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### **Seeing Anatomy**

214

By Nicole Trombley & Rachelle Clauson Massage & Bodywork Magazine Digital Extra

### **GALEN & VESALIUS**

Two men who had to see it for themselves.

### **Medieval Anatomy**

In the Middle Ages, teaching anatomy was done as a trio.

### SEEING in 3D

Images that help us understand our 3D architecture

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with our thanks

The images from the anatomy lab would not have been possible without the gracious gifts of the donors and their families to whom we are deeply grateful.

- Rochelle and Nicole





Anatomy explorations for Bodyworkers

Dear Anatomy Lover,

We're so excited to collaborate on AnatomySCAPES together and share this work with YOU. We want more bodyworkers and movers to have access to both the anatomy lab *and* the latest research on fascia.

For us personally, studying anatomy — and fascial anatomy in particular — has taken our understanding of the human body so much deeper. And more importantly to us as bodyworkers, our touch skills have been taken to the next level. And our clients have noticed.

The anatomy lab has been the domain of a select few for centuries. That is shifting. And we get to be part of a generation that is changing who gets to do anatomy. We're committed to creating online and in lab educational opportunities that make this work more available. We hope you'll join us!

Love, Rachelle & Nicole

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ANATOMY FOR TOUCH Seeing Analonia

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# Galen & Vesalius

Claudius Galen (129-216 CE) and Andreas Vesalius (1514–1564 CE), two physicians who grew up more than a thousand years apart, often have their names written next to each other in history for their accomplishments in medicine, as well as for how the work of one crushed the teachings of the other. But were they really that different from each other? Or were they both driven with the same curiosity and ability to push beyond the limitations they were born into to make huge leaps in understanding that still impact us today?

Galen of Pergamon was only fifteen years old when he began his medical studies in 148 CE. Nine years later he accepted a position as the chief physician to the gladiators. Human dissection was made illegal in Rome and its provinces in 150 CE, which meant this position provided him with unique opportunity to study human anatomy in the flesh. After his work with the gladiators, Galen continued to study, but had to rely on dissections of Barbary Macaque monkeys, sheep, goats, pigs, dogs, bears, and on at least one occasion an elephant.

Though many errors were later found in his writings, Galen was an astute observer and made many profound contributions to his field, including proving that urine was formed in the kidney and not the bladder, observing that arteries carry blood rather than air, describing the valves of the heart, and discovering the discreet characteristics of seven pairs of cranial nerves. Galen is considered one of the most accomplished of all medical researchers of antiquity.

Andreas Vesalius was born in 1514 in Brussels and began his arts studies the University of Paris, and then onto Padua, Italy where he obtained the title of Doctor of Medicine in 1537. The precepts of Galen still dominated the field and, even though they were almost entirely based on dissection of animals, his texts were used to accompany teaching human dissections, with any divergence from the text being dismissed as an anomaly.

Vesalius grew increasingly frustrated with the inaccuracies that were blindly accepted and refused to continue with the accepted knowledge. Rather than relying on flawed texts, he pursued first-hand knowledge through trusting what he saw with his own eyes in the dissection lab.

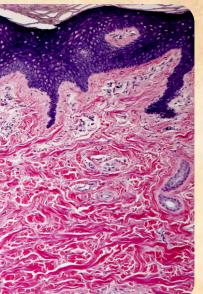


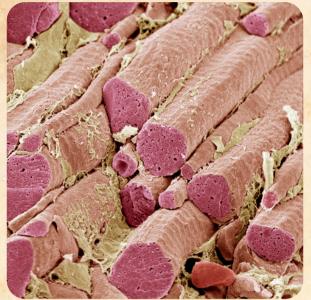
1543, Vesalius published his book De humani corporis fabrica (On the Fabric of the Human Body). He wisely employed artists to make accurate drawings of the human body bringing his work into clear view to be seen and read far and wide. Vesalius broke the old dogma that had crippled the evolution of medicine for centuries. Ironically he did so with the same passionate pursuit and need to see and record first hand knowledge that Galen demonstrated. Both left behind enormous bodies of literary work that have changed our understanding of human anatomy and hold huge places in history thanks to their willingness to challenge the norms and see for themselves. ∞





Renaissance anatomist Andreas Vesalius ushered in a new era of Anatomy. First published in 1543, De humani corporis fabrica libri septem was based on his careful dissections of human cadavers. The book contained detailed descriptions and drawings that greatly advanced the science of anatomy.





# **Seeing in 3D**







Though used primarily for diagnostics, we can learn a lot from imaging advancements in research and medicine like histology slides, electron microscope images, X-Rays, MRI, CAT scans, PET scans, and ultrasound that help us see through the body's 3D architecture. Plastinated, whole body dissections found in the Body Worlds museums provide three dimensional, real anatomy for us to study up close outside of the dissection lab.





## THE ABMP PODCAST

### **EPISODE 415**

# SEEING Anatomy YOUR PRACTICE IN 3D - PART 1

The challenges of seeing anatomy in three dimensions



with Rachelle Clauson & Nicole Trombley

# Medieval Anatomy

IN THE MIDDLE AGES, TEACHING ANATOMY WAS DONE AS A TRIO.

### 1. Lector

THE PROFESSOR OF ANATOMY WHO READS THE TEXTBOOKS ALOUD.

#### 2. Ostensor

THE ASSISTANT WHO POINTS TO THE PART OF THE CADAVER BEING DESCRIBED.

### 3. Sector

THE BARBER TASKED WITH THE VULGAR JOB OF PERFORMING THE DISSECTION.



### Vesalius the One Man Show

VESALIUS HARSHLY CRITICIZED THIS MODEL, DESCRIBING AS: "[...] THE HATEFUL METHOD BY WHICH ONE DISSECTS THE BODY AND ANOTHER DESCRIBES ITS PARTS: THE FIRST, PERCHED ON A PULPIT LIKE A CROW, HAUGHTILY REPEATING IDEAS THAT HE DIDN'T LEARN DIRECTLY FROM THE CADAVER, BUT THAT HE READ IN OTHER'S BOOKS" (VESALIUS 1543)



### ... in Person through Dissection

Based on our experiences, personally, and from the descriptions of many of our students and colleagues, we have come up with four MAJOR ways being in the lab changes the way you SEE anatomy. And, seeing differently means understanding differently, which affects the way we TOUCH.

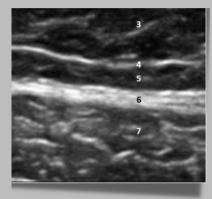




X-RAY

MRI

PET SCAN



ULTRASOUND

MICROSCOPE HISTOLOGY SLIDES



ELECTRON MICROSCOPE

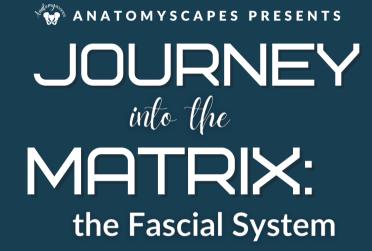


### ... in Research & Medical Practice

Though used primarily for diagnostics, we can learn a lot from imaging advancements in research and medicine like X-Rays and mammograms that help us see through the body's 3D architecture.

MRI, CAT scans, PET scans, and ultrasound show the body in cross-section which helps inform us how everything fits together as a whole. And zooming in on the micro world, stained tissues in histology slides and electron microscope images form a bridge into physiology, helping us understand how things work.





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FOR HANDS-ON PROFESSIONALS







## **LEARN WITH US!**

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- Dissection Discovery
- Hands-on Application



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### ...without the Dissection Lab

Modern medical illustrations have continued to improve over time with increased detail, better accuracy, and are often accompanied by additional learning tools like labels and color coding.

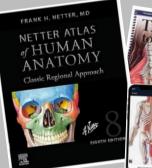
Innovative anatomy apps for our digital devices come with features of pinch to zoom, rotate and remove which can help our 3D perceptions. Plastinated, whole body dissections found in the Body Worlds museums provide three dimensional, real anatomy for us to study up close outside of the dissection lab, and dissection videos that are becoming more available across disciplines.



MEDICAL ILLUSTRATION



PLASTIC





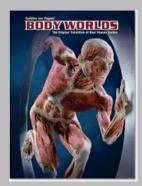
ANATOMY ATLASES & DIGITAL APPS



PHOTOGRAPHS & VIDEOS OF DISSECTION



CLAY MODELS



PLASTINATION



from the authors

Congratulations on going on an adventure in human anatomy! We are thrilled to be a part of your education and learning process.

Here at AnatomySCAPES, we are dedicated to providing you with resources that will make your learning and understanding of human anatomy a rich and stress free experience. That's why we have plenty of amazing images and colorful writing to ensure that your journey is as informed and exciting as possible! We have created the educational materials we wish we had when we began our journey. Welcome!

Nicole & Nicole TROMBLEY Rachelle Clauson



