

Book Review of Fascia: The Tensional Network of the Human Body

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The just released and long-anticipated book on fascia is a noteworthy accomplishment inspired in part by the 2007, 2009, and 2012 International Fascia Congresses in which researchers from diverse fields and a great variety of hands-on clinicians came together to explore emergent research and clinical application. The amount of published papers has significantly increased in the recent past. The book has 78 contributors from a vast sweep of scientific and clinical expertise addressing in 515 pages, hence a very broad appeal to many clinicians, anatomists, biomechanists, and many other researchers. The book is comprised of eight parts: anatomy, neurology, physiology, pathology, diagnostic procedure, therapies, and research, communicated within 67 sub-chapters. Rather than include a DVD the reader can access online videos that nicely accompany the text. The website presents some information on the book, though the actual videos require a code from the book. See www.tensionalnetwork.com. It is with apology I must state that this is a most difficult review as there are many unique chapters, of which I cannot possibly do justice. A random sample of sub-chapters should be supportive of that statement, generally described as; general anatomy, fascia as an organ of communication, proprioception, force transmission, physiology, fluid dynamics in fascial tissue, fascial palpation, a good overview of osteopathic fascial therapies, a most interesting therapeutic technique chapter on Gua Sha, neurodynamics, fascial fitness, and scientific research and process, and many others. A few chapters could have benefited from more in-depth coverage, though they succeed in fostering interest beyond the book. A few more clinical technique videos would be very welcomed.

The color plates are all presented together just after the introductory chapter, perhaps to save printing costs. While glancing at them initially may feel slightly out of context as they relate to text in the chapters throughout the book; there is a profound inspiring aesthetic and architectural wonderment, which is best described as compelling. The images visually set the stage, varying from simple to complex, micro to macro, sculptural, engineering, , multidimensional and again; inspiring. The lattice, gossamer-like electron microscope renderings are truly astonishing. The reader will probably revisit this section several times. Considerable attention to detail also extends to the rest of the black and white graphics throughout the text.

The introductory chapter contrasts the traditional definition of fascia with more contemporary definitions, citing several sources for the ongoing expansion of the definition. The result is the proposal of a much broader classification system of fascial structures, albeit with some challenge and controversy. The functional definition, congruent with the title of the book, specifically describes fascia as a body-wide tensional force transmission system. The book proposes this recent classification of fascial tissues as inclusive of the dense planar tissue sheets such as septa, joint capsule, aponeuroses, organ capsules or retinacula, but also tendon and ligament. It also encompasses softer collagenous tissues such as the innermost layer of endomysium, cutis, Fascia is also inclusive of the dura mater? periosteum, perineurium, the annulus pulposus, bronchial connective tissue and abdominal mesentery.

The scientific references in each chapter provide solid undergirding for much of the material and the future is expansive as expressed by one author "Therefore it is clear that we have only scratched at the

surface of this intricate and complex system and a lot more scientific and clinical work is needed to reveal the principles of its complexity.”

Fascia-related disorders, such as frozen shoulder, Dupetryn’s contracture, trigger points, diabetic foot, etc. These were very well researched chapters. However, in my opinion the optimism re manual techniques, which address vexatious, indurated disease processes such as scleroderma seem to be overly optimistic as stated. The unique presentation on spastic paresis may have included introductory work on the etiology, going beyond the thorough definition presented. Specifically, foundational concepts regarding the CNS, would be welcomed. The chapter presents some very interesting controversy and admits the theoretical construct presented is in its infancy. Hypermobility is covered in this chapter and in a previous, yet they are additive in perspective.

Some of the detailed biochemistry challenges this reviewer and may pose some challenge for others, yet is appropriately included as it enlightens on the complexity of this somewhat underappreciated dynamic system.

The book contains several noteworthy concepts that have direct clinical implication, and I present a short list:

1. Fascia should no longer thought of as a simple supporting structure but now encompasses many types of connective tissue, many of which form a tensional network throughout the body; in which multiple structures are truly inextricably linked.
2. There is a rich proximity of sympathetic nerve fibers.
3. Fascia is not a passive element but rather a very dynamic and mutable structure.
4. Resting muscle tone, theoretically, may be significantly influenced by changes in fascial stiffness, being additive to the long-understood role of muscle influencing fascial tone. This proposal is strongly under-girded as there is proximity of sympathetic nerve fibers, potentially influencing fascial tone, which remarkably does contain varying amounts of myofibrils. This perspective of fascial tone is a fundamental theoretical construct from the Rolfing community and other bodyworkers, which no doubt will receive continued basic science and clinical research.
5. The proprioceptive, interoceptive and nociceptive roles are explored which has broad implication for many practitioners.
6. Myofibroblastic density variation within fascia, relationship to the autonomic nervous system and chemical reactivity is an exciting area of inquiry.
7. Many other explorations abound such as cell-signaling, fluid dynamics, microvascular sliding mechanism, etc.
8. The viscoelastic properties underscore the use of low-load and long-duration therapies, which resonates with my own work.
9. Treating beyond the location of obvious pain and dysfunction is given sound theoretical reinforcement.

A simplified model of ligament tone in the elbow used to explain a very important and perhaps underappreciated concept. The concept being that the spread of muscle force goes well beyond its tendon insertion. The force spreads via fascial expansion and continuity influencing joint control. Future editions should explore works on joint structure and function of the elbow ligaments, which convey that ligaments function throughout the range, not just at end range as presented in the simplistic model. There is in fact a dual role between ligament and muscle throughout the range of motion and both concepts are relevant. The biomechanical and reflexogenic (including crossed reflexes) role of muscle and fascia augmenting resting and active ligament tone is a noteworthy concept worthy of greater

exploration. The chapter and video addressing the ligament-like role of muscle, the expansion beyond tendon insertion and the proprioceptive role are a very worthwhile exploration for clinicians. This is a chapter that I intend to reread and will pursue the references, as I sense that there are deeper concepts that can only emerge in time. As much of the research is recent, on occasion it can seem as though some of the theoretical interpretations might be premature and on occasion; overly optimistic. On balance, there is much to foster renewed enthusiasm for this neurodynamic, mutable, tensional framework.

A section on diagnostic procedures for fascial elasticity (hands-on) is a very relevant precursor to the section on fascia-oriented therapies. The therapeutic application consists of 24 contributions, most chapters being brief, none over 10 pages, providing a good general overview of some fairly well known, and perhaps some lesser-known therapies.

The final therapeutic chapter addresses the emerging fascial fitness exercise and it brings sound principles with rational novelty and an element of fun. Initially pessimistic, my opinion was in-fact changed by reading and observing brief video. I am now enthusiastic and look forward to greater exploration via workshop, book, or DVD formats.

The final section opens with a philosophical and theoretical foundation for basic research, followed with sub-chapters on ultrasound, advanced MRI for movement analysis, an interesting perspective on the role of fascia related to muscle size, and lastly; mathematical modeling. Perhaps difficult to distill the foundational chapters, I would nonetheless welcome a final concluding chapter that would summarize much of the more recent developments.

This is a stand-alone foundational work synthesizing a tremendous amount of research on fascia and presents direct therapeutic application. It makes a very broad reach, and succeeds. Future editions of this text will be welcomed as the science and clinical application grows. In the interim, rereading several chapters, reviewing the color plates, chasing important references, and staying in touch with future developments will serve as a pleasant bridge.

Any-and-all hands-on clinicians will find much to excite and inspire in this text. Diverse researchers, anatomists, and educators should also find it to be worthwhile. I am pleased to endorse this book with a 4.5/5 star rating.

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