AlensiaXR

The hidden world of human anatomy revealed.

HoloAnatomy® and HoloAnatomy® Neuro, now running on the .NEXT™ platform, are transforming how human anatomy is learned by bringing the body to life in immersive, interactive 3D. With collaborative exploration and the ability to visualize hidden structures, these next-generation tools empower learners to gain deeper understanding and achieve better outcomes.

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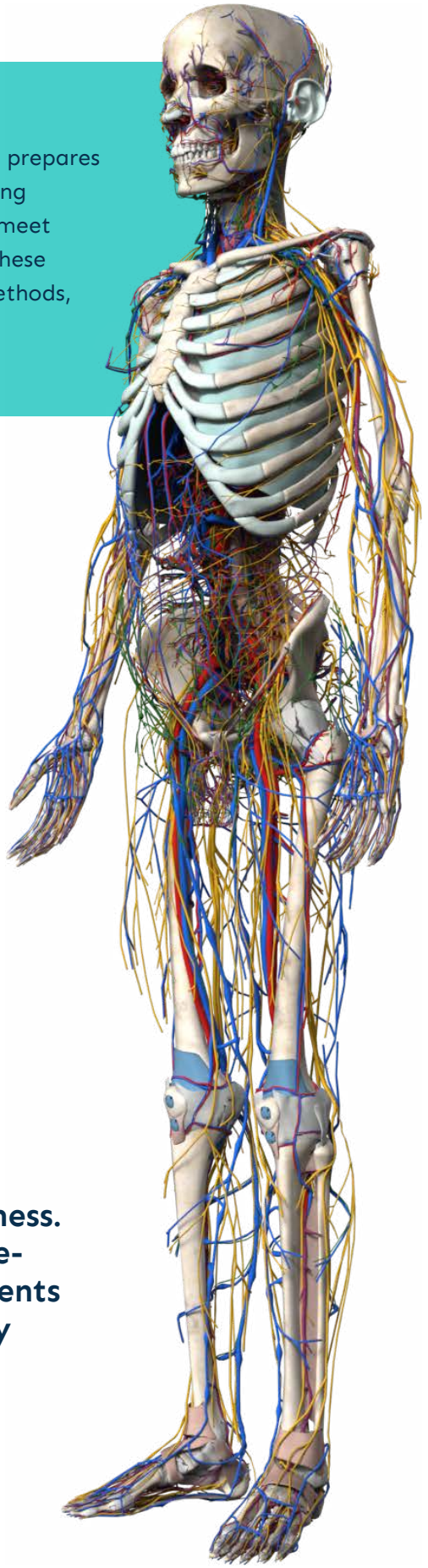
How is your anatomy curriculum meeting the needs of students?

Institutions are seeking collaborative, innovative, and effective ways to elevate anatomy education and better prepare tomorrow's healthcare professionals.

Whether you're instructing the next generation of doctors, nurses, dentists, podiatrists, or other allied health professionals, teaching anatomy at a is hard. For years, institutions have primarily relied on diagrams, textbooks, and cadaver dissection to help students understand various organs and systems. But these methods often fail to provide complete pictures of intricate 3D structures. Cadaver labs are costly and offer limited accuracy—embalmed bodies differ from living anatomy, and tiny structures like lymph nodes, ganglia, and nuclei are hard to observe. Meanwhile, 2D scans and makeshift teaching aids, such as paper plates and yarn, feel inadequate for complex topics like neural pathways.

Today's students are eager for immersive, collaborative learning that prepares them for demanding healthcare careers. Tech-savvy and adept at using extended reality tools, they expect modern, digital-first solutions to meet the challenges of their academic and professional journeys. Despite these expectations, many institutions remain tied to outdated teaching methods, struggling to meet the needs of a new generation of learners.



Spearheading the future of human anatomy learning.

Enter HoloAnatomy® and HoloAnatomy® Neuro

Anatomy is complex, and few technologies have effectively helped students understand spatial relationships between structures or move beyond rote memorization to lasting comprehension. It's not always enough to be told verbally about the configuration of the ureteric blood supply as they pass through the abdomen and pelvic cavities or to follow a pain signal from the foot to the brain on a 2D diagram. Recognizing these challenges, a private research university in Cleveland, Ohio, to create the HoloAnatomy learning platform.

"HoloAnatomy represents the future of medical learning," said AlensiaXR CEO Mark Day, who brings a wealth of experience from previously leading the global Microsoft Mixed Reality business. "Now, institutions can reduce the expensive, time-consuming task of obtaining cadavers, and students can enter a world of new possibilities where they learn faster and transcend the classroom with unprecedented collaborative potential."

—Mark Day, CEO, AlensiaXR

HoloAnatomy features

- **3D Anatomical Library:**
  Access more than 7,000 intricate 3D anatomical art assets across 15 systems available for female and male models. Explore the human body by systems, regions, specific organs, or any combination.

- **Desktop Hub:**
  A powerful desktop application that lets instructors design immersive anatomy experiences, create tailored presentations, and manage classes, leveraging a rich library of anatomical art and tools.

- **XR Viewer:**
  An immersive XR application that brings 3D anatomical presentations to life, enabling learners to explore, scale, and share anatomy in a collaborative environment.

Pioneering the Future of Medical Education: A Bold Partnership

In 2014, Case Western Reserve University (CWRU) and Cleveland Clinic joined forces to create the Health Education Campus, a state-of-the-art facility designed to transform interdisciplinary education. This groundbreaking partnership sought to foster collaboration among medical, physician assistant, nursing, and dental students, united by a shared vision of innovation and excellence in teaching.

The Interactive Commons team at Case Western Reserve University, comprising 3D medical artists, developers, anatomists, and instructional designers, developed HoloAnatomy® to revolutionize anatomy education through holographic imagery. Drawing on a legacy of impactful research, CWRU collaborated with expert anatomy faculty, surgeons, and clinicians to create a cutting-edge tool that combines intuitive learning with cost-effective solutions.

Drawing on experts for anatomical precision

The decision to feature meticulously hand-drawn anatomy in HoloAnatomy® reflects Case Western Reserve University's (CWRU) commitment to advancing anatomy learning. Human anatomy varies significantly and relying on cadavers or 3D cadaveric representations limits learners to the unique idiosyncratic features of the body being examined. Cadaver dissections often fail to reveal small or delicate structures completely, and normal anatomy is frequently obscured by disease or age-related changes.

To address these limitations, CWRU collaborated with medical experts and skilled 3D artists to create over 7,000 highly detailed, anatomically precise representations of the average human male and female body. These detailed illustrations offer unmatched clarity, visibility, and comprehensiveness that real-life sources cannot achieve. This approach enhances learning and review for students, educators, and professionals at every stage of their careers

Transforming the way medical students learn human anatomy

To put these images to practical use in the hands of instructors, the Interactive Commons team created applications and tools to allow faculty to create their own presentations, customize images and labels, and deliver group instruction to students, all according to their desired curriculum. In 2023, AlensiaXR® was spun off from CWRU to make HoloAnatomy broadly available to institutions worldwide.[1] Based on multiple pilot studies, medical students are now learning anatomical content almost twice as fast compared to cadaver dissection. A preliminary study also demonstrated that supplementing with HoloAnatomy enabled students to retain information better after finishing a course.[3]

Medical students are eager to experience anatomy through a new lens.

Medical students are expected to absorb and retain immense amounts of previously foreign information at dizzying speed. Technology that empowers students to engage with anatomical systems and structures outside of a limited lab environment can ignite student imagination, fast-track understanding, and save invaluable hours of frustration, study, and review time.

"With anatomy, there is no way to circumvent the amount of time you have to dedicate to learning what is essentially an entirely new language. Anatomy is a subject that requires daily practice, and HoloAnatomy Software allowed me to do just that."

—Madeline Beckman, CWRU Medical Student, Class of 2022

"Making HoloAnatomy Software available at an undergraduate level not only makes high-quality anatomy education more available to everyone, but it could really help students like me jumpstart their journey to become a doctor."

—Razaq Durodoye, CWRU MSTP Student, Class of 2027

"HoloAnatomy Software extends my ability to integrate new information - more than if I were limited to time with a cadaver. During my dissection labs, I had to assume I was following along correctly; you can't sit in a cadaver lab with your laptop out! In HoloAnatomy Software, everything is color-coded or labeled, so there is less confusion."

—Talia Burstein, CWRU Medical Student, Class of 2023

HoloAnatomy® Neuro: Making the invisible visible.

The central nervous system, with its intricate and extensive network, has long been a challenge to fully comprehend due to its complexity and size. HoloAnatomy Neuro overcomes these challenges to enable improved learning outcomes with 3D collaborative immersion tailored to neuroanatomy curricula.

The world's most detailed 3D visualization of the central nervous system.

HoloAnatomy Neuro introduces the world's most detailed 3D visualizations of the central nervous system, integrated seamlessly into the HoloAnatomy platform. Learners can differentiate between 21 neural pathways, explore seven distinct spinal cord cross-sections, and examine eight detailed brainstem cross-sections. These visualizations offer a comprehensive view of spatial relationships between brainstem nuclei, delivering an unmatched depth of understanding for neuroanatomy students.

Transforming Neuroanatomy Education

- **Unprecedented 3D Immersion:** Visualize the complex central nervous system in stunning 3D, providing an unmatched learning experience that goes beyond textbooks, 2D images, and cadavers.
- **Innovative Learning:** Utilize advanced features like customizable slideshows, detailed 3D cross-sections, and real-time collaborative tools to foster a deeper understanding and teamwork.
- **Holistic Perspective:** Trace entire neural pathways and observe their connections within the Central Nervous System and Peripheral Nervous System, offering a complete and integrated view of neuroanatomy.

>> Improve comprehension with immersive collaborative learning

Revolutionizes immersive education through real-time collaboration and simultaneous multi-scene exploration, fostering engagement and teamwork.

>> Researched Learning Benefits

The only immersive medical learning platform with peer-reviewed research finding anatomy study time reduction by up to one-third, doubling concept mastery speed, and retention improvement up to 40%.[3]

>> Reduce dependence on costly cadavers

Replace or augment expensive cadaver labs with mixed reality classrooms and avoid the disadvantages of cadaver dissection.

Empowering deans and faculty to revolutionize medical learning

Institutions are transforming anatomy learning by reducing costs and complexity while enhancing collaboration and learning outcomes. With innovative mixed reality technology, HoloAnatomy® empowers faculty to present anatomical content in engaging, efficient, and impactful ways. HoloAnatomy and HoloAnatomy Neuro empower faculty to present anatomical content in the most efficient and engaging manner possible. Instructors can build custom lesson plans, explore anatomy by system, region, organs, or any combination, and display male and female models side-by-side for comparative learning. With just Wi-Fi and an XR device, instructors can support synchronous in-person and remote learning, enabling seamless collaboration for any class size.

> **"We could not be more pleased. Our students very much love HoloAnatomy Software. This generation enjoys this modality tremendously, and this has helped make the anatomy topic stick."**
>
> **—Dr. Stuart Flynn, Founding Dean, Anne Burnett Marion School of Medicine at Texas Christian University**

Educational cadavers are an expensive resource that often fails to deliver desired learning outcomes.

Educational cadavers are costly and often fail to deliver optimal learning outcomes. The average cost of a full human cadaver ranges from $3,000 to $5,000[2], not including additional expenses for personnel, storage, HVAC, and building dedicated cadaver labs. Despite this investment, cadavers have limitations:

- Pathologies and age-related changes obscure key structures.
- Dissection skills vary among students.
- Certain systems, like neural tracts, are impossible to study effectively through dissection.

In contrast, adopting holographic technology eliminates these barriers. Institutions save on operational costs while providing students with more comprehensive and accessible anatomical views.

Shared group experience

HoloAnatomy® redefines the group dissection experience. Supporting multiple simultaneous in-person and remote connections, the platform enables instructor-led, collaborative exploration of anatomy without the physical limitations of cadavers.

Through 3D visualization, students gain unprecedented access to foundational structures, including intricate systems like the central nervous system, offering a learning experience far beyond what cadavers can provide.

Improve comprehension with 3D immersion

Pave the way for a new kind of understanding with immersive learning.

Traditional methods like textbooks and 2D diagrams fall short in capturing the complexity and depth of the human body. They can lead to disengagement, prolonged study hours, and reduced retention.

Immersion changes the game by offering an intuitive, interactive way to explore human anatomy. With immersive 3D visualizations, students can rotate, zoom, and isolate structures for clearer understanding. This hands-on experience enhances engagement, accelerates learning, and deepens comprehension.

Lead the future of medical learning

Demonstrate an institutional commitment to furthering educational excellence through innovation

Staying competitive in medical education means offering innovative solutions that attract top students and faculty. Students seek institutions that provide advanced learning tools and prepare them for lifelong careers. Faculty look for opportunities to teach effectively and meaningfully with modern frameworks.

Mixed reality exemplifies a commitment to educational excellence. Research shows students who supplement dissection with mixed reality retain 40% more information eight months later than those who only dissect. This forward-thinking approach sets institutions apart as leaders in anatomy education.[3]

Customizable Curriculum for Every Instructor's Expertise

HoloAnatomy® empowers instructors to design and deliver immersive curricula tailored to their expertise. Choose from over 7,000 detailed, artistically rendered anatomical structures and create a customized lesson plan that aligns with your institution's objectives. Using XR devices, instructors can present these images in stunning 3D, enabling collaborative, interactive learning experiences that engage students like never before.

Flexible, Comfortable Learning Anytime, Anywhere

HoloAnatomy's untethered XR technology allows instructors and students to learn where and when it works best. All you need is an XR device, Wi-Fi, and open space to transform any environment into a cutting-edge anatomy classroom.

Unlike traditional VR headsets, which can cause discomfort due to compression and motion sickness, HoloAnatomy's mixed reality approach ensures students can study comfortably for extended periods, promoting deeper focus and retention.

HOLOANATOMY® STORIES

"What I saw before me was the very thing that has been in my mind's eye since I became an expert in neuroanatomy."

—Dr. Cameron Jeter, Professor and Chair, Department of Biomedical Sciences, Kansas College of Osteopathic Medicine

"When students first experience HoloAnatomy, you can feel the electricity in the room... and professors feed off those feelings of excitement. HoloAnatomy is like the Google Maps of the human body."

—Anna Campbell, Ph.D., Associate Professor, Chair, Anatomy Department at ATSU-SOMA

"From zero to having competent faculty ready to integrate the system into their curriculum in three days is remarkable. Most systems take multiple weeks to onboard. The collaboration was unique to our experience with other service providers."

—Dr. Michael O'Leary, Dean of the Faculty of Applied Health and Community Studies

"It's exciting to be able to provide our students with the same mixed-reality learning that students at a top medical school have access to. This world-class technology enhances the tools we already offer to our students, and fits seamlessly into our college-preparatory curriculum."

—Kathryn Purcell, Saint Joseph Academy President

Watch a HoloAnatomy Lesson at Saint Joseph Academy

Anatomy Learning Reimagined.

Revolutionary Tools. Expert Insights. Unprecedented Outcomes.

When groundbreaking technology meets the expertise of educators, the possibilities are limitless. HoloAnatomy® and HoloAnatomy® Neuro represent the future of human anatomy education, combining innovative mixed reality tools with expert-designed solutions to transform learning into a collaborative, immersive, impactful experience.

Take the next step.

Visit our website to learn more or contact us to discover how HoloAnatomy can revolutionize anatomy education at your institution.

Learn more

Book a Demo

[1] Case Western Reserve University Launches AlensiaXR | the daily
[2] The Body Trade | Reuters
[3] Research | AlensiaXR

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