



Anatomy Matters ... But Which Anatomy? — BLOG POST

By Walt Fritz, PT / October 6, 2019

Concerning our education and approach to the various populations to which we apply this education, it should go without saying that anatomy matters. Knowledge of the structure and its related function plays an essential part in our training and daily experience. Without this knowledge, we are working blindly. However, when it comes to intervention, especially manual therapeutic intervention, which anatomy matters most? While many would say, “it all matters,” some would have different answers.

Today in my PT practice, while working with a patient who was experiencing persistent knee pain and reduced function well after the typical recovery period status-post total knee replacement, I touched on this patient’s primary area of pain. The area on her knee was the size of my fingertip, which is what I used to (gently) poke. She immediately asked, “What is that? Why does that hurt so much?” She wanted to be told something. She wanted to know that I knew. She wanted answers! In the past, I would have indeed given her a simple response. “It is the scar tissue.” That is an easy answer, but is it correct? I could just as quickly have told her, “It is the muscle not fully healed,” or “Your fascia is restricted from the surgery.” Other professionals would no doubt come up with different responses, but are any of us correct? Is there a simple answer to why, four years post-surgery, she is still experiencing pain that limits her motion and walking? Can we point to one tissue or one single anatomical structure, to lay the blame?

When sitting across from a patient experiencing post-head and neck cancer dysphagia, how might you explain to them why they are having difficulties swallowing? While there may be common statements each of you might make, variations would exist depending on your training and experience. Is there one correct response, or would difference exist depending on the specifics of surgical intervention and radiation? But even within those variations, can you ever be sure which specific tissue has been impacted in such a manner to diminish the ability to swallow? Is it the muscle? Scar tissue? The sensory and motor nerves? Pooled lymph? Or might it be more accurately the complex inter-relationship between the local tissues and altered sensory-motor pathways?

Manual therapy has been an accepted part of the speech-language pathologist community since the early 1990’s when manual circumlaryngeal treatment (MCT) became studied as a means to address muscle tension dysphonia (MTD). Reading through a [1993 paper by Nelson Roy](#) (1), one learns of a rather simple sequence of events, where causation of MTD is represented as being due to excessive muscle tension and remediation of the MTD, which is, in essence, a direct result of the MCT in the muscles in question. Back then, the anatomy that mattered was the specific muscles seen as causative in MTD. Roy described a protocol of manual manipulation that he termed, manual laryngeal musculoskeletal tension reduction, where the application of the intervention to these muscles and the surrounding structure produced an outcome of improvement of the voice in one session. There was a logical conclusion that since the problem was thought to lie in excessive muscle tension that manipulating those muscles created local change.

In many ways, the hundreds (yes, hundreds) of manual therapy brands, types, and styles follow along a similar line of reasoning, though each (or groups of each) seem to have cordoned off certain aspects of human anatomy as their particular target. Some follow Roy’s original line of circa-1993 reasoning, believing that muscle tension or tightness is causative and that with the right type and style of intervention,



we can impact that muscle by merely applying pressure, stretch, poking, prodding, or other means of therapy. Their anatomy of importance is the muscle. However, this group is one small part of a much larger crowd of tissue thinkers. I was trained in fascial work, specifically myofascial release (MFR). Fascia therapists feel that so-called fascial restrictions, undetectable by standard measurements or testing, is responsible for pain and a wide range of movement disorders and that only with the adequately applied fascial therapy can these restrictions be released. When evaluating and treating, their perceived anatomical target are these elusive fascial restrictions. Some feel tight, or out of place, joints are crucial to the resolution of pain or movement disorders, while others cast blame postural imperfections or asymmetries.

I could go on for quite a while, stating the fundamental beliefs and anatomical targets of each group, but I think that you see my point. Each group feels that a single part of the human anatomy matters more, and each tends to think that they have privileged access to that anatomy through their intervention. Each school or branch of therapy tends to get positive results and outcomes, which often suffices to allow them to feel that their explanation is valid. Anatomy matters, but which one matters most depended on which tissue you believed was most important. Most would agree that the whole of anatomy is essential; however, when pressed a bit, you would see each group narrowing the list to their favorite anatomy (tissue). In my PT world, tribal cultures exist where beliefs of exclusive efficacy cause nearly cult-like loyalty to those beliefs (and the educators who teach the work). The very odd aspect of this tribalism is that all of these groups get good results/outcomes, which reinforces the false narrative that their beliefs were validated.

Back to Nelson Roy. If one follows his process of discovery from 1993 to the present, one can see his evolution from seeing the problem and solution in one isolated section of our anatomy (muscles of the laryngeal region) to a more complex, top-down process mediated by the brain. In his most recent 2019 paper, [Exploring the Neural Bases of Primary Muscle Tension Dysphonia: A Case Study Using Functional Magnetic Resonance Imaging](#), Roy points to pMTD as a result of overactivation of certain neural regions of the brain, resulting in disordered voice. Treatment in the periphery, in this case, the laryngeal area, “appeared to disrupt and eventually deactivate several components of this dysfunctional neural pattern, thereby producing a shift in activation patterns and with it normal vocalization.” What was once seen as a direct action of our hands to muscle/muscle tension is now seen as a complex, multi-system process and change in neural regulation. Anatomy matters, but which one? All of it, especially the brain! The muscle is controlled by the brain and central/autonomic nervous system and is essentially a distal result rather than a primary decision-maker.

Anatomy matters, however, think for a moment about laryngeal dysfunction with regards to voice. Muscle tension does indeed play a role, but what is the driver of the problem? Did the muscle decide to misbehave in isolation from all else? One might say overuse was the issue, which also can undoubtedly play a role, but does the muscle alone act in this fashion, or is there other drivers involved as well? The drivers, in this case, would be the brain and motor/sensory nerves. The autonomic nervous system is highly involved and relevant in the case of MTD. Body and cartilaginous positioning are relevant; however, these structures do not just choose to be out of a place we feel they should be. The normalcy of skeletal asymmetry can play an unseen background role in the anatomical presentation, though a lengthy topic for a possible future post. Anatomy is essential, but which one? The muscles, fascia, nerves, brain, bony/cartilaginous structure, lymph, etc.?

From the standpoint of how I interpret the widely varying evidence that exists for the positive impact of manual and other therapies, it has become apparent that we've yet to firmly nail down precisely what is happening when we perform manual therapy. I do believe that Nelson Roy is closing in on the truth, but



the details will continue to be discovered over many decades of future work. Anatomy matters, but so do patient perceptions. What was once seen primarily as biological (tissue-based) problems, dysphagia, dysphonia, globus, and the myriad of other disorders facing the SLP are much more than merely problematic tissues. They are complex, multi-system, biopsychosocial inclusionary disorders, and believing that we can master them by knowing the anatomy is short-sighted. I approach manual therapy less from feeling like I am making changes to the tissues and more about meeting a narrative of relevance on the part of the patient. While fuzzier, in terms of a simple explanation, acknowledging patient preferences and perspectives and how they can direct intervention is a full one-third of the evidence-based model that we are expected to follow. If we believe that we are treating anatomy, the patient's perspectives are typically ignored.

Allowing influence to be drawn from the patient's views of safety and relevance, presented in a manner that will enable their input to be heard, maybe a truer driver of change than what we believe we are doing to and with the tissues and anatomy.

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[“Foundations in Manual Therapy: Voice and Swallowing Disorders”](#) (formerly-named [“Foundations in Myofascial Release for Neck, Voice and Swallowing Disorders”](#))



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He teaches his [Foundations in Manual Therapy: Voice and Swallowing Disorders](#) seminars to a variety of health professionals, including SLPs, across the globe. You can learn more about his work through articles and videos, along with viewing his introductory and advanced seminars at www.waltfritz.com. Coursework that Fritz teaches are [ASHA-approved seminars for speech-language pathologists](#).

1. Roy N, Leeper HA. (1993) Effect of the manual laryngeal musculoskeletal tension reduction technique as a treatment for functional voice disorders: perceptual and acoustic measures. *J Voice* 1993;7:242–9.
2. Roy, Nelson et al. Exploring the Neural Bases of Primary Muscle Tension Dysphonia: A Case Study Using Functional Magnetic Resonance Imaging. (2019) *Journal of Voice*, Volume 33, Issue 2, 183 – 194. DOI: <https://doi.org/10.1016/j.jvoice.2017.11.009>

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