




In-Depth Learning

The Importance of Cadaver Anatomy Lab Experience

By Joseph Muscolino, DC



It is my belief that the fundamental basis for all orthopedically oriented hands-on manual and movement therapy, whether it is assessment or treatment, is a firm understanding of anatomy. This is true for palpation or orthopedic assessment testing, soft-tissue manipulation massage, stretching, or joint mobilization treatment.

With a firm knowledge of anatomy (*structure*) we can figure out physiology (*function*). And once physiology/function is understood, we can then reason through and understand pathophysiology; from there, we can critically think to determine the appropriate assessment and treatment.

IT ALL STEMS FROM ANATOMY

Unfortunately, most of us learn anatomy with the intended goal of passing exams, after which we promptly forget much of what was learned as we turn our attention to the more appealing subjects of pathology, assessment, and treatment. This is somewhat understandable. After all, anatomy is little more than a naming game in which we assign names to all the structures of the body. And this process requires memorization, which is not exactly exciting; in fact, it can be quite boring.

Yet, learning anatomy is the dues we must pay in order to truly learn and understand physiology, pathophysiology, assessment, and treatment. In other words, if we first memorize anatomy, then we can figure out all the rest. But if we do not first learn our anatomy, we are doomed to memorize physiology, pathophysiology, assessment, and treatment. Not only is this labor-intensive, it also encourages rote memorization as the approach to our manual/movement therapy practice, which then encourages our tendency toward looking for cookbook recipe treatment techniques. But armed with a fundamental knowledge of anatomy, we are empowered to critically think through the mechanism(s) of our clients' conditions. This then allows us to creatively apply our hands-on assessment and treatment techniques.

So even though memorizing anatomy might be onerous, once done we are armed with a knowledge and understanding of the structure of the body and a language we can use (kinesiology terminology) to discuss and understand all the function, altered function, assessment, and treatment we will need to know to appropriately treat our clients.

HOW TO BEST LEARN ANATOMY?

How can we best learn anatomy as the basis for our successful manual/movement therapy practices? There are several keys:

Excellent Anatomy Instructor

The best way to learn anatomy is to have an anatomy instructor who can not only clearly explain the anatomy we are learning, but can also make it interesting and applicable by drawing connections to the patterns of how the body is structured. Also helpful is the anatomy teacher who understands manual/movement therapy and can explain how the anatomy knowledge being studied at the moment will relate to hands-on assessment and treatment skills that will be learned later.

Excellent Textbook

Another key is to have a textbook that, like the teacher, both explains the anatomy clearly and also relates it to the applications of the hands-on manual and movement therapy skills that will be used later in practice.

Quality Digital and Other Resources

A third key is to take advantage of all the other resources now available to the student and therapist. This includes video resources that can help make anatomy visual for the manual and movement therapy student/therapist. Another excellent learning tool is to attend an Anatomy in Clay workshop (or other such workshop in which the student makes the muscles of the body in clay and applies them to a miniature skeleton). This adds the component of being kinesthetic, which is so valuable given how many people in the fields of manual and movement therapy are kinesthetically oriented. It also requires being creative as you actually form and create the muscles you apply to the skeleton.

Plastination Cadaver Exhibits

It is also possible to visit plastination cadaver exhibits. These exhibits have the advantage of having cadavers that have been beautifully (and often artfully) dissected and presented. The disadvantages of plastination exhibits are that there is no instructor present for detailed explanations of the cadaveric anatomy, the fascial tissues are often dissected away, and palpation is not possible.

Cadaver Labs

No anatomy learning experience can rival the knowledge one gains by attending a cadaver lab workshop in which the participant can actually see and work with the true three-dimensional form of the human body. There are generally two types of cadaver lab experiences: observational labs and dissection labs.

Observational Cadaver Labs

Both observational and dissection cadaver labs are excellent, but of the two, observational cadaver labs are far easier to attend and require less investment of time and money. In observational labs, participants simply observe the body that has already been dissected by others, often students at the university where the cadaver lab is located. All the better if the participants are allowed to also palpate the dissected structures, because this adds the kinesthetic component so valuable to learning. Observational cadaver labs are usually anywhere from 4–8 hours and can be done in one day.

Dissection Cadaver Labs—The Gold Standard

The gold standard cadaver lab experience is attending a cadaver dissection lab workshop in which participants perform the actual dissection. Of course, this is done under the supervision of experienced instructors who not only know anatomy but also have expertise in guiding the dissection process. By virtue of the time needed to perform the dissection, these labs are much more time intensive and usually require the commitment of five or six days if the entire body is dissected. Consequently, these labs are also costly. However, they are well worth the expense given the knowledge base and increased understanding the student gains from the experience. The beauty of cadaver dissection labs is that the participant is able to actually uncover and discover the structures of the body as the workshop progresses. Further, the time spent allows for reflection, application, and appreciation of the inter-relationships between the structures being dissected.

Fresh-Tissue Dissection Lab—The Platinum Standard
If attending a dissection cadaver lab is the gold standard for learning anatomy, then attending a fresh-tissue (unfixed and unembalmed) dissection lab is the platinum standard. Fresh-tissue cadavers are much more realistic and lifelike than embalmed cadavers, both in their appearance and structural texture, as well as their flexibility. Especially valuable is that full joint range of motion is still present.

Also, because no embalming fluid is used, participants are not exposed to the possible deleterious health effects that embalming fluid might impose. However, it should be stated that the smell of fresh-tissue cadaver labs can become less pleasant as the days proceed during the week.

Diamond Standard

All of these cadaver lab experiences are excellent. But the diamond standard would be if the instructor who leads the cadaver dissection lab workshop has experience in the field of manual and movement therapy. An experienced instructor can apply the anatomic structural knowledge to the hands-on skills in the field of the participants, thereby increasing the appreciation of the anatomy being learned.

For example, if a manual therapy table is located somewhere in the lab, then after a specific muscle, perhaps the quadratus lumborum, has been dissected, the class can have a demonstration of how to palpate and stretch the quadratus lumborum. If there are enough tables, then in addition to watching the demonstration, perhaps all the participants can practice the palpation and stretching skills demonstrated. Marrying together the fundamental underlying anatomy science with the assessment and treatment of hands-on skills would truly be the diamond standard of learning.

THE INSTITUTE FOR ANATOMICAL RESEARCH

I have been teaching cadaver labs in the world of manual and movement therapy for well over 25 years. And, as written here, I believe strongly in the value of attending cadaver labs to learn anatomy, and from there, to critically think and creatively apply our hands-

teaching cadaver labs, I have used an excellent cadaver lab at the University of Bridgeport, near where I live in Stamford, Connecticut. But, being part of a university, there have been some limitations with the use of this lab.

However, as coincidence would have it, while attending a five-day fresh-tissue cadaver dissection class taught by Tom Myers in Arizona, a fellow attendee who lives in Asia told me about a cadaver lab in Colorado Springs, Colorado, that is owned and run by a massage therapist! I contacted this lab and was so impressed that I began using their lab to run my cadaver dissection workshops.

The Institute for Anatomical Research was created and is primarily oriented toward the world of massage therapy, and more generally, all manual and movement therapy professionals. What a pleasure to have such a resource in the world of massage therapy; it is truly a gem!

So, without further ado, I would like to introduce our *Massage & Bodywork* readers to Bonnie Thompson and James Pulciani of The Institute for Anatomical Research. Thompson created and is the director of the lab. Pulciani is the lab's director of education. The following is an interview with them both.

From left to right: Lindsay Haughton, James Pulciani, Joe Muscolino, and Bonnie Thompson.



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