

Reconsidering Early Anatomy Exposure: Performance, Identity, and Belonging in Specialty Choice

Rebecca L. Pratt

Professor of Anatomy, Oakland University William Beaumont School of Medicine, Rochester, Michigan, USA

Article Info

Article Notes

Received: January 02, 2026

Accepted: January 29, 2026

*Correspondence:

*Dr. Rebecca L. Pratt, Professor of Anatomy, Oakland University William Beaumont School of Medicine, Rochester, Michigan, USA; Email: rebeccapratt@oakland.edu

©2026 Pratt RL. This article is distributed under the terms of the Creative Commons Attribution 4.0 International License.

Keywords

Anatomy Education

Professional Identity

Specialty

Residency

Pre-medical

Step

Metrics

Abstract

Undergraduate anatomy coursework is often discussed as a possible prerequisite for medical school acceptance or as a course elective for improving medical student performance in clinical anatomy material. Current evidence, including the 2024 publication *Effect of anatomical studies prior to medical school on medical school anatomy study success and residency choice*, suggests that early anatomy exposure does not reveal a measurable advantage in medical school anatomy performance or standardized examination outcomes¹. The authors also proposed that early introduction to anatomy could possibly influence specialty choice, particularly in anatomy-driven fields such as surgery, orthopedics, and radiology. Anonymous survey results, instead, highlighted that students who applied to surgical specialties demonstrated higher performance in anatomical courses and higher USMLE Step 1 scores compared to those who did not apply to surgical specialties¹.

Rather than viewing these conclusions as dismissive of pre-matriculation anatomy coursework, this commentary offers a broader interpretation. Drawing on medical education literature and long-standing observations from decades of anatomy teaching, early anatomy exposure may function less as a performance accelerator and more as a formative experience that shapes professional identity. Students often make career decisions not on objective metrics alone, but on how confident and capable they feel within a discipline. This is an internal narrative shaped through exposure, mentorship, and informal laboratory conversations with faculty²⁻⁴. By reframing the value of pre-medical anatomy coursework away from score optimization and toward identity formation we refresh the conversation about how anatomy education supports specialty exploration.

Why the Question of Anatomy Prerequisite Persists

Questions surrounding the value of pre-professional medical anatomy coursework occur in academic hallways with regularity. Students ask whether it will help them succeed, advisors debate whether it is worth recommending, and faculty continue to wonder what role it plays in shaping future clinicians. The persistence of this question, despite decades of curricular reform, suggests that it is not merely about grades or admissions strategy, but about how learners orient themselves within medical training.

Recent findings examining the relationship between pre-professional medical anatomy exposure and medical school performance suggest that early anatomy coursework does not necessarily translate into significantly measurable advantages in medical anatomy grades or standardized examinations¹. However, interpreting these findings only through a performance viewpoint risks missing an important educational conversation. Perhaps

students who chose to enroll in anatomy courses prior to professional school did so to feel less anxious about beginning their formal training.

Performance Metrics Fail to Capture What (We Think) Matters

Medical education depends heavily on quantitative performance metrics such as grades (including pass/fail), standardized examinations, and percentile rankings to assess preparedness and milestones. These measures are necessary but should not be considered exhaustive¹. When it comes to specialty choice, particularly in anatomy-intensive fields, performance metrics often fail to capture the dimensions of experience that matter most to learners^{3,5}.

Across years of anatomy instruction, a consistent pattern has emerged: fewer students describe residency decisions in terms of numerical achievement during training. Instead, they speak about where they feel capable, where the material “clicks,” and where they experience a sense of belonging. This perceived competence, no longer linked to measured performance metrics, appears to guide residency selection and professional identity more strongly than scores alone^{2,3}.

Advising and the Medical Curriculum

Career advising programs in undergraduate institutions sit at a unique intersection between preparation for the formal medical curriculum and the quieter messages students hear from peers, applicants, and faculty about what matters. Patterns observed in recent work suggest that many students are interested in anatomy prior to medical school but encounter barriers ranging from cost and availability to direct discouragement^{1,5}.

Understanding the experiences of students who considered but ultimately chose not to enroll in anatomy prior to matriculation may provide important insight. It is also important to acknowledge that access to anatomy opportunities is not equally distributed across institutions, regions, or program types. These structural differences raise important equity considerations regarding which students, particularly those from historically underrepresented or non-traditional backgrounds, have the opportunity to benefit from early anatomy exposure.

These considerations may be particularly relevant to orthopedics, where early exposure through musculoskeletal laboratories, shadowing, research mentorship, and skills workshops often shapes confidence and a sense of belonging well before formal residency applications are submitted. In this context, access to orthopedic mentors and formative learning may have a greater influence on specialty selection than academic performance.

Anatomy as a Medical Mindset

In our prior study¹, exposure to anatomy was solely defined as completion of undergraduate anatomy coursework. Survey questions asked participants information on formal course enrollment and metrics. We neglected to inquire whether fourth year medical students were exposed early to anatomy via avenues such as orthopedic shadowing in turn creating a formative experience that could facilitate confidence in anatomy.

Anatomy coursework at a medical school level asks students to learn and apply an ancient and detailed language while absorbing a large volume of material in a fast paced environment. Completing an anatomy course prior to matriculation may help establish a sense of perceived worth as a medical student without the immediate pressures of mastery imposed by the formal medical curriculum^{2,4}.

Conclusion

Pre-professional medical anatomy coursework may not result in higher anatomy program scores, but its value should not be dismissed on those variables alone. Performance metrics, while useful, do not fully capture the relational and experiential dimensions that shape how students see themselves within medicine. Future conversations on specialty selection would benefit from looking beyond performance outcomes to examine how early anatomy exposure supports perceptions of belonging and professional career identities^{2,5}.

Acknowledgment

The author acknowledges Brianna L. Walter, MD for her foundational contributions to the original research that invited and informed this commentary.

References

1. Pratt RL, Walter BL. Effect of anatomical studies prior to medical school on medical school anatomy study success and residency choice. *BMC Med Educ.* 2024; 24: 815.
2. Sng JH, Pei Y, Toh YP, et al. Mentoring relationships between senior physicians and junior doctors and/or medical students: a thematic review. *Med Teach.* 2017; 39(8): 866-875.
3. Estes M, Garcia J, Ren R, et al. Analysis of anonymous student narratives about experiences with emergency medicine residency programs. *West J Emerg Med.* 2024; 25(2): 191-196.
4. Lester TR, Rassbach CE, Blankenburg R. What are the unique mentorship needs of fourth-year medical students applying to pediatrics residency? *Acad Pediatr.* 2020; 20(8): 1206-1212.
5. Alaqeel SA, Alhammad BK, Basuhail SM, et al. Investigating factors that influence residency program selection among medical students. *BMC Med Educ.* 2023; 23(1): 04602.