It is all about having something you are passionate about. Just as when you were applying to college they expected you to have interests outside of school, medical schools would like you to have had other experiences in college. Research is a good way but not the only way to build your application to medical school.

**What is Step 1 and Step 2 in medical school?**

Step 1 and Step 2 are tests taken after your 2<sup>nd</sup> year and in your 4<sup>th</sup> year of medical school, respectively. It is a standardized test that looks at your knowledge of all medical subspecialties. It is similar to the MCAT but is only testing medical knowledge.

**I've been told that it is actually detrimental to rush through college (graduate a year or two early) and apply to medical school as fast as possible because medical schools see age as an indicator of maturity. Is this true?**

I'm not sure if that's 100% true but maturity is important for medicine. Medical schools also want to see that you're a well-rounded person. It would be challenging to graduate from college in 2 years and have other experiences outside of classwork

**I want to actually be a sports medicine physician not a orthopedic surgeon. Are these experiences on the way to be a doctor similar?**

Yes. The exception is that for sports medicine you usually go into emergency medicine or another medical specialty and then do a fellowship in sports

medicine. Sports medicine doctors take care of musculoskeletal injuries that do not require surgery.

**I struggle with study skills but am currently a freshman in college. Do you have any suggestions on books and skills on what to study for the MCAT?**

There are excellent prep courses for the MCAT. I would highly recommend you take one of those in the summer prior to the MCAT. Some of the more popular ones are Kaplan and Princeton Review.

**I am a M1 on the east coast but am I California native. Any advice on trying to come back to California for residency?**

Study, study, study. Also away rotations can be very helpful in demonstrating your interest. You could also try to find a mentor through RJOS or JRGOS who is on the west coast.

**I family with Loma Linda, I went there last year for pharmacy school but I switched to medical school and am currently in my first year. Do you have any advice for applying to their residency?**

Join the student interest group. This is a great way to get to know the faculty and get involved early on. Good luck!

**I am a student at the University of Michigan and most of my science classes are 1000+ people; how would you recommend getting to know professors on a more personal level while attending such a large university?**

I went to UC Berkeley and had a similar experience. Office hours can be helpful. Also, as you get further along in your coursework your classes will be smaller. I also had some TAs write the letter of recommendation and then have the professor sign it.

**Any advice for undergraduate students in working towards medical school?**

Study but enjoy your time! Have experiences outside of just your school work.

**How to stand out when step 1 is pass/fail?**

Participation in research, volunteer activities, medical school leadership activities, excellent rotation grades, finding mentors that can vouch for you in your application, demonstrating a dedicated interest in orthopedic surgery through all of the above.

**As a medical student, what steps would you recommend taking to be on track for a career in Orthopedics? summer programs?**

I would recommend joining the orthopaedic interest group. You could consider doing research in an orthopaedic lab between your 1<sup>st</sup> and 2<sup>nd</sup> year. There are some summer programs. I think the University of Iowa has one for female med students.

**What advice do you have for a current M1 with regards to boards studying as Step1 has gone P/F and Step2 is still a mystery?**

I think we are all figuring this out. Build your CV in any way you can to demonstrate interest in orthopedic surgery.

**Thank you very much for your time everyone! I'm currently working for a (totally awesome) shoulder and knee arthroscopy surgeon as her research assistant. As I apply to med school, I'm wondering how significant of a factor familiarity with faculty is when deciding on a school? In other words, should I try to go to the school I currently have connections in the ortho dept at, and would this mean a better chance at getting into an ortho residency compared to going somewhere else?**

Connections matter less when you are applying to medical school. You will make your connections IN medical school. As you get further and further along in your education, the pool of people you are competing with gets smaller and smaller and the importance of these connections becomes more and more important. You should go to the medical school that you believe fits you best. You will make connections when you get there and if it's different than where you currently are working then you will have connections at BOTH places!

**I have a question: when applying to all this can you get financial support?**

Yes. You can sometimes take out extra loans as applications are very expensive.

In general, try to minimize your school debt. After years of private education, loans build up. More and more, it's important to consider the cost of the college or medical school you go to; it may be better to go to a less expensive school (where you get in-state tuition or a scholarship) than a more expensive private school. If you do well in college, it doesn't matter too much where you go in terms of getting into a medical school. Same with med school to residency.

**Currently applying to medical school, when should I expect to hear back/when did you hear back from schools that you submitted your secondary applications to?**

I think you can start hearing in late November/December but most schools are in the spring. Also, you may end up wait listed so may not know where you are going until the very last minute.

**How much does school prestige matter when applying to med school, residency, and fellowship? Thank you!**

I think it's all about balance and that is a very personal decision. It is important to go where you think you will be happiest and thrive the most.

**Any specific tips for applying to medical school or for making applications stand out?**

It is important to get good grades and do things that show you are passionate about medicine. Also, spend a lot of time on your personal statement and have lots of different kinds of people read it.

**What did you major in when you were an undergraduate?**

I was a molecular and cell biology major. However, many orthopaedic surgeons did other things like English, engineering, nursing, language, psychology or other non-science majors. You don't have to be a science major but you do have to do all the prerequisite courses.

**I am a high school student, do you have any advice for being able to explore different career paths and gain experience?**

I would consider volunteering in a hospital. You could also volunteer with the athletic trainers at your school or reach out to one of your family physicians or friends to see if they would be willing to mentor you.

Be sure to check out a Perry Initiative outreach program. There is one program for medical students and a different one for high school and college students. The program lets students get their hands on some tools and Sawbones (fake bones that you can cut and drill into) to fix fractures. Check on their website to see if there is a program being offered near you (<https://perryinitiative.org>).

**Off topic a little bit, but, did any of you play a sport in college? If so, how did you manage your time? I want to go to college for hockey and study medicine.**

I did not but *many* orthopaedic surgeons do play sports in college. It is definitely possible but you must be very good with your time management.

**What kind of study strategies do you use in medical school to succeed?**

Create a schedule for studying. Make sure you go to class. Also, there have been some studies that show that you retain more if you physically write it down so I always wrote notes even if it was already on the syllabus.

**How can you get really involved in orthopedics in high school if you know for sure that's the field you want to pursue?**

You can find a local mentor, take a part time job working in someone's office or volunteer with an athletic trainer. Become a scribe, become a nursing assistant and get a job in a hospital or clinic setting part time.

### **Being a female orthopedic surgeon**

**Did you ever have anyone doubt that you were the ortho surgeon? Like a patient expect a man?**

This happens but patients in general are more impressed when you tell them that yes in fact you will be operating on them.

**Does imposter syndrome continue into residency and beyond? Or is that something that fades over time?**

Yes. Many surgeons (even the most well known, renowned ones) have imposter syndrome. It does fade but is totally normal.

**Is Ruth Jackson specifically for orthopaedic surgery?**

Yes! Ruth Jackson was the first female orthopedic surgeon. The mission of the society is to promote women in orthopedic surgery. There are many excellent resources available through RJOS membership and on the website. In particular, check out the RJOS podcast to learn more about the diversity of careers women in orthopedic surgery have.

**Can medical students join the Ruth Jackson Orthopaedic Society? Do you recommend joining in medical school, residency, fellowship, or as practicing physicians?**

Yes! And it is always good to join whenever it works best for you.

**Is it Ruth Jackson open to only females?**

No! We have many supportive male members of RJOS and welcome them with open arms.

**I am a sophomore undergrad student. Is the Perry Initiative strictly for high school students?**

There is one program for high school and college students. They also have an outreach program for women in medical school.

### **General Questions**

**How has covid been affecting your jobs?**

COVID definitely slowed down all practices for many months. However, most hospitals have gone back to normal functioning and most clinics are about back to their normal levels of activity.

**In academia and private practice can you choose which company's products you work with or is that a general hospital/practice decision?**

In general, you can choose which company's products you work with. Each hospital has contracts with vendors so if something new is requested, it must go through a vetting process. Also, this allows for price negotiation. If there is already a contract in place then you may have to justify why one product is better than the other.

**Have you ever had to deal with losing a patient as a surgeon and if so how does that affect you as a surgeon?**

Yes. You never forget but it gets less acute over time. The deaths that are more "expected" are easier to heal from. It is the unexpected ones that are more challenging. Hospitals also frequently offer counseling or peer to peer interactions after the death of a patient. One nice thing about orthopedic surgery is that most of our patients are otherwise healthy, so losing a patient is extremely rare in our field.

**What's the most difficult surgery you had to perform, and why?**

Almost any tumor surgery. It requires a lot of precision and you need to make sure you get it all out in one piece without contaminating the rest of the field. It is also tends to have more life or death consequences than other types of orthopaedic surgery.

My (Dr. Bohn) favorite and most difficult surgery is done when a child is born without a thumb. In those cases, we can shorten and turn the index finger to become a thumb. It's called an index pollicization.

**Dr. Tileston, what kind of surgeries do you do and how long do they usually take?**

As a pediatric orthopedist, I do all kinds of surgeries. I am really a generalist that specializes in children. Some of my surgeries last less than 5 minutes but I also do surgeries that last 8 hours or more.

**How is the financial balance especially when in school and needing to take out loans?**

Luckily, most orthopedic surgeons make a really good salary (\$400,000 - 900,000/year on average, depending on specialty and location) and therefore are able to pay back their school loans over time without significant financial hardship.

**Have any of you had the opportunity to practice orthopedic surgery within the arena of global health or for marginalized groups?**

Yes. I go to Central America every year and find it to be an outstanding way to reset. Many residencies are now offering a global health rotation.

I (Dr. Bohn) have done global health outreach trips in Ecuador, Honduras and Nicaragua.

**What is one personal quality that you believe makes for a great orthopaedic surgeon?**

Passion for the job! Others are: hard worker, good at fixing things (engineering type of mind), likes physical work over office work, compassionate.

**What makes ortho different from other surgical specialties?**

I think the team mentality is very unique to orthopaedic surgery. We also have a lot of fun both in and out of work. We get to use power tools and definitely have the most equipment. The types of surgery we do improve people's function more than many other types of surgery.

**Can you elaborate more on why you chose orthopedic surgeon as your specialty and any hardships with being a female in ortho?**

I chose orthopaedics because I loved my co-workers and I loved that people were immediately better after surgery. I haven't found many significant hardships with being a female in orthopaedic surgery.

**Do you have any additional student specific questions?** Please feel free to contact Kelly Edwards who was on the panel. She can be reached via email at [edwar647@umn.edu](mailto:edwar647@umn.edu).