Rolfing: Focus on the Fascia
Jeff Marino, L2

Most medical students have a limited relationship with fascia: it’s the stuff you dig through in anatomy lab in order to locate some nerve or artery that was more important. Sometimes the fascia has fancy names: Camper’s, Colles, Scarpas. It can even determine the extent of a nasty staph infection. Nevertheless, fascia often goes unnoticed in a medical student’s studies.

As much as fascia may be ignored in medical school, there are some practices that actually focus on it. Rolfing is a holistic system of body manipulation and movement education that targets fascia—especially the deep, investing fascia around muscles. One of the technique’s key principles is that injuries, poor movement patterns, or chronic muscle tension from stress cause the fascia to tighten. Over time, this tightened fascia prevents the natural patterns of muscle contraction and relaxation and restricts the body’s easy movement. The goal of rolfing is to realign and balance one’s body by helping it “unlearn” bad patterns of muscle strain and misuse.

Through a specific sequence of deep tissue massage techniques developed more than fifty years ago by its founder and namesake Ida Rolf, Rolfing seeks to loosen fascia and allow muscles to move more freely. Additionally, Rolfing strives to integrate all regions of the body to maximize the efficiency of the body’s movement within the earth’s gravitational field.

Rolfing can be used on just about anyone—people with injuries from auto accidents, neck or back pain, arthritis, or sports injuries, to name a few. Some people undergo a Rolfing regimen simply to learn to move better or to improve breathing, flexibility, or posture. The only people for whom Rolfing is not recommended are those who have active cancer, broken bones, or a recent history of major surgery.

Rolfers (as the practitioners are called) evaluate a body’s symmetry both at rest and in motion to identify restricted movement or imbalance. Then, through a ten-session
Rolfing: Focus on the Fascia (cont’d)

protocol, the Rolfer systematically treats the patient, focusing on a different anatomic region each session—beginning at the feet and working upward. Each session builds upon the last until the body is totally aligned; this is effectively demonstrated in the “before and after” photos of patients who have been “Rolfed.”

Additionally, Rolfing may offer other health benefits. Although the amount of research specifically devoted to Rolfing is limited, some studies suggest that Rolfing increases the body’s overall parasympathetic tone; others research has found that the myofascial changes it achieves are advantageous in patients with mild to moderate cerebral palsy.

The degree of success of a Rolfing sequence is in large part determined by the patient, who gradually learns about posture, alignment, and body positioning so that he or she can achieve more efficient, more functional, and more balanced everyday movements.

Rolfing encourages the health care provider to recognize fascia as a possible positive influence on the patient’s well-being, rather than an arbitrary sheath surrounding tissues; by doing so, providers will have the opportunity to offer their patients a course of therapy that may have lasting beneficial effects.


Osteopathic Manipulation

Justin Meunier, L2

Osteopathic Medicine was founded in 1847 by Dr. Andrew Taylor Still, M.D. (1828 - 1917) as a reformation of what he perceived as the inadequate medical treatments of his day. The principles upon which Osteopathic Medicine was founded brought into perspective the importance of treating the whole patient--mind body and spirit--taking advantage of the body’s natural tendency to move toward health and homeostasis, and emphasizing an increased awareness of physical imbalances within the musculoskeletal system and techniques with which to treat them.

The practice of Osteopathic Manipulative Medicine (OMM) was derived to address these musculoskeletal imbalances, which Dr. Still believed contributed to the decline of health and the establishment of disease within the human body.

OMM is a manual modality of treatment used to improve the impaired or altered function of the musculoskeletal system. The act of manual manipulation, with roots in the ancient Greek "frictions," has long been a part of health care, but modern OMM includes many refined techniques that can be applied, such as myofascial release, cranial osteopathy, lymphatic pump, high velocity low amplitude thrust, muscle-energy technique, and counterstrain. It is also important to note that some of the pain relief experienced by recipients of OMM could be partially mediated by the induction of the patient’s endogenous opioid systems through the patient’s belief or expectation that the OMM would help alleviate his/her pain.

OMM techniques can be applied to the joints, soft tissues, muscles and fasciae to help facilitate the body’s natural tendency towards health.

Possible beneficial applications of OMM include:

- Maintenance of General Health
- Back and Neck Pain
- Arthritis
- Chronic Pain Conditions
- Enhancing recovery from surgery and/or serious illness
- Fibromyalgia
- Musculoskeletal Pain
- And others….

Med student participants in the 2006 AMSA CAM Leadership Training Program in Rhinebeck, NY get a chance to practice OMM techniques on each other.

What holiday could be better than a holiday that promotes love? One that promotes mental, physical, and emotional health, of course! Valentine’s Day provides the opportunity to incorporate all of these benefits. One could even say that Valentine’s Day is a public health initiative. On this one special day, scores of couples rush home from work to meet their mates, indulge in a nice romantic dinner, maybe a movie, then head back home to celebrate both love and health by indulging in something even more pleasurable—sex. This single word probably elicits different emotions in everyone, but for now, let go of those and consider the health benefits. For instance, sex is a form of exercise, stress relief, and pain relief—and it doesn’t need to be saved for Valentine’s Day!

So, make some time for you and your special someone: close your laptop, pause the iPod, turn off the television, light an aromatherapy candle and engage in the one pastime that continues to stand the test of time.

**The Benefits of SEX**

Virginia Simon, L2

- **Exercise.** Intercourse burns about 200 calories on average, which is about the equivalent of running on a treadmill for 15 minutes. The heart rate rises from 70 to 150 bpm, and depending on your workout preferences you can workout a whole assortment of different muscle groups.

- **Reduced Depression**

- **Less frequent colds and flu.** A study at Wilkes University in Pennsylvania shows that people who have sex a few times a week have higher levels of IgA antibody.

- **Reduced risk of heart disease.** A 2001 Queens University study showed that men reduced their risk of stroke or heart attack by 50 percent by having sex three or more times a week.

- **Pain relief.** Immediately before orgasm, levels of the hormone oxytocin rise to five times the normal level; this releases endorphins, which can alleviate pains like headache and arthritis. In women, sex also releases estrogen, which relieves pain associated with PMS.

- **Better sense of smell.** Sex makes levels of prolactin surge causing stem cells in the brain to develop new neurons in the olfactory bulbs.

- **Better bladder control.** Sex strengthens the same muscles that kegel exercises strengthen—the pubococcygeus muscles.
**What is fascia?**

Fascia is a specialized dense connective tissue layer which surrounds muscles, bones, and joints, providing support, protection and giving structure to the body. Fascia is a mechanically continuous extracellular matrix throughout the body and is the only tissue when present by itself that reflects the individuality of a person’s internal and external appearance. It is a series of proteins and glycoproteins secreted by fibroblasts which are embedded within the matrix. It consists of three layers: the superficial fascia (beneath the skin), the deep fascia (below the superficial fascia) and the subserous fascia (between organs and structures of the body and the deep fascia). Another type of dense connective tissue is the aponeuroses, which invests muscles.

**Why is fascia important?**

Fascia appears to be a component of our evolutionary response to gravity and a key component through which mechanical forces are translated into changes in cellular functioning. The field of tensegrity describes the changes in cell function as a result of differences in stress and strain induced in the cell though integrins and adhesions that connect the cell to the extracellular matrix. These changes in stress and strain have been implied in spread of cancer, differentiation of organ systems during embryologic development, and changes in hormone secretion. In addition fascia appears to have the ability to contract in a manner similar to smooth muscle and can therefore directly influence myofascial tone and pain. This ability to contract appears to be due to the presence of an integrated matrix of contiguous fibroblasts within the fascial extracellular matrix.

**Tensegrity** is a field of study originating in architecture that describes how a system constructed with elements in a tensorial matrix retains its shape in response to compressional forces. Within the human body this same principle appears to hold. Within the cytosol, key enzyme systems appear to be scaffolded upon key elements of the cytoskeleton. These cytoskeletal elements in turn are connected to the extracellular matrix via membrane bound adhesion molecules. When the extracellular matrix changes shape due to fascial changes, these adhesion molecules are strained differently causing changes in cellular shape and therefore cellular functioning. Chief among the diseases that cause significant changes in strain is obesity.

According to animal studies, fascia is a piezoelectric tissue which can transmit electrical signals induced by movement of the tissue itself. These models imply that acupuncture meridians are located within fascial planes of the body. Current theories propose that the efficacy of acupuncture is dependent upon the creation of needle-extracellular matrix complex that can transmit mechanical and electrical stimuli. Surgical repairs depend upon fascial strength and healing. Infections track along fascial planes.

**How is fascia manipulated?**

Myofascial release can be either direct or indirect. Direct release is the process of using slow focused pressure to encourage adhered areas of fascia to release. Rolfing and ischemic compression are forms of direct myofascial release. Indirect release encour-ages fascia to relax by applying either slow gentle cross fiber stimulation to the area or by applying counter strain stretching techniques. In addition to dry needling, injection of sterile saline and/or lidocaine, or acupuncture can be used to release myofascial structures. These techniques allow the fascia to become more fluid and reorganize itself to allow greater flexibility and reduce pain.
Thank you…

We would like to offer thanks to the American Medical Student Association Foundation’s EDCAM program, Whole Foods Company, the Wholistic Wellness Network, LSUHSC Family Medicine Department, and our faculty advisor, Dr. Henri Roca who is Chief of LSU’s Section of Integrative Medicine and a Holistic Area Resource Person of the American Holistic Medical Association.

Editor:
Mamina Turegano, L2 Medicine

Assistant Editor:
Lauren Hebert, L1 Medicine

Contributors/Helpers:
Nijel Baron, LSUHSC Wellness Fitness Center Manager
Jeff Marino, L2 Medicine
Justin Meunier, L2 Medicine
Virginia Simon, L2 Medicine

Faculty Advisor:
Henri Roca, MD,
Chief of Section of Integrative Medicine, Department of Family Medicine

Donations can be made out to the LSU Foundation. Please specify LSU Section of Integrative Medicine on the comment line. Send donations to 2364 Constance Street, New Orleans, LA 70130.

Wellness Tips of the Month

Nijel Baron, LSUHSC Wellness Fitness Center Manager

Okay, so you’ve stuck to your New Year’s Resolution faithfully. You have made it to the Wellness Center at least three to four days a week. Grilled and broiled foods are now part of your new nutritional library. To your dismay, the scale has not changed! Slowly and surely, you are losing your will to keep going. Do not fret. Help is here!

There are so many different reasons why the scale is not budging one bit… I know you have heard the phrase “Muscle weighs more than fat.” This is very true and it has been proven in numerous studies, but maybe there is something else to blame. Genetics? Our bodies want to look like our parents’ bodies…gulp! True, but you can change that by increasing your physical activity and eating a healthy diet. Has this thought ever occurred to you, “Am I working hard enough?”

In the late 90’s the American Heart Association reported that most Americans do not workout at an appropriate intensity or duration for achieving effective weight loss. This simply means, if you are on the treadmill and holding an “easy” conversation with your neighbor, chances are you’re not working hard enough.

The American College of Sports Medicine recommends that healthy adults without cardiac complications or metabolic disease workout at 65%-80% of their maximum heart rate for at least 30 minutes; no less than three days per week. You ask yourself what is 65%-80% of my maximum heart rate mean? Your heart rate max is the maximal heart rate a person should achieve during maximal physical exertion. This number can be determined by a simple formula: 220 – age and multiplying that number by .65 or .80. That gives an estimation of your heart rate range.

For example, if you are 25 years old, 220 – 25 = 195. Multiply 195 by .60 = 117. Now, multiply 195 by .80 = 156. Your estimated range would be 117 – 156 (60%-80% of your heart rate max). To ensure you are exercising within the proper range during a cardiovascular workout take your pulse for 10 seconds; multiply that number by 6. That number is your heart rate and it should fall within 117-156. Too much math!!! Heart rate monitors automatically read your pulse and let you know your intensity level without all the math. Some heart rate monitors even alarm when you are exercising above or below your estimated heart rate range.

Hopefully, this will get you on the right path to your goal. Please feel free to contact the Wellness Center if you have any questions. We would love to help you! Our number is 504-568-3700 or email wellness@lsuhsc.edu.