

## FAQ FOR MEDICAL STUDENTS

Updated April 2013



### 1. How can I learn more about neurosurgery?

It is important to identify both a resident and faculty mentor in neurosurgery once you have developed an interest in this field. These mentors can advise you as you put together your application for residency and expose you to the operating room and neurosurgery clinics. The summer after your first year of medical school is an optimal time to initiate research and shadowing experiences. You may find resources on finding a mentor through the WINS Medical Student Mentoring System at

[http://www.neurosurgerywins.org/medical\\_student\\_corner.html](http://www.neurosurgerywins.org/medical_student_corner.html).

Enrolling in an elective at your home institution during second year clerkships can help you decide if this specialty is right for you. All students interested in neurosurgery must do sub-internships during the third year in medical school and away rotations at different hospitals are typically suggested. During these rotations, your role at that program is meant to mimic that of an intern or junior resident.

Another means for exposure to this field is to attend your home residency program's weekly didactic sessions and grand rounds. These teaching sessions are a great place to learn about neurosurgery and to interact with different faculty and residents. Once you have become more familiar with and interested in this field, you may even consider introducing yourself to the program director and chairman of the department. Neurosurgery is a small field and developing these relationships early on is encouraged.

### 2. As a medical student, when do I need to decide on a specialty?

Certainly when you decide on a specialty is less important than choosing the right specialty for you. However, medical students who commit to this field early on will have more opportunities to engage in research, electives, sub-internships and interest groups. For this reason, if students have interest in neurosurgery, it is encouraged to identify a faculty mentor, shadow in clinic and in the operating room and get involved in research as early as one's first year of school. Students who develop interest in neurosurgery later should discuss options with their mentor to improve their resident applications including year-off research opportunities.

### 3. Once I confirm neurosurgery as my specialty of choice, what should I do?

In addition to continuing to perform well on clerkships and electives, as well as building their CV to prepare for their application, students should meet with their program's chairman or training program director to discuss their interests. Departmental leaders provide helpful insight for the match process and can identify areas for improvement in students' applications. Seeking out advice from older students or residents who have already gone through the interview or match process can be extremely helpful. During sub-internship rotations, students should attempt to develop relationships with the residents who can not only provide invaluable advice for the application process but also offer research opportunities. Students should also begin to identify faculty in neurosurgery to write letters

<http://www.aans.org/en/Young%20Neurosurgeons/Medical%20Students/Questions%20You%20Should%20Ask.aspx>

of support for their application. Students are encouraged to submit their research to and attend national conferences such as the annual meeting of the American Association of Neurological Surgeons. These opportunities can serve both as an opportunity to learn about this field and network with neurosurgeons from around the country and world.

#### **4. Is it helpful to devote a period of time at a training program? How do I go about setting up an away elective (sub-internship)?**

Most residency training programs in neurosurgery match only one to three students each year, making the application process extremely competitive. Students interested in neurosurgery should enroll in a sub-internship in their medical school's neurosurgery program in their third year of school. During this rotation, students typically take on the roll of an intern, operating with residents and faculty during the day and taking call at night. This rotation is an excellent opportunity for students to introduce themselves to faculty and residents, learn about their home institution's clinical environment and to be exposed to the life of neurosurgery residents. Students should elect to rotate at outside institutions for a one-month sub-internship as a visitor. This is a useful way to familiarize oneself with another institution's training program and get to know the residents, operative experience and faculty of another department. Keep in mind, these rotations can count against you if you do not work hard or are not perceived as a team player.

The best place to start setting up the elective is the neurosurgical residency's [Web site](#) (AMA FREIDA database provides students with contact information for each neurosurgery residency program in the United States). Even if they do not have specific information, the specific department's website should be able to provide you with contact persons you can speak with to attain more information.

#### **5. What is the "Match" and do I have to participate in it to get in to a neurosurgical residency program?**

All ACGME-approved neurosurgical programs participate in the Neurosurgery Match Program. In order to be equitable to both the applicants and programs, the Match is set up in such a way that applicants and programs rank each other (see [Match Rules](#)). Then, a computer algorithm pairs them based on their preferences. The process is divided into three phases:

- a. Registration and application are submitted to the National Residency Matching Program and individual applications are distributed to training programs. This happens over the early fall of your fourth year of medical school.
- b. Interviews generally occur between October-January of your senior year. Interviews are selected according to the applicants' academic record, USMLE scores, research experience, recommendation letters and extracurricular activities.
- c. Based on the interviews, the residency programs and the applicants separately submit a rank list. The Matching Program calculates the best sequence for the applicant and the program. The Match usually occurs during the month of March. Unmatched applicants

are notified a few days before the actual match to enroll in the SOAP (Supplemental Offer and Acceptance Program). Details on the match algorithm and vacancies can be found on the Match Web page. A schedule for the year can also be found [here](#).

### **6. I am going to need letters of recommendation to get an interview for an internship and residency. Who should write them and what should they include?**

Try to obtain letters from people who know you best and can make constructive comments about your work ethic, intelligence and ability to be a team player. Since academic neurosurgery is generally a small community, it is always helpful if your letters come from neurosurgeons. Some programs require at least one letter from a neurosurgeon for your application. A letter from your mentor in neurosurgery would be helpful in providing programs with valuable insight into your character which may improve your chances at your desired program.

### **7. How should I determine my rank list? What criteria do I look for?**

Every accredited program in neurological surgery trains residents to be knowledgeable and capable neurosurgeons; however, every residency program is different. Depending on your interests, certain programs may be more enticing than others. Before you select your top program, sit down and ask yourself what you want out of the residency. Once your goals are set, choosing a residency program that fits your criteria is simple. Many medical students factor in the proximity of loved ones, research opportunities, operative experience and lifestyle when choosing programs. It is important to ask each program specifically about your goals in order to find the right place for you.

### **8. During the application process, are there tips or advice to assure my success?**

#### *Prior to the interview*

Make sure you update your application with any new awards, publications or other achievements that make you stand out. It is equally important that you are well read in your research interests, so that you can impress your interviewer with your knowledge. Also, look at the program's Web page to find out details about its strengths, the faculty and the residency. Being prepared for the interview will allow the interviewer to gauge your sincerity and interest in the program.

#### *The day before the interview*

Most programs have a dinner the night before the interview with the neurosurgical residents. Assume INTERVIEW attire unless told explicitly otherwise. Keep in mind that residents often play an important role in the selection process so treat the pre-interview dinner as a warm up for the interview. Also remember that these residents could potentially be your colleagues for the next seven years! Nevertheless, remain calm during the dinner and take this opportunity to get to know the residents.

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### *The interview*

On the interview day try to arrive early. Bring a professional briefcase or folder with copies of your resume in case your interviewer asks you specifics. Know your application well and be prepared to talk about your research, your interests outside of neurosurgery, why you decided to choose neurosurgery and why you believe you will fit in at that program. Have some questions to ask the interviewer. Finally, if you really like a program, don't be afraid to state that.

The interview is an ideal time for you to see which programs align with your interests. This will be very important in determining your rank list.

### **9. What should I do if I do not match for my first year following medical school?**

Set up a meeting with your medical school department chairman or training program director and go over the strengths and weaknesses of your application. Generally, there are four options for unmatched applicants:

- Enroll in the SOAP (Supplemental Offer and Acceptance Program) and match into a neurosurgical residency program with a vacancy.
- Consider attempting to enroll in an internship year in general surgery and re-apply the following year.
- Do research for a respected neurosurgeon or other scientist and re-apply.
- Try and find a pre-residency fellowship position offered at a participating institution to spend clinical time with the faculty at the program to increase your chances of matching the following year. These types of positions are rare and only select programs have this opportunity.

There is no correct answer for choosing one option over another; it is a personal decision based on your own application.

### **10. What is an internship; how long is internship; why do I have to do one; and what will I be doing?**

For most people, internship is your first year as a doctor. You spend the year learning how to manage patients and making simple and complex management decisions. Most of your time is spent taking care of patients, learning procedures (i.e. central lines, extra-ventricular drains) and basic operative techniques. The amount of time in the operating room varies significantly between programs - don't expect to be there a lot. Remember, routine management of post-operative patients will be extremely important to you as a neurosurgery resident and neurosurgeon so this is your chance to learn this aspect of medicine thoroughly.

Most neurosurgical programs have a minimum of six months of general surgery during internship where you will spend time rotating through various general, subspecialty surgical fields and the intensive care unit. The remainder of the year will be spent doing neurosurgery and/or neurology, intensive care unit and other electives. This will be form the groundwork

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of your neurosurgical training.

### **11. Will my internship be at the same place as my residency? How will I know if the internship and residency are linked?**

The majority of neurosurgery residency programs include an internship at the same, or an affiliate, institution.

### **12. Where are the U.S. neurosurgical residencies?**

There are just over 100 programs located all over the country, accepting from 1-3 residents. [FREIDA](#), an AMA resource, has a full listing of programs and their location. You can search for program information on this website.

### **13. How long is a neurosurgical residency? What is the training sequence?**

U.S. neurosurgical residencies are between six and eight years, including internship. Typically most programs require:

- One year of internship.
- One to two years as a junior resident. This segment of residency typically includes managing ward and ICU patients, seeing consultations in the hospital, including emergency rooms and trauma bay, performing bedside procedures and learning basic to more complicated operations.
- One year as a mid-level resident. This year may include a rotation at a children's hospital, elective time or research.
- One to two years of research. This rotation will include protected research time and/or an in-folded fellowship in a sub-specialty of your choosing. The time spent in protected research or during the fellowship can greatly differ across training programs.
- One year as chief resident. This year requires that you manage the entire service of patients and perform highly complex operations. As residents mature through the program, they can expect more and more autonomy in the operating room and will be expected to be competent in patient care decisions.

More information can be found [here](#) on how many months residents will spend on each rotation.

### **14. Is there a pyramid system for residency and am I guaranteed a spot from year to year? Will I be in competition with other residents?**

Assuming you meet the individual training milestones for your specific training program, you will continue to advance through residency. Most programs hold 1-2 mandatory meetings with the training program director to ensure these milestones are met. These criteria vary from program to program, but should be made available to you by the training program

director.

### **15. Where would I find information on what I can expect my salary and insurance costs to be when I become a neurosurgeon?**

Many online resources list the mean salaries for neurosurgeons. Keep in mind that posted salaries are estimates and generally based on small surveys. Larger survey data from physicians are available through membership to [www.mgma.com](http://www.mgma.com). Remember that there is considerable variation in salaries depending on where you live, your practice (i.e. academic vs. private) and bonus structure.

### **16. What is Board Certification and what does it mean?**

American Board of Neurological Surgery (ABNS) certification indicates that you have passed competency exams to practice as a neurosurgeon in the United States. A majority of neurosurgeons are Board Certified so it is really a minimum standard. To qualify for ABNS certification, an applicant must complete neurosurgical training in an ACGME-approved residency (international and osteopathic neurosurgery programs have their own certification process). A primary written examination must be passed by the completion of residency training. Depending on which program you are in, you may be required to take this exam yearly until passing. Some programs have their own minimum standard which is beyond the national passing score.

Once an attending, the applicant must collect patient data from his or her practice over a 12-month span. These data along with letters of recommendation and hospital privileges are needed to apply for an oral examination. This process must be completed within five years of finishing residency. Once the ABNS oral exam is passed, the neurosurgeon is considered "Board Certified." It should be noted that obtaining privileges to practice neurosurgery in a hospital does not typically require Board Certification, but the majority of neurosurgeons will become Board Certified during their career.

### **17. Is Board Certification like a license that I have to renew?**

Beginning in 1999, the Board began issuing time-limited certification good for 10 years. To renew Board Certification, a neurosurgeon must demonstrate that he or she is continuing to practice neurosurgery, including submitting cases, demonstrating self-learning and passing a written exam. This process is called Maintenance of Certification or MOC.

### **18. Do other medical specialties perform the same type of medicine/surgery as neurosurgeons and is this considered competition for the same patient universe?**

There is some overlap between neurosurgery and other specialties in how disorders of the spine (e.g. orthopaedic surgery) and vasculature are treated (e.g. interventional neuroradiology, vascular surgery). This overlap in specialization is generally considered an

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opportunity for multidisciplinary approaches rather than competition.

**19. Is there a possibility of neurosurgery becoming an “extinct” specialty in the future due to robotic surgery technology or anticipated new non-surgical interventions?**

Certainly there have been novel developments in technology that will complement current neurosurgical procedures. However, in no way will such developments replace the need for this specialty. In fact, much of this technology has been developed by neurosurgeons. These advances enhance how neurosurgery is practiced leading to better patient outcomes and abilities to surgically intervene when previously this was not possible.