

STRUCTURAL INTEGRATION – THE ANATOMY TRAINS WAY

James Earls BA (Hons) KMI

In the latter part of the twentieth century a lady by the name of Ida P. Rolf developed a new approach to bodywork which was eventually to carry her name. Borrowing on ideas and concepts from osteopathy, yoga, Alexander Technique, humanistic psychology and Feldenkrais to name a few; the revolutionary aspect she brought to bodywork was the idea that the body could be altered through the connective tissue. She believed, and demonstrated, that postural deviations could be corrected and ease of movement brought to a body by connecting into and changing the myofascia.

The fascia is made up of three basic elements – collagen, elastin and ground substance – and covers, invests and supports all of the organs and components of the body. It is the “bag” that holds the muscle fibres together, without it they would be merely pulp on the ground, it surrounds the organs and holds them in place with its connections to the surrounding structures and it forms the pathways through which the nerves, veins and arteries pass. The make up of fascia gives it strength with a small amount of elasticity due to its use of collagen and elastin respectively and is reputed to be as strong, gram per gram, as steel cable

Dr Rolf’s genius was to find that the fascia is often the reason for people being held in painful patterns. As the main supportive network of the body it is designed to respond to whatever stress is placed upon it – if more length is required, the fibroblasts are stimulated to produce more fibres, if the area is held in a shortened position then no extra fibres are produced and the connective “bag” effectively shortens. Along with these changes in the fibrous make-up there could also be consequent changes in the lubricating ground substance or extracellular matrix. This fluid is also produced by the fibroblasts but has a gel-like consistency, which can thicken to become a sticky glue further restricting movement and the flow of nutrients.

Unlike the muscle fibres it gives form to; the myofascia is plastic rather than elastic. This means that when manipulated properly the fascia will retain the effect of that intervention rather than snapping back into place. It is this quality that allows the results of structural work to be more permanent.

The model of the body used by Ida Rolf was that of a series of blocks stacked on top of each other and at the mercy of gravity; during the nineties anatomist and Rolfer, Tom Myers began to build on this model developing his concept of fascial continuities. Myers saw that as the myofascia came “out of” one muscle it carried on into the periosteum, ligament or tendon of another structure. Whilst this wasn’t a new concept what he did see was that these continuities went further than just the next muscle but that they formed lines, or the “Trains” of the title of his book, which are bodywide.

Armed with an understanding of this series of lines in the body, the therapist can now have a new method of reading the potential strain patterns, opening new avenues to getting to the root of the problem rather than just the painful manifestation. There are five principle lines – superficial front line, superficial back line, lateral line, deep front line and spiral line, four arm lines and two functional lines. The principal lines are responsible for holding postural patterns; the others are more involved with movement.

Myers’ theory of the anatomy trains has certain characteristics and rules, which will become highlighted as we map a couple of them out. The main one is that the fascia is continuous, we are not made up of the discrete elements as shown in the anatomy texts but rather held together by one large continuous web of material which is merely tacked down in certain places. These points Myers calls bony stations along his myofascial tracks so if we look at the first of the principal lines, the superficial back line (SBL) we can see how the lines develop.

The first station on this route is on the plantar surface of the toe phalanges and takes off into the tendons of the toe flexors and the plantar fascia, which wraps itself around the calcaneus to come out into the triceps surae. As the soleus would divert the line into the posterior tibia, interosseous membrane and the fibula, the SBL continues on with the gastrocnemius. This is one of the few rules of the lines – they stay at the same fascial layer, they cannot jump levels.

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Whilst we've just seen one rule, at the knee we have to break one. The line should continue with the hamstrings but they are not fascially continuous with the gastrocnemius, the connection is a temporary one only when the knee is extended. So with that temporary derailment, we continue up the leg with the hamstrings to the ischial tuberosity, onto the sacrotuberous ligament and we reach the sacrum and the sacrolumbar fascia and the erector spinae. The erector spinae carry us all the way up to the occipital ridge and from there over the skull to the frontal brow ridge with the occipitofrontalis and the galea aponeurotica.

Shortness along this line can be seen by having your client perform a forward bend. Whilst normally an indication of shortened hamstrings or low back, with a trained eye you can begin to see other areas along this line which may be contributing to the restriction. This can be demonstrated by having your client rub their plantar fascia with a golf ball and then repeat the bend. Quite often the release in the foot can help ease the rest of the line.

If there is a superficial back line, then it follows that there must also be a superficial front line (SFL) to carry it in balance. The SFL begins on the dorsal surface of the toes phalanges and takes off into the toe extensors and the anterior compartment of the leg up to the tibial tuberosity. At this point below the knee it picks up the subpatellar tendon (or ligament depending on which side of the fence you want to be on), over the patella and into the quadriceps, the rectus femoris in particular to rise to the anterior inferior iliac spine.

Once we get to this level we have to break the rules a little again as we have to take off again from the pubic tubercle. We cannot have an abrupt change of direction by taking the inguinal ligament to get there as that would break the line of force but as the pelvis is a solid bone what affects the position of the AILS will also alter the position of the pubic tubercle and this will allow the force to transfer further up through the rectus abdominis.

The rectus abdominis stops off at the fifth rib from where the sternalis and the sternochondral fascia take off for the sternal manubrium attachment for the sternocleidomastoid, which carries the SFL to the mastoid process and into the fascia of the scalp.

These two lines will be looked at in more detail during the workshop on the weekend of the conference along with introducing further important concepts of tensegrity, pallintonicity and looking at some basic elements of bodyreading and how to connect into fascia in order to take it in desired directions. The practical section will look at addressing some of the areas covered by these lines, looking at techniques borrowed from structural work but also how we can use the information the lines provide us but to address the issues with techniques we already have in our "toolbag".

For further reading:

- Anatomy Trains: Myofascial Meridians of Manual and Movement Therapists. Thomas Myers (2001) Churchill Livingstone
- The Endless Web: Facial Anatomy and Physical Reality. R. L. Schultz and R. Feitis (1996) North Atlantic Books
- Rolfing: Reestablishing the Natural Alignment and Structural Integration of the Human Body for Vitality and Well-Being. Ida P Rolf (1989) Healing Arts Press

JAMES EARLS BA (Hons) KMI is a massage practitioner and has helped form a number of associations and networks for the support of local therapists. Having completed the Kinesis Myofascial Integration training with Tom Myers in Boston, he is one of only three fully trained practitioners in Britain. He is currently writing an introductory series on anatomy for the Massage World magazine.

James is presenting two workshops at the SMTO Conference 2003, on Saturday 22nd March 2003, entitled, "STRUCTURAL INTEGRATION". Following on the work of Ida Rolf, Tom Myers has developed a new approach to looking at the body using his concept of "myofascial meridians". These lines are formed by the continuation of the fascia from one muscle or structure into the next creating forces that can be carried throughout the body. The theory gives us a model through which we can interpret postural patterns and be able to address them in a more comprehensive and holistic fashion. In each of the two sessions there will be an overview of the theory, and a look at one of the "Anatomy Train" lines (a different one in each session), their assessment and some strategies for their treatment.

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