DATA SNAPSHOT

Anatomy Education in Medical School Curricula

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January 2026

Background: Anatomy Education's Evolving Landscape

Human cadaveric (donor) dissection for teaching and learning dates to at least 300 B.C. Consistently identified as the "gold standard" of anatomy education, dissection-based instruction facilitates a deep understanding of the structural and functional complexity and variation of the human body.[1,2] Technological innovation and medical education reform have led to substantive changes in medical school curriculum, particularly in the anatomical sciences.[3-5] Competency-based learning, time compression, novel instructional technologies (e.g., 3D printing, virtual reality [VR], augmented reality [AR], and web-based platforms), and the redefined role of the basic sciences in medical education have significantly transformed how medical students acquire anatomical knowledge.[4] In addition to curriculum changes, managing the high cost of procuring and maintaining donors and preventing unethical and illegal misuse of donor bodies (including unclaimed bodies) and anatomical specimens present challenges for anatomical educators.[6-9] To better understand the current state of undergraduate medical education (UME) anatomy curriculum, a survey was sent to MD- and DO-granting medical schools in the United States and Canada.[10]

About the Survey

The 2023-24 Curriculum SCOPE Survey, sponsored by the AAMC and the American Association of Colleges of Osteopathic Medicine (AACOM), contained 64 items, including contact information. Survey participation was voluntary, and all questions, excluding contact information, were optional. The SCOPE Survey focused primarily on the required UME curriculum in the 2023-24 academic year. Regarding anatomy education, the survey included questions about where, how, and with whom anatomy curriculum was covered. More information regarding the methodology of the survey is available at aamc.org/SCOPE.

The response rate for the SCOPE Survey was 88% (182 of 208) among MD- and DO-granting schools in the United States and Canada. Of 157 eligible U.S. MD-granting schools, 149 (95%) participated in the survey, and of 38 eligible U.S. DO-granting schools, 30 (79%) participated. Additionally, three (23%) of 13 eligible Canadian medical schools participated.

Key Finding 1: Use of anatomical donors is a widely used teaching approach in anatomy education.

When asked whether the medical school used anatomical donors, including use of human cadavers or human anatomical specimens, almost all (178 of 182, 97.8%) reported doing so in the 2023-24 period. While innovative technologies have emerged and managing anatomical donors requires resource-intensive protocols, the use of anatomical donors for anatomy education remains a widely employed method across medical schools.

Figure 1. Use of anatomical donors reported by medical school respondents.

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Most medical schools (127 of 178, 71.3%) incorporated both prosection, defined as the use of high-quality, pre-dissected cadaveric specimens prepared by an expert for demonstration, and dissection, defined as the purposeful, procedural exploration of human tissues and organs through physical cutting along defined planes, regions, and structures to facilitate student learning.[11,12] Few medical schools reported having a prosection-only or dissection-only approach to anatomy education; 20 medical schools (11.2%) reported a prosection-only curriculum, and 28 medical schools (15.7%) reported a dissection-only curriculum. Three medical schools (1.7%) did not respond to this survey question.

Key Finding 2: Most medical schools use a mix of prosection and dissection to teach anatomy, depending on the body system being studied.

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Figure 2. Use of prosection and dissection reported by medical school respondents.

In addition, data reveal that while there is variation depending on the body system, a mix of prosection and dissection is the most-used teaching approach across body systems. The body systems most likely to be taught with a prosection-only approach were neuroanatomy, the male reproductive system, and the female reproductive system. The body systems most likely to be taught with a dissection-only approach were the gastrointestinal system, endocrine system, and the cardiovascular system. While the number of medical schools reporting neither prosection nor dissection for a given body system was relatively low, the blood and lymphoreticular system (45 of 171, 26.3%) was the most frequently reported body system to be taught with neither prosection nor dissection.

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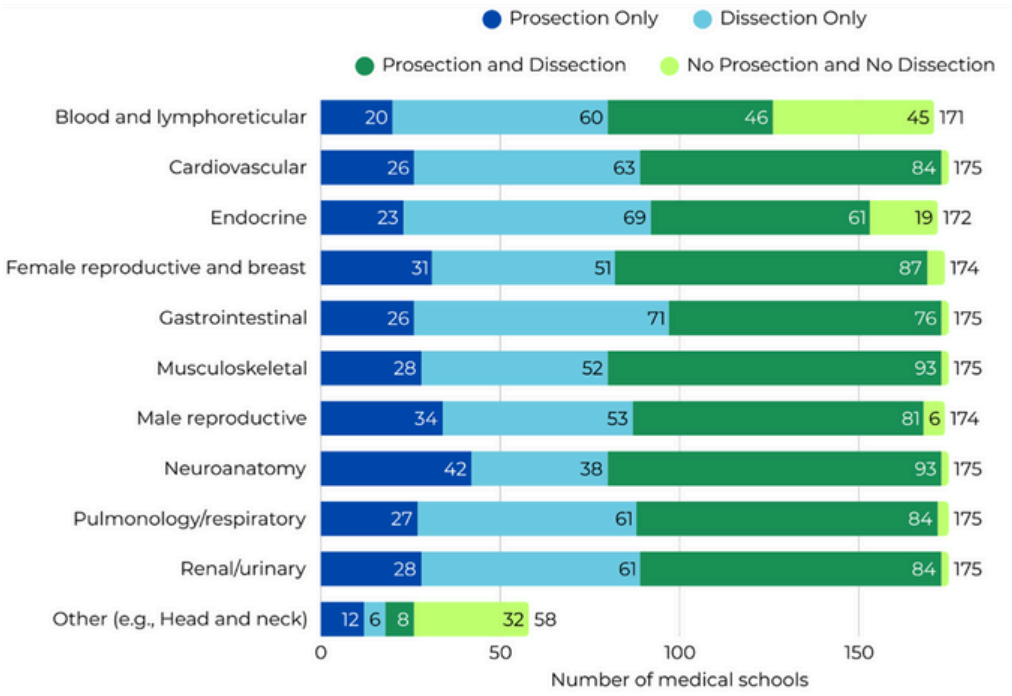
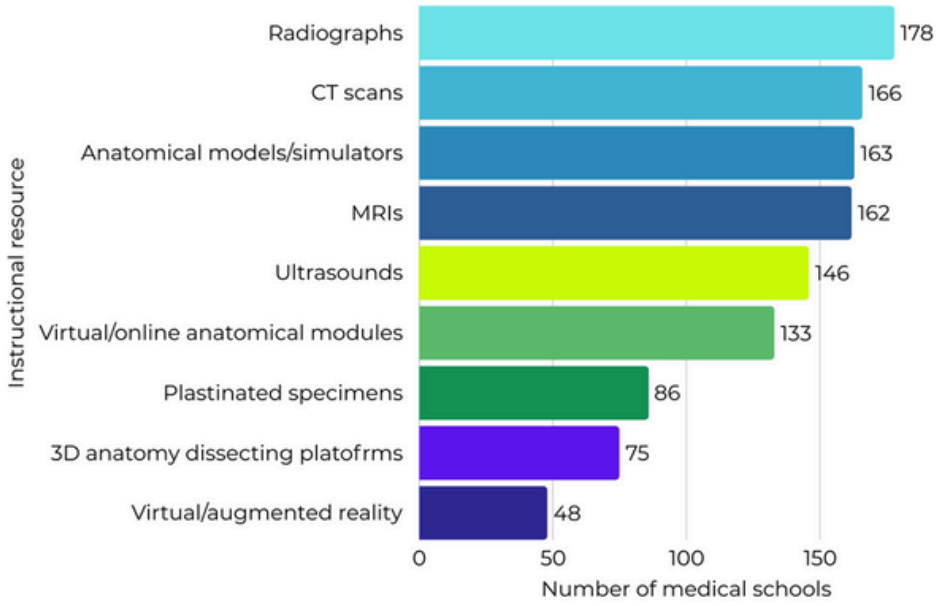
Figure 3. Use of prosection and/or dissection by body system.



Key Finding 3: Clinically relevant applications such as radiographs, CT scans, anatomical models and simulators, MRIs, and ultrasounds are used widely.

The resources most reported as utilized in teaching anatomy education were those of high clinical relevance, such as radiographs and CT scans, perhaps signaling the integration of basic science and clinical curriculum content. While technological advancements have resulted in the commercialization and third-party marketing of instructional products, such as VR, AR, and 3D dissecting platforms to medical schools on a large scale, results reveal that these resources were reported as of relatively lower use compared to radiological resources.

Figure 4. Instructional resources used for anatomy education.



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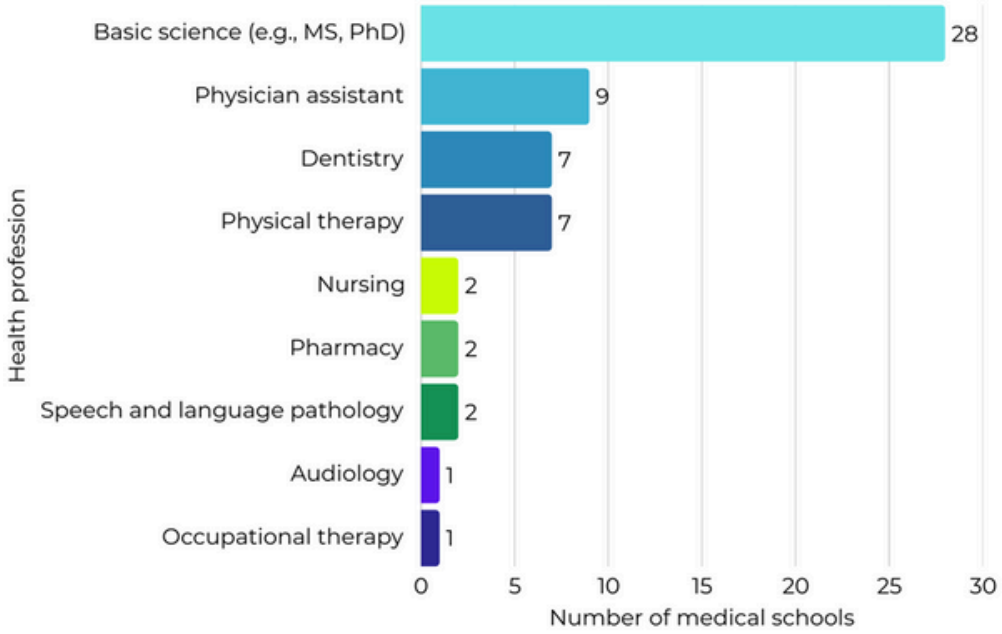
An analysis of qualitative responses from medical schools describing innovative or unique features of their anatomy curricula revealed additional details about instructional resource use. Of all 182 respondents, 99 (54.4%) provided information on their institution's innovative approaches to anatomy education. Among these, 42 (42.4%) reported incorporating variations of medical image-based instruction, and 31 (31.3%) described innovations in integrating donor-based anatomy with imaging modalities. Sixteen institutions (16.2%) emphasized the innovative inclusion of point-of-care ultrasound in their anatomy teaching, highlighting opportunities for early and frequent practice in a low-stakes learning environment. Notably, 19 (19.2%) reported the integration of nontraditional, discipline-independent skills as an essential component of their anatomy instruction. These skills, including bioethical reasoning, teamwork, patient consent and autonomy, humanism, and altruism, represent core competencies fundamental to patient care and clinical decision-making.

Key Finding 4: Interprofessional teaching of anatomy may be an untapped opportunity for resource conservancy and enhanced learning.

Relatively few medical schools reported interprofessional learning in anatomy education (49 of 180, 27.2%). Of the 49 medical schools who reported interprofessional learning in anatomy education, most (28, 66.7%) reported co-learning occurring among MD- or DO-students and basic science graduate students (e.g., MS, PhD). Substantially fewer instances of interprofessional anatomy education with MD- or DO-students were reported among other health professions such as physician assistant (9, 21.4%), dentistry (7, 16.7%), physical therapy (7, 16.7%), and others.

Figure 5. Interprofessional anatomy education with medical students and other health professions by discipline.



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Implications for the Future

While medical schools have experienced significant changes in anatomy education over the past two decades, survey results highlight the continued incorporation of anatomical donors in medical curricula. Medical schools have incorporated innovative approaches to teaching anatomy by framing basic science through a clinical lens. Pairing medical imaging with anatomy provides proof of concept to this curricular endeavor. It has been shown to improve anatomical knowledge and user confidence and skill, while also being perceived as an effective instructional strategy by learners.[13-15] Notably, despite this progress, opportunities remain to enhance interprofessional learning within anatomy education.[16] Expanding these initiatives represents an underutilized opportunity to embed foundational competencies across the curriculum; prepare students for the collaborative, team-based nature of modern health care; and improve resource efficiency. The SCOPE Survey indicates that medical schools continue to emphasize essential anatomical knowledge and skills while strengthening clinical relevance and incorporating emerging technologies. In addition, accessing and contributing to shared resources, such as the Building Better Curriculum webinar series (e.g., Teaching Trends in Anatomy Education in Modern Medical Curricula, Bridging the Gap: Integrating Basic Science and Clinical Decision-Making in Medical Education), MedEdPORTAL® (e.g., Integrating Basic and Clinical Sciences Using Point-of-Care Renal Ultrasound for Preclerkship Education, The Clinical Anatomy and Imaging Laboratory: Vertical Integration in the Preclerkship Curriculum), and others can help advance both individual medical school programs and the field nationally.

Limitations

Participation in the SCOPE Survey was voluntary, and all questions and topics, aside from contact information, were optional. The AAMC does not solicit information about why respondents do not respond to a given question or topic. It cannot be inferred that medical schools that did not respond to a given item did not cover a given topic or offer a given service in their curricula.

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Use of Report

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