



## Letter to the Editor

# The hindrance of matching into neurosurgery from doctors of osteopathic-medicine perspective

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Dear Editor,

The Doctor of Medicine (MD) and the Doctor of Osteopathic Medicine (DO) are medical degrees that allow individuals to become physicians. Both degrees require completion of 4 years of medical school and participation in residency programs of chosen specialties. However, the approach to medicine is different; DOs receive additional training in osteopathic manipulative therapy, a manual therapy used to treat musculoskeletal disorders and improve overall wellness, and MDs, on the other hand, focus more on conventional allopathic medicine. Despite these differences, both DOs and MDs are qualified medical professionals who can diagnose, treat, and prescribe medication for a variety of illnesses. They often work together in medical settings to provide comprehensive patient care.

It has been observed that DO students pursuing neurosurgical residencies may face challenges during the matching process. The arising issues include institutional connections, research inconsistencies, biases, and limited resources. Despite possessing the necessary qualifications and objectives, DOs in the field of neurosurgery encounter structural obstacles that restrict their competitiveness and hinder their ability to access opportunities. Research indicates that just 2% of osteopathic neurosurgeons in the United States are Doses.<sup>[5]</sup> In addition, only 43% of DO 4<sup>th</sup>-year medical students matched, compared to 74% of senior MD medical students in 2023.<sup>[5]</sup> This highlights the low number of successfully matched DO students compared to other disciplines. It is crucial to underscore the shift, completed in 2020, from the independent appraisal of neurosurgical residency programs by the American Osteopathic Association to a unified accrediting system by the Accreditation Council for Graduate Medical Education (ACGME), which applies to all DO and MD applicants. The ACGME has accredited 113 neurosurgery programs in the United States, recording an average annual intake of 225 positions. Therefore, it is essential to carefully analyze DO students' challenges during the neurosurgical residency matching process and strive to establish changes that could support and improve their matching rate, given that they play in a field regulated by the same body.

When compared to MDs, students of osteopathic medicine have always been considered unconventional. Various factors contribute to this image, including variations in training philosophy, curriculum structure, and institutional reputation. Despite the recognition of COMLEX and USMLE as equivalent examinations for residency applications, there are ongoing

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differences in how the criteria are applied to MD and DO applicants, leading to some bias. Even with advancements, DO students still encounter obstacles such as the reputation of their program, preconceived notions about DO education within institutions, and limited networking prospects, which may impact their likelihood of being accepted into a residency program compared to MD applicants.<sup>[2]</sup> Medical educators, program directors, and legislators play a crucial role in ensuring fairness and minimizing bias in the process of matching neurosurgery residents.

Students aspiring to pursue neurosurgical residencies may face difficulties due to the absence of explicit links between neurosurgery and DO schools. For instance, allopathic medical schools and academic hospitals, in general, have established neurosurgery departments that are renowned for their clinical treatment, research, and instructional endeavors. Consequently, neurosurgery has traditionally maintained strong affiliations with these institutions. Nevertheless, DO students may encounter restrictions in terms of the extent of experience and available resources in the field of neurosurgery. In addition, they may encounter challenges in securing suitable opportunities and assistance to enhance their applications for neurosurgical residency if their universities have limited neurosurgery departments or relevant residency programs. Due to increased competition, DO students may face additional challenges in accessing neurosurgical rotations or mentorship opportunities.<sup>[3]</sup> Furthermore, the lack of a neurosurgery department or residency program at their local university could limit a student's involvement in research, intellectual pursuits, and instructional initiatives about neurosurgery.

The process of matching into a neurosurgery residency program may lean toward MD candidates over DO students due to differences in research emphasis at their respective medical schools. The level of an applicant's competitiveness in the neurosurgical residency matching process is typically based on their research output, which includes publications and conference presentations.<sup>[4]</sup> Research experience is critical in competitive fields like neurosurgery as it demonstrates a candidate's ability to analyze data, scientific understanding, and engagement in academic pursuits.<sup>[2]</sup> Program directors and selection committees may prefer candidates with a history of research accomplishments, believing that such individuals are more likely to excel in academic neurosurgery or engage in scholarly activities during their residency training.<sup>[2]</sup> Students pursuing a DO degree may be at a disadvantage compared to MD students if they lack research experience during their medical school education. Compared to MD schools, DO schools may offer fewer opportunities for students to participate in research projects, possibly due to institutional priorities, academic specializations, or limited funding.<sup>[1]</sup> As a result, DO students

would have fewer research experiences to highlight in their residency applications compared to MD applicants with more extensive research backgrounds.

Neurosurgery residency matching can be challenging for aspiring DO physicians due to prejudices about DO education stemming from differences in training philosophies and outdated views. In addition, the lack of direct connections between many DO schools and neurosurgery departments can restrict access to crucial clinical experiences, mentorship, and networking opportunities. However, DO students can overcome these obstacles by seeking external rotations, exploring potential opportunities, and actively interacting with neurosurgeons.

Several ways DO students can improve their chances of succeeding in competitive residency programs. First, they can collaborate with established neurosurgeons and researchers during a dedicated research year to produce extensive research output. Such collaboration will improve the impact and relevance of their research, which they can then present at national and international neurosurgical conferences, such as those organized by the Congress of Neurological Surgeons and the American Association of Neurological Surgeons. Interactions at such conferences enable the students to prove their skills and link with professionals who could become mentors and offer research collaboration opportunities. Participating in clinical rotations is also a great pathway for students to showcase their skills, particularly in institutions that have residency programs. Together, these strategies can improve the DO student's potential to secure resident program positions.

This study highlights several disparities in the field of neurosurgery, including uneven resource distribution, biases in residency program selection, and varying levels of support for MD and DO students. DO students often face obstacles due to limited exposure to neurosurgery during their education and the perceived biases against osteopathic applicants in some residency programs. Future research should focus on identifying the factors contributing to these disparities and developing strategies to address them. It is crucial to prioritize initiatives that increase DO students' exposure to neurosurgery, provide more mentorship opportunities, and promote fairness in the residency selection process. Collaboration between medical schools, residency programs, and professional organizations can help create a more equitable matching process for all aspiring neurosurgeons. Although DO students face unique challenges, targeted efforts can help level the playing field and ensure equal opportunities for all. By working together and fostering support, the field can develop a diverse and skilled workforce ready to tackle the complex issues of neurosurgical care in the future.

### Ethical approval

The Institutional Review Board approval is not required.

### Declaration of patient consent

Patient's consent was not required as there are no patients in this study.

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### Conflicts of interest

There are no conflicts of interest.

### Use of artificial intelligence (AI)-assisted technology for manuscript preparation

The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript and no images were manipulated using AI.

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