

Conference Report

Fascia 2007: The First International Fascia Research Congress

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The quality of the presented material, the questions raised, and the promise of collaboration yet to come as a result of this congress, was far beyond the expectations of all in attendance.

—George Pellegrino, LMT, CMTPT, RMTI, Codirector of Myofascial Rehabilitation Center and Co-Founder of the American Institute for Myofascial Studies

Thomas Findley, M.D., Ph.D., and Robert Schleip, Ph.D., [both Certified Advanced Rolfers™] thought it was due time that the scientists that were studying fascia meet with the clinicians that were treating it. They started to plan a gathering where the finest researchers in the field would present the latest and best scientific fascia research. Seventeen of the world's most eminent fascia researchers, who between them had published over 1500

publications in peer-reviewed journals collaborated, and along with a further 16 key representatives from various clinical disciplines, a multidisciplinary team was formed that collaborated over a period of 2 years to create a landmark event: The First International Fascia Research Congress (see Figure 1).

On October 4 and 5, 2007, the stylish modern glass building of the Joseph B.



Figure 1 Thomas Findley, M.D., Ph.D., opening the proceedings of the Fascia Congress (photo credit: Hallie Robbins, D.O.).

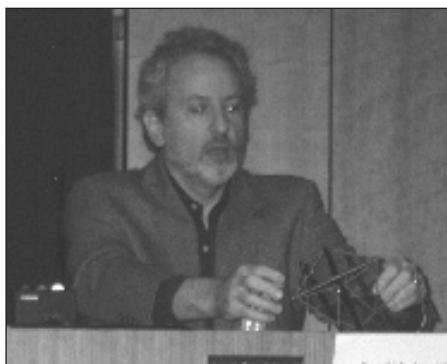


Figure 2 Donald Ingber, M.D., Ph.D., describes the tensegrity model.



Fascia Research Congress book, *Fascia Research*, by Tom Findley, M.D., Ph.D. and Robert Schleip, Ph.D., eds.

Martin Conference Center at Harvard Medical School played host to healthcare professionals from twenty-six countries and forty U.S. states. The conference drew interest from a wide variety of disciplines: 75% of the participants were manual therapists or practitioners (chiropractors, osteopaths, acupuncturists, physical and massage therapists) while 25% were medical physicians or scientists. This diverse group assembled in Boston, eager to learn about fascia in all its various forms and functions.

Interest in the conference was greater than anyone could have expected. When the conference sold out nearly six months before the event, state-of-the-art audio-visual transmission was organized to allow presentations to be viewed from auxiliary rooms throughout the conference center. With enough material for three days and a conference center that was only available for two, the organizers decided to extend the conference hours to a twelve-hour program on the first day and a ten-hour program on the second. With everyone's cooperation, this jam-packed agenda was amazingly able to run according to schedule.

Mechanotransduction was the first of four main topics addressed:

- Donald Ingber, M.D., Ph.D. started things off by discussing tensegrity and mechanoregulation (see Figure 2).
- Paul Standley, Ph.D., M.D., spoke about how human fibroblast cytokine

expression is regulated by biomechanical strain and suggested an in vitro model for myofascial release.

- Helene Langevin, M.D., presented her findings on the dynamic connective tissue fibroblast cytoskeletal response to tissue stretch and acupuncture.
- Alan Grodzinsky talked about chondrocyte mechanobiology and its relevance to matrix molecular mechanics and tissue remodeling.
- Frederick Grinnell, Ph.D., taught the basics of fibroblast mechanics in three dimensional collagen matrices.

Collectively, this segment of the event explained the role of mechanotransduction in cell culture systems, in tissues and in the entire living organism. The research presented on mechanotransduction had exciting implications for bodyworkers, suggesting that the efficacy of manual therapies may be explained as the action of mechanical pressure being converted into chemical signals in the body.

As the second featured topic of the conference, Giulio Gabbiani, M.D., Ph.D., James Tomasek, Ph.D., and Boris Hinz, MER, Ph.D., addressed the evolution, mechanoregulation, and contractile function of myofibroblasts. Myofibroblasts are atypical fibroblasts that combine the ultra-structural features of both fibroblasts and smooth muscle cells. Due to their expression of stress fiber bundles containing alpha smooth muscle actin, and due to strengthened adhesion sites on their membrane, these cells possess

a much higher contractile potential than normal fibroblasts. The contribution of myofibroblast contraction in wound healing is well established; however, more recent discoveries of the presence of myofibroblasts in other connective tissue, such as ligaments, tendons and broad fascial sheets has provided early evidence that connective tissue contractility is also an important factor in normal musculoskeletal dynamics.

One of the problems with connective tissue research has been ambiguity about what is fascia and what is not. Frank Willard, Ph.D., cleared up this confusion in his presentation on the four layers of fascia in the first of three main presentations on the anatomy and biomechanics of fascia. He pointed out that ligaments, tendons and aponeuroses are comprised of dense regular connective tissue and are technically not fascia. Fascia, or dense irregular connective tissue, can be understood as four concentric tubular-shaped layers made up of pannicular, axial, visceral and meningeal fascia, within which all organs systems of the body develop.

Peter Huijing, Ph.D.; Andry Vleeming, Ph.D. and Moshe Solomonow, Ph.D., continued the theme by explaining how essential connective tissue is to force transmission and power, while Serge Gracovetsky, Ph.D., rounded out the panel in his presentation that asked, "Is the lumbodorsal fascia necessary?" Participants laughed hard as he wove humor into his convincing demonstration of what the human body would be like without this large aponeurotic sheet of tissue.

Gracovetsky was later awarded the \$2000 Dr. Ida P. Rolf Award, sponsored by the Rolf Institute of Structural Integration®, for the best oral presentation. Who knew how funny fascia could be?

Fascia pain mechanisms were the final main topic of the Fascia Research Congress, and were of special interest to all the attending clinicians who treat people in pain.

- Siegfried Mense, Ph.D., explored the neuroanatomy and neurophysiology involved in low back pain.
- Jay Shah, M.D., shared his research using a novel microdialysis technique that showed increases in the levels of chemicals associated with nociception, inflammation and muscle contraction in the area of myofascial trigger points.
- Geoffrey Bove, DC, Ph.D., reviewed the epiperineurial anatomy and reported how this nerve fascia can cause pain symptoms in its own right.
- Partap Khalsa, DC, Ph.D., concluded the session with his insights into the proprioceptive and nociceptive mechanisms of joint capsules.

In addition to his scientific contributions, Khalsa also presented information on the funding program of NCCAM – the National Center for Complementary and Alternative Medicine. Dr.Khalsa had good news for all of the budding researchers in attendance. Grant money is available for fascia research projects and the funding officers of the program are there to help prepare proposals.



Figure 3 Antonio Stecco, M.D., and Julie Ann Day, P.T., accept their award for the best poster from conference organizer Robert Schleip, Ph.D. (photo credit: Julie Day)



Figure 4 The Clinician-Educator/Scientist Panel. (photo credit: Hallie Robbins, D.O.)

Concurrent parallel sessions provided participants with a large array of choices to further explore their particular interests. The presenters included those whose submitted abstracts were accepted for oral presentation as well as invited speakers. "Presenters from around the world brought invaluable and unexpected insights into fascial function and dysfunction. For example, W.J. Fourie of South Africa showed that the fascia lata coordinates complex thigh muscular activity, with a critical role played by the integrated vastus medialis and fascia lata. This relatively minor insight immediately affected my practice," said Rena Margulis, developer of Tandem Point Integrated Acupressure therapy.

Forty-three of the accepted abstracts were presented as posters and were available for viewing during the entire conference. A \$500 award for the best poster, sponsored by the Fascia Research Congress, was presented to Julie Ann Day; Carla Stecco, M.D., and Antonio Stecco, M.D., from Italy for their work entitled "Fascial manipulation technique: anatomical basis and clinical implications" (see Figure 3). They reported that "The First International Fascia Research Congress was an intensely exciting experience. Extremely well organized, it was a true smorgasbord of information, with state-of-the-art presentations of scientific research concerning the fascial system. We were thrilled to have received the Best Poster Award. This acknowledgement of our work

and, in particular, the lifetime of clinical research and study of our mentor, Luigi Stecco, encourages us to continue in our efforts to comprehend the intricacies of the fascial system."

For Sue Hitzman, developer of MELT (Myofascial Energetic Lengthening Technique), one of the highlights was seeing the movie "Strolling Under the Skin" by J.C. Guimberteau, M.D. On the second day, participants had the choice of attending the Ida P. Rolf Research Foundation Inaugural Address given by Richard and Alan Demmerle [Dr. Rolf's sons].

Peter Lelean, a structural integrator and clinical masseur from Australia remarked, "The principles of cellular tensegrity, covered by some of the main speakers, are directly translatable to the techniques used to restore fascial function as part of structural integration on the macro level. There is clearly much to be gained from further interdisciplinary discussion."

The existing body of research on connective tissue has generally focused on specialized genetic and molecular aspects of the extracellular matrix. However, the study of fascia as a function of support, as a contribution to human force potential and as a source of pain has been largely neglected.

The congress generated many questions that have yet to be answered. During the final panel session, co-chaired by Partap Khalsa and Leon Chaitow, ND, DO, clinician/educators (Joseph Ardette, M.D.;

Tom Myers, Certified Advanced Rolfer™; Diane Lee, PT and Michael Patterson, Ph.D.) asked questions of scientists (Langevin, Shah, Huijing, and Solomonow). Langevin emphasized the dearth of evidence. To many of the posed questions, she humbly answered, "We don't know." For many, such apparently negative answers, were a justification of the intent of the session – to inform scientists of what clinicians and educators need to know (Figure 4).

For those who were unable to attend the conference, a DVD recording of the proceedings was shown at nineteen U.S. and fourteen overseas locations around the world. In addition, a conference proceedings book was made available. *Fascia Research: Basic Science and Implications for Conventional and Complementary Healthcare* is a compilation of sixteen full-text articles written by the main speakers, that also includes all of the abstracts that were accepted by the Scientific Review Committee. This companion book, as well as the DVD, are available for purchase through the congress website www.fascia2007.com. Plans for the Second International Fascia Research Congress are already underway. Huijing has offered to host the next conference at Vrije Universiteit in Amsterdam in 2009.

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The First International Fascia Research Congress was a great success. In fact, it was an important, interesting and fun occasion. Practitioners of every stripe were brought into contact with leading clinicians and bench scientists. Listening to people articulate their research was to have the momentary privilege of peering into brilliant minds. One of the delights were seeing how humor, patience, humility and graciousness could coexist with penetrating intelligence. Another was to realize how important thorough literature reviews, technical expertise and uncommon sense are in the research arena. Last of all, it was delightful to bathe in the sea of good will and euphoria that came from the interaction of practitioners and researchers at the top of their game.

– John Hannon, D.C.