

The Value of the Donated Body: Why Cadaveric Training Remains Irreplaceable in Surgical Education

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In the recent past, the traditional model of surgical training was encapsulated in the famous mantra: “See one, do one, teach one”. This pragmatic approach assumed that observing a single procedure was sufficient to perform it under supervision and eventually teach it to others the third time. However, in today’s complex clinical landscape marked by increasing patient safety demands, technical sophistication, and medico-legal considerations this approach is no longer sustainable. Furthermore, in the aftermath of the coronavirus disease 2019 (COVID-19) pandemic [1], most healthcare systems face limited operating theater time and therefore reduced opportunities for young surgeons to be directly involved in surgical procedures.

Modern surgery requires more than courage and dexterity; it demands precision, advanced skills, and, above all, a structured, safe, and comprehensive training pathway before operating on a living patient [2–4]. In this evolving scenario, simulation-based training has taken center stage. A wide range of tools such as 3D-printed anatomical models, synthetic and plant-based simulators, virtual reality platforms, and immersive environments has revolutionized the educational process, enabling progressive, modular, and standardized skill acquisition.

These simulators are undeniably valuable. They provide young surgeons with the opportunity to repeat procedures in controlled environments, build confidence in basic technical skills, and reduce risks during the early phases of the learning curve. However, despite their increasing realism and technological refinement, there is one element they cannot fully replicate: the human body itself.

Cadaveric training remains, to this day, the only environment where a surgical trainee can encounter real human anatomy in all its complexity, depth, variability, and tactile authenticity [5]. Only on a human body can one truly learn to respect anatomical planes, handle tissues delicately, recognize deep structures by touch, and navigate the surgical field with awareness and responsibility. The realism of

human anatomy—its asymmetries, variations, and interrelations is often lost in synthetic models, regardless of their technological advancement.

In this light, the donated human body, used for scientific and educational purposes, holds immense value, not only for the surgeon in training but, indirectly, for the patients they will eventually treat. Much like organ donation for transplantation, the act of donating one’s body to medical science can bring concrete and lasting benefits to countless individuals. It equips future physicians with the competence, confidence, and conscientiousness to deliver better care.

Nevertheless, despite its proven value, cadaveric training remains scarcely accessible in many parts of the world, including several European countries. Regulatory, bureaucratic, logistical, and infrastructural barriers often hinder the establishment and expansion of such programs. Access is frequently restricted to a handful of workshops per year, often with limited seats, high costs, and short durations. This scarcity fosters a profound inequality in training opportunities an unacceptable condition in a field that aspires to excellence, equity, and patient-centered care.

It is time for a cultural shift. Institutions, universities, scientific societies, and we as clinicians must collectively advocate for renewed awareness of body donation. Far from being a morbid or antiquated practice, donating one’s body for medical education is a noble and contemporary form of altruism. We need public awareness campaigns and educational initiatives that inform citizens clearly and respectfully about the possibility of donating their bodies to science after death. This decision, made freely and consciously, is a legacy with the potential to save and improve lives.

However, increased awareness alone is not enough. Healthcare and academic systems must be equipped to receive these donations, manage them with the utmost dignity, and utilize them in ethically responsible, high-quality educational programs. Anatomical dissection labs must be modern, well-funded, and integrated into the broader medical training ecosystem. Hospitals, universities, and local authorities must collaborate to create accessible and sustainable cadaveric training pathways.

Moreover, those participating in cadaveric training should be educated not only technically but also ethically. A ca-

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daver is never a mere object it is the body of a person who, in their final act, chose to continue being useful to others. Every incision, every surgical gesture, should be performed with respect and gratitude. Proper rituals of acknowledgment and institutional guidelines on respectful behavior are not just symbolic; they reinforce the ethical framework within which this unique form of learning takes place.

The responsibility to uphold and promote this training modality is collective. Scientific societies can play a pivotal role in lobbying for legislation that facilitates anatomical donations and supports educational programs. Medical schools and residency programs must include structured cadaver-based training modules as a mandatory part of the curriculum. Governments and policymakers should recognize the importance of this educational resource and support it with funding, infrastructure, and clear, respectful regulations.

In conclusion, the donated human body is not merely a learning tool it is a symbol of trust in the future of medicine. It is a bridge between generations: between those who lived and those who will live, between those who give and those who heal. As technology advances and simulation becomes increasingly sophisticated, we must not forget that nothing will ever resemble the human body more than the human body itself.

With deep gratitude to those who choose to donate their bodies to science, we must commit to making this extraordinary gesture more widely known, more accessible, and more central to the education of tomorrow's surgeons.

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Not applicable.

Author Contributions

RD, GM: writing. PF: critical review. All authors contributed to the conception and have been involved in revising it critically for important intellectual content. All authors gave final approval of the version to be published. All authors have participated sufficiently in the work to take public responsibility for appropriate portions of the content and agreed to be accountable for all aspects of the work in ensuring that questions related to its accuracy or integrity.

Ethics Approval and Consent to Participate

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Conflict of Interest

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