



EMAGAZINE

ISSUE 3 FREE



CREATING SPACE --- IN THE BODY

FEATURING EXCLUSIVE INTERVIEW
WITH TOM MYERS

MY FASCIA BY JAAP VAN DER WAL



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Welcome to the 3rd edition of our E-magazine. We are very excited to announce that our E-mag has gone global! It will not only represent Anatomy Trains Australia & New Zealand, it will now showcase all of the Anatomy Trains global family!

We have a very talented group of international teachers, running workshops all around the world. The E-magazine will help you to keep in touch with our latest workshops and research, as well as articles from guests and friends of Anatomy Trains.

The beautiful cover picture for our 3rd edition is of one of our talented teachers, Karin Gurtner. Karin runs art of motion and, in line with Tom Myers Anatomy Trains, has developed Anatomy Trains in Motion -- for Movement Therapists. The picture thoroughly represents the essence of this edition, creating space, length and ease in the body whether through manual or movement therapy.

We also had the pleasure of interviewing "The Boss", Tom Myers and we touched on various topics. I hope you enjoy our very honest and random interview, I don't think I will be giving up my day job just yet!

We are also very excited to feature an article by Jaap van der Wal, a hero of mine, who I first had the pleasure of listening to at the Fascia Conference in Washington in 2015. Following on from the conference, I spent four days in Maine attending his workshop on *The Ultimate Embryo: Coming into Form*.

We also feature articles from two more of our talented teachers, Wojtek Cackowski and Lauri Nemetz. Wojtek represents Anatomy Trains in Poland and Lauri is part of our American faculty who also works with Tom and Todd Garcia in the dissection lab.

We have a research review by Holly Clemens, which will become a regular feature in our E- magazines. We are also very pleased to introduce you to Fiona Palmer - our teacher in focus for this edition. Fiona teaches in the UK and gives us a personal account of her journey to become an Anatomy Trains teacher.

I hope you enjoy this E-magazine as much as I enjoy putting it together. If you have any questions, feedback or an area of interest you would like us to feature, let us know.

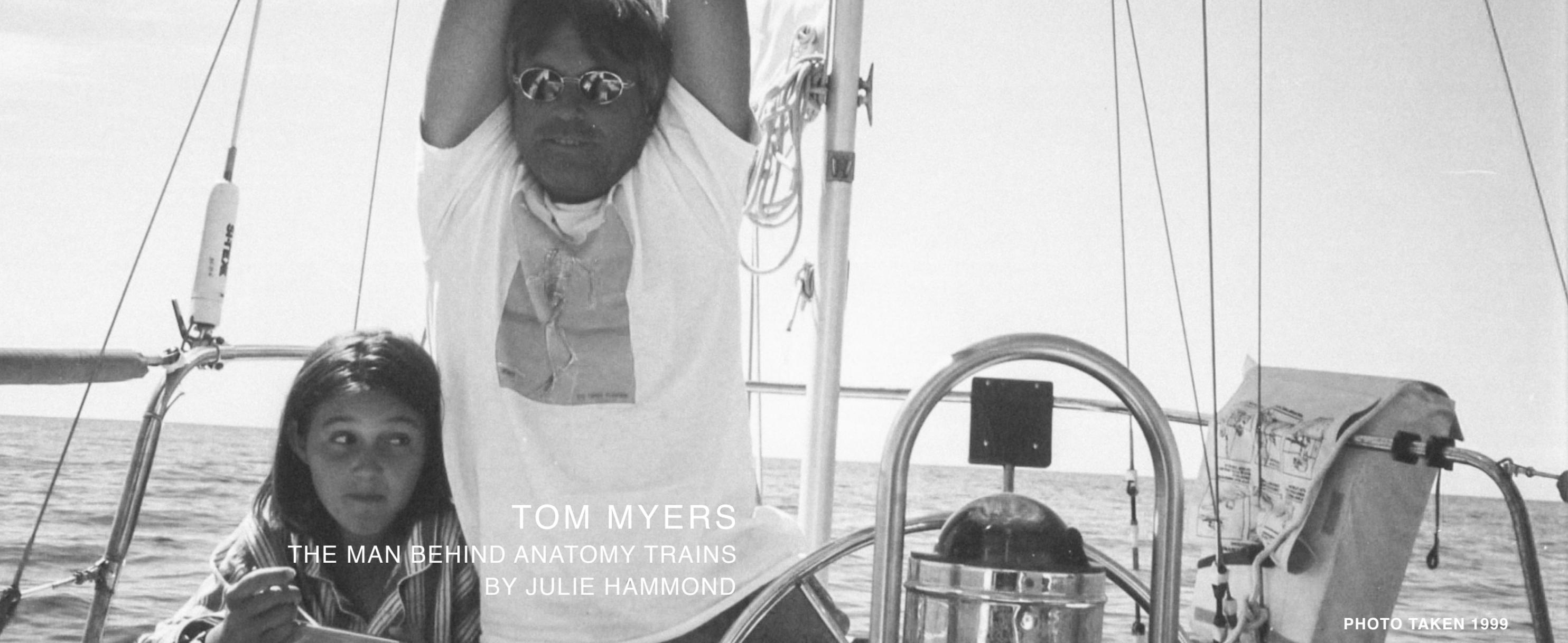
Enjoy,

Julie Hammond

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"The one thing that you have that nobody else has is you. Your voice, your mind, your story, your vision. So write and draw and build and play and dance and live as only you can." —Neil Gaiman

Or as Oscar Wilde put it: "Be yourself; everyone else is already taken."



TOM MYERS
THE MAN BEHIND ANATOMY TRAINS
BY JULIE HAMMOND

PHOTO TAKEN 1999

Julie: Thank you for taking time out of the dissection lab and your busy schedule for this interview, I really appreciate it.

How long have you been running the dissections?

Tom: I did my first dissection as a student in 1974 as preparation to becoming a Rolfer. This was at a lab outside of Berkeley in California. I gained the trust of the teacher so I did a lot of work in that lab before becoming a bodyworker and doing various dissections along the way. But it was really in 2003, I believe, that I started these dissections with Todd Garcia and they have simply become more popular over the ensuing decade.

Julie: After being in dissection classes, my views completely changed on anatomy and I realised the body is nothing like you see in the books. Because you have spent so much time in the lab, how has it changed your views or opinion on anatomy?

Tom: The major thing that has changed is the donors we are able to work with. At first we were only able to obtain cadavers that had been preserved with formaldehyde - that presents a very different picture of human tissue and that's the picture shown by most of the books you read, like Netter and Clemente, show. All of those atlases are based on dissection of preserved cadavers. Only recently were we able to connect to a program where we can get untreated cadavers, which is essentially cadavers that were frozen shortly after they made their transition and thawed out for dissection. This presents such a different kind of tissue, the body moves around as it would in life. The connective tissue is much more like it would look and act in a living human being. It allows you to see the process of a human being, not just the "thing". That has been a revelation for me - at this point I prefer to work with untreated cadavers for the duration.

Julie: What about your own personal opinion of anatomy, has that changed?

Tom: Absolutely. If you do dissection on the preserved cadavers you end up with pictures as they look in the books. You end up with your feelings about muscles based on what you saw in the books. However, if you go to the untreated cadavers, what is immediately evident is that the fascia is a restricting device, it is the membrane that is pulling in against the skeleton. As soon as you make a hole in that fascia, below the skin (the skin and the fat are very loose and able to be moved around but underneath that is a kind of cling wrap layer that holds all the muscles in). As soon as you cut that layer, everything wants to open up. If you happen to make a mistake and cut two layers down to where the muscle is, the muscle literally bulges up like a balloon through the hole. So you have this feeling that I didn't really have before. If you think that the book show the way the body works, that there is a skeleton and

each muscle is hanging off the skeleton from point to point and moving it around, which is the notion of anatomy we all live with. With so much of that education being built around this model, you don't get this idea that the whole tissue on the outside is restricting in and the tissue on the inside is pushing out and actually your stability is created in the balance between those two. Of course this is animated in somebody who is alive and not animated in someone who is not alive. But what is so totally surprising in the untreated cadavers is that as soon as you take a muscle off the body, or any structure off the body, it turns into a glob of jelly; really disconcerting when you first encounter it. You take a muscle like the Gastrocnemius and soleus together, because they come down into the Achilles tendon, and you say "oh look, I found the gastrocnemius" and you cut it off behind the heel and the knee where the head's going under the hamstring, you take it off to show somebody - you turn around and it's turned into a glob of tissue in your hand. Unless you take it and pull it, you can't even see that it's a gastrocnemius with an Achilles tendon on the end.

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BY JULIE HAMMOND

So working with these cadavers has impressed me with how much anatomy is contextual. It only exists as a gastrocnemius and a Soleus because it's stretched between those two points and as soon as you stop stretching it between those two points it loses form. So the form, the morphology of the human being, is determined by the complex dance of tensions that are created by the body and as soon as you take those tensions away it becomes globular. We confirmed this under a microscope, we took a piece of very fibrous tissue and put it under the microscope and pushed it around with a probe and you could hardly see any fibres at all, it was all just this amorphous gel. Anatomy is only anatomy in context - it's a really great argument for Bio Tensegrity - take one part away, and the whole thing will adjust like a poked spider web, but the part you took away also loses its shape when it loses its place in the whole.

Julie: I have seen you in many different social situations and seen you in many different roles. On stage you are very charismatic, confident and comfortable presenting but when you step off the stage you are very different, so how would you describe yourself?

Tom: Shy and introverted.

Julie: That is how I would describe you but just wondered if that is how you would describe yourself.

Tom: Yes, there are a lot of performers who are introverted and who are very good performers when they are on stage and I would say that I am in control when I am on stage. Essentially people have asked me to be in control when I am on stage and I try to do a good job of it. I don't want to take credit for almost anything I have done, for one thing I am a wholesale thief of other people's ideas. I really got so much from Ida Rolf and Buckminster Fuller and from other people I have taught for, I feel I have been very fortunate. I also have been very lucky with my students, in them asking wonderful questions and being very tolerant of my idiosyncrasies, but when I get off stage I am not terribly comfortable socially. I used to hide behind my guitar and now I hide behind a smile or my grey hair or something. You are making me uncomfortable even asking this question.....

Julie: How old were you when you first got into bodywork?

Tom: I was 24 years old when I ran into Ida Rolf, that was in California. I had just arrived in California and I was into what people nowadays call New Age but at the time it was called the Human Potential Movement. I was learning tai chi and I was learning to meditate and people were talking about Rolfing - this incredibly deep bodywork that tore muscles from the bone and made you scream and, it was the 70's so, I had to do it. I found out Ida Rolf was giving a class and I drove down there to see her. I was so impressed with her style of thinking and her work that I said "I want to do this". I took the anatomy class I spoke about earlier and I took a massage course in order to get myself licensed as a massage therapist and, as soon as I could, I presented myself back to her as a student.

Julie: So you studied with Ida fairly quickly in your bodywork career?

Tom: I started with regular Esalen massage but that was just the ticket to get me to be with Ida Rolf. I practiced massage only for about six months, just as a way of earning some money to get to Rolfing school. It was Rolfing that attracted me as a craft and as an intellectual exercise. I love massage and I love receiving massage but I did not want to be a masseur as a profession. I wanted to practice this thing Ida Rolf was showing me which was actually how to change shape. That has been the question I have now been asking for the last 45 years - how do we get into the shape we are in and how do we change that in a positive direction? That has led me not only into bodywork but into movement, exercise, psychology, anthropology and all kinds of stuff. How do we shape ourselves and how are we shaped?





TOM MYERS

THE MAN BEHIND ANATOMY TRAINS

BY JULIE HAMMOND

Julie: When I first met you, you spoke about spatial medicine and this really resonated with me and sparked my interest in Structural Integration. So can you explain more about spatial medicine?

Tom: I coined the term "spatial medicine" and I am sure at some time somebody else will coin some other term for it.

If you look at the branches of medicine that are going on today, you could say there is a medicine that deals with matter and that is the medicine that is in the ascendancy. That's the medicine of drugs, whether taken orally or injected. I would also include food as medicine and herbs, supplements; those are the kind of things where we are trying to change the chemistry of the body and make more health that way.

There is a whole other branch of medicine that deals with your relationship to time and that is called psychology or psychotherapy. In a sense all psychotherapists are Buddhists - they are trying to get you into the present moment and not to be anxious about a future that hasn't happened yet, or be affected by a past that is passed, so you can let it go and get into your proper time.

The medicine of space is the medicine of how our bodies develop in space and how our bones, joints and nerves work together.

So there is this whole field of spatial medicine that includes personal trainers, Pilates teachers, yoga teachers, orthopaedic surgeons, physiotherapists, chiropractors and they are all working in the same domain of morphology. How we take form and how the form changes. I am not saying that one approach to medicine is better than the other but what I am saying is spatial medicine isn't organised as well as the other two yet. Psychology has its Freud, material medicine has its William Harvey and Jonas Salk and other people who have made great strides in chemical medicine.

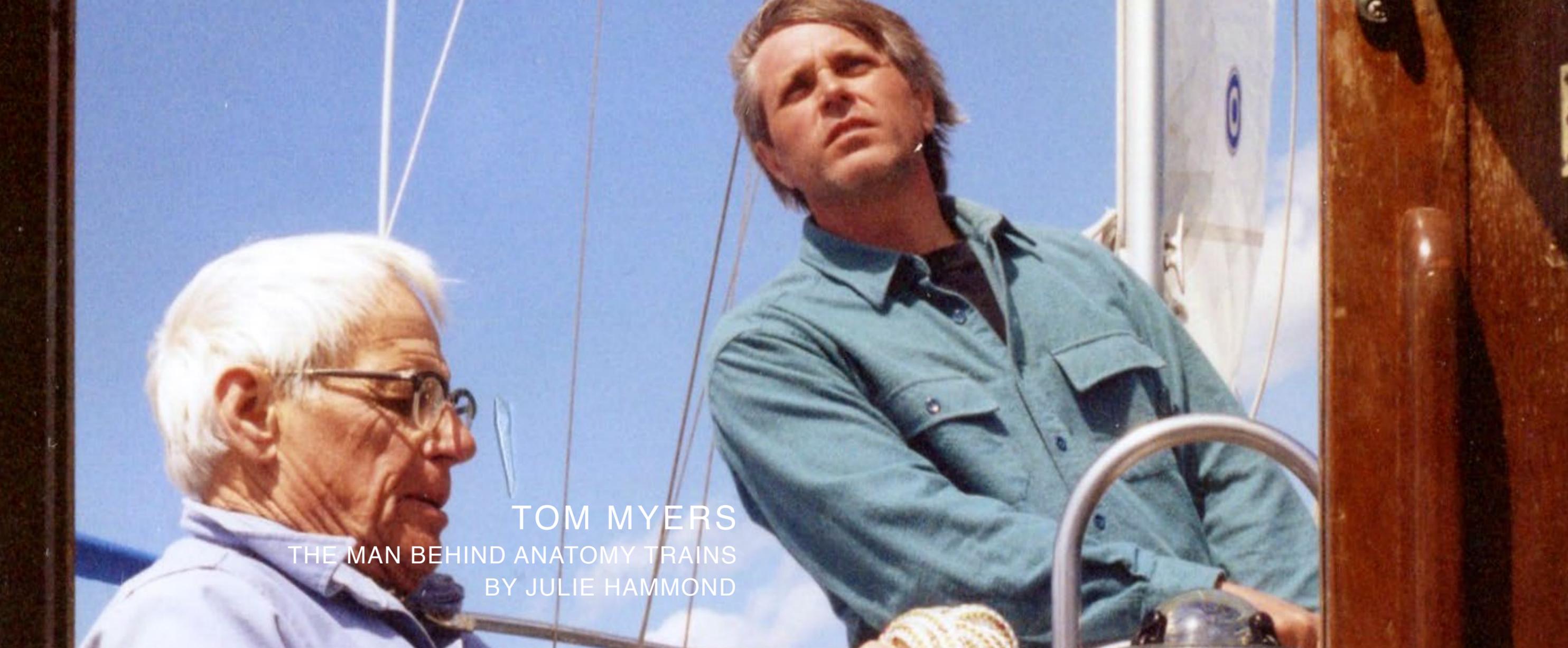
Spatial medicine has people like Andrew Taylor still for osteopathy or Ida Rolf for soft tissue work etc. but it has not all come together with one coherent theoretical basis that everyone from surgery and rehab down through bodywork and athletic training to the very practical question of how we formulate a physical education for the 21st century. Part of my life's work is to try to define the boundaries of spatial medicine and bring the practitioners together, make them use the same language in the same room. The current reality is that, everybody is using the same term for different things or different terms for the same thing. It's really important, I think, that the whole fields come together and make common cause.

Julie: Your book does just that, it is suitable for such a wide variety of health professionals, did you always plan it that way?

Tom: No, when I first wrote the book I thought I would be lucky if 3,000 people bought it. It's now just crossed 200,000 copies, which is pretty good for a text book but, more to the point, it's a text book in a nursing programme, so I have found out. It's in 13 languages - we have personal trainers and the whole gamut of movement people looking at it as well as osteopaths, chiropractors and people like ourselves who do the structural soft tissue work. It turned out to be much more universal and interesting to more people than I had thought when I first wrote it.

Julie: So was Ida Rolf your first inspiration and who has inspired you since?

Tom: Ida was my first inspiration in bodywork absolutely. You mentioned that I have confidence when I am standing up and teaching - I really want to mention Dan Seltzer, he was a professor at Harvard where I went to university and, generally speaking, if it has a practical application they don't teach it at Harvard. It was great to find this professor who taught a group of us to work as an ensemble theatre in a way that I loved. He was my first inspiration. However I did realise I was not good enough at either acting or directing to make a living out of it but I still do a lot of acting when I am up on stage, as you would also know because you are a teacher. It's somewhat of an act.



TOM MYERS
THE MAN BEHIND ANATOMY TRAINS
BY JULIE HAMMOND

Then the second teacher who was really inspiring to me, and certainly is a silent figure behind the Anatomy Trains, is Buckminster Fuller. I studied with him in the latter half of my college career - my degree is actually in design and I would say that the Anatomy Trains is Buckminster Fuller's whole system theory applied to anatomy. I was using his kind of thinking when I started looking at the musculoskeletal system. I met those two people before I met Ida Rolf and since then I have been inspired by lots of people such as Moshe Feldenkrais, Emilie Conrad, Judith Aston and various European osteopaths including Jean Pierre Barral and very many people that I have met along the way that have taught me a lot.

Julie: Just before Christmas I got in touch with my first mentor who taught me massage and introduced me to your work. I got in touch to say thank you and to tell him how much he had changed my career and my life. It was him that introduced me to Anatomy Trains. Did you ever get a chance to thank Ida Rolf for inspiring you? Or to tell her how much she influenced you?

Tom: Ida Rolf wasn't that easy to talk to in that way. I think the closest I could get to that was when I was in my advanced class with her, which was the last class she ever taught as she died a few months later. There was a break and everybody went out to tea and she was left sitting, she was in a wheelchair by then. I went over and asked her if she wanted a cup of tea and you don't often get people like that alone. So my way of expressing my gratitude was to say "boy you started this work and now it's clear it's going to survive beyond you." At that time there were 200 people doing it, now there are thousands doing it. "Anyway how does that feel that you have started this thing that is going to live on" and she waved her hand dismissively and said "I was just getting going and my body gave out." At that age, in my twenties, I didn't really understand that but now at 68 I really do understand that. There is only a certain amount of time left and there is so much work left to do and I feel I am just getting good at what I am doing and I look up and my hair is grey. A human life is so short compared to what humanity has to get done.

Julie: I wanted to ask you about Leon Chaitow who I know was influential in getting you to write the book.

Tom: Absolutely I would not call Leon Chaitow one of my theoretical inspirations but boy he was just so helpful to me in getting my career started, my hat goes off to him.

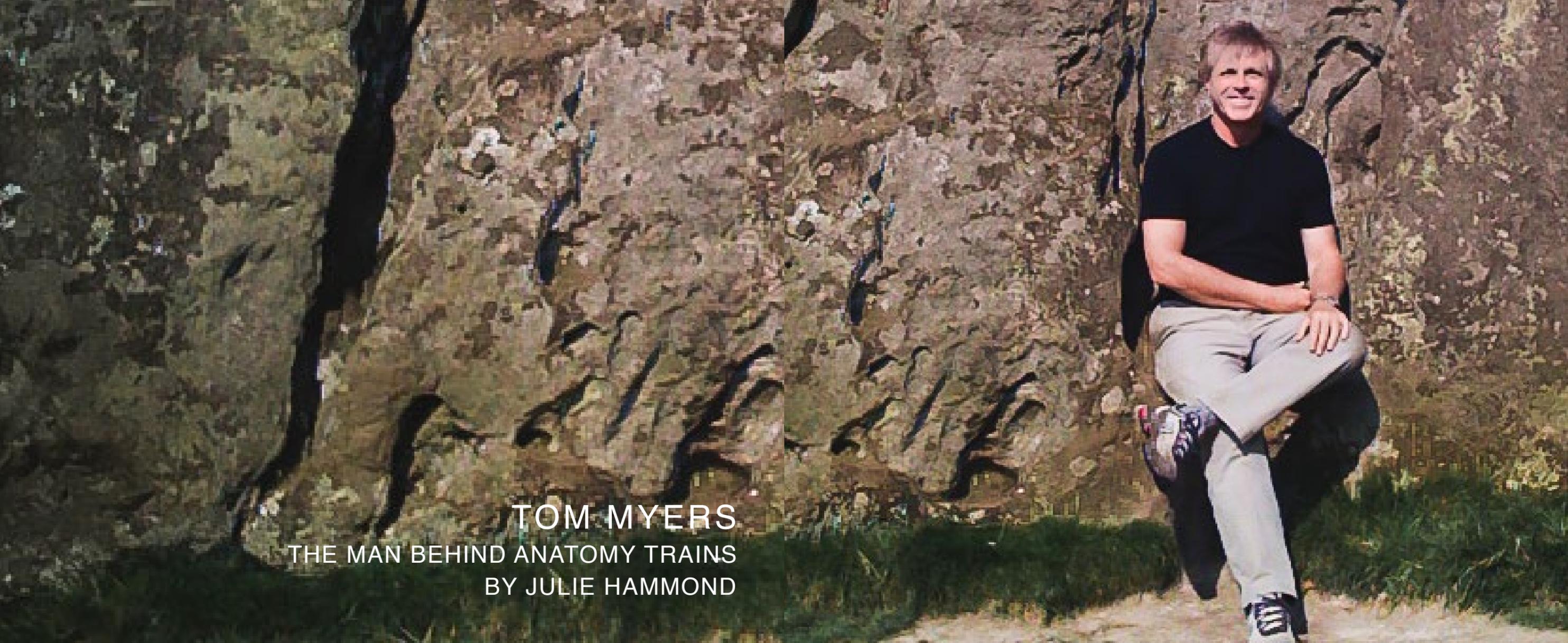
Julie: The other person I do want to mention and I hope you don't mind is Annie Wyman. I know she was a huge influence to you as well as being a dear friend.

Tom: Yes, I was in a low period of my life and in the process of divorcing the mother of my child and all unwilling. Annie was incredibly helpful to me, she got me up and said "you have to teach this" and she got me teaching small classes in Portland, Maine. Very shortly after that Lou Benson heard about those classes and came up from Boston. So Annie and Lou were very instrumental in getting me to lose my blues and get up and start teaching and that's when it really started in earnest.

We started doing classes, we started making a program and then somewhere around 1998 to 2000 I broke away from the Rolf Institute and started my own Structural Integration school in which you took one of the first courses we had in England.

Julie: How many KMI graduates do you have worldwide?

Tom: I think we have between 500-600 worldwide. KMI is a very big investment on the student and a big investment on the part of the teachers because we like to keep the teacher student ratio low. Each of those 500 people represents a very big investment on our part and on their part.

A photograph of Tom Myers, a man with short grey hair, wearing a black t-shirt and light grey trousers, sitting on a thick tree branch. He is smiling and looking towards the camera. The background is a dense forest with sunlight filtering through the trees.

TOM MYERS

THE MAN BEHIND ANATOMY TRAINS

BY JULIE HAMMOND

Julie: What would you like to see happen with Structural Integration, where would you like it to go?

Tom: Structural Integration has around a dozen schools now, most of them very small. I hope Structural Integration will turn into a profession. I don't want to be discouraging about that but I really want to turn my mind to the spatial medicine that we were talking about earlier - which is to try and get everybody involved in the changing of the body to come up with a coherent theory that goes all the way along. I do think that Structural Integration, deep manipulation of the soft tissues that hold the bones in place, is a very valuable way to go about it and to think about it as a whole. I think Ida Rolf's work was genius but so far building a strong organisation has escaped our efforts. I do think spatial medicine is coming together in a very big way and I think it's important that it comes together. You have heard me do this rap before - people are moving less and less, we are medicating students who can't sit still all day, where I think asking students to sit still all day is the problem.

So I think moving around the classroom is a sane response to an insane request and we need to bring movement into education more, or movement into the world more. I just spent 7 hours being delayed in an airport because of the snow and I was over in the corner doing stretching and tai chi and I was the only person moving, everyone else was sitting. I would think an airport is where people ought to be moving a lot, they are about to be crammed into a seat for however many hours, so airports ought to be centres of movement. I think that would be a really important thing in spatial medicine. It has to do with people maintaining their health instead of becoming more sedentary.

Julie: This would be a great idea - yoga or mat classes starting every 1/2 hour! Install them in all the major airports. You never know someone reading this might just take up the idea.

Julie: You have a global group of teachers who teach all over the world - do you ever get overwhelmed with that thought? Do you ever think bloody hell how did that happen?

Tom: Oh yes, I think bloody hell how did that happen but I don't get overwhelmed by it at all. We don't cultivate teachers for their conformity, we pick teachers for their individuality and their originality so I have no fear that when I either die or quit, whatever happens first, that those teachers will find places for themselves in the world with no problem because they are such talented and individually motivated people. I spent my first 30 years as a practitioner. I don't have business skills, so running an organisation like this when you are such an introvert can be a challenge. I am such a shy person who is likely to be washing the dishes at a party to avoid making small talk with people so managing a group of 25 teachers is a little daunting to me, but not the people themselves. I love all of our teachers. We have such a great group and I am privileged to be able to work with them.

Julie: James Earls, director of Kinesis UK and author of 'Born to Walk' has added functional movement and gait to Anatomy Trains and in doing so added another layer and depth to the training. Ari-Pekka Lindberg, your teacher from Finland, has added his functional movement and rehabilitation emphasis to Anatomy Trains, along with Karin Gurtner who has developed Anatomy Trains in motion for movement therapists. How does that make you feel? How exciting to think that these people are progressing what you started all those years ago.

Tom: Yes, because I started it very much out of that manipulative tradition of Ida Rolf and I am just so pleased that people have found enough value in it to apply it to contemporary Pilates, in the case of Karin, and kettle bells and personal training in the case of Ari. James in particular, by combining gait work and the Anatomy Trains, has made a significant contribution to the understanding, not just of Anatomy Trains but of how the connective tissue works elastically in the body.

TOM MYERS

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It's very easily demonstrated by the fact that if you are walking through a museum and stopping and starting to look at exhibits, you get what I call "museum feet." Within about two to three hours of being in a museum I have just about had it and I need to get out and walk some more. That's because the whole leg is designed to collapse and rebound, collapse and rebound and, when you are doing that very slow shuffling that you do in a museum, you aren't getting that collapse and rebound. As soon as you get out and start walking more quickly your body renews itself walking. Your body has 4 million years of on-the-job training so walking is one of the greatest things you can do for your health.

Julie: There seems to be a huge divide, you are either a fascia lover or hater with no in between. There have been some big debates on forums about fascia and you in particular. Similar to fascia, you are either a Tom Myers fan or very against. It is also assumed if you are a fascia fan you obviously have no understanding of any other systems including the nervous system. This upsets me because as a bodyworker my intent is to help the client become more body aware and in turn help with their pain. I just look at it from a Structural Integration point of view. Do you get involved in these debates? How do you feel about them? Why, when we are all trying to do the same thing, does there need to be this divide?

Tom: There has to be these debates, they don't have to be rancorous but we have to have these debates. Because this is a young science, if we start thinking about spatial medicine, there are people coming from the physio side, from the rehab side, from the physical education side, from the therapy side and we all use different language.

I am very interested in the fascia because it was forgotten as a system. We thought about individual tendons, individual ligaments, individual sheets of fascia like the thoracolumbar fascia or the iliotibial tract but we never thought of the fascia as a system because it was the environment, it was the context, it was the system we were cutting away to see all the other systems. It didn't get seen as a system on its own. Now we are learning about that as a system and I think it's very important because we haven't had the information about that system.

Now some people have gone way over enthusiastic - that everything is fascia. Definitely I am a fascial enthusiast but you can go too far with this thing. Fascia isn't everything, fascia isn't your mind although we can ask about its role in consciousness. "This interaction between the circulatory system and the movement of chemistry and the movement in the nervous system signaling back and forth - it's all taking place in this fascial context. Right now, this decade, we are finding out a lot about the fascial story and we continue to better our understanding of that story. The fact that we haven't yet understood the story is so easily described in what system you are talking about - oh I am talking about the musculoskeletal system, but when you say musculoskeletal system you leave out a whole set of tissues that hold these two things together and neither muscular system nor skeletal system makes sense without the fascial system to go around it. The pelvis system makes absolutely no mechanical sense without the ligaments. Those ligaments make no mechanical sense, (now here I am stepping into new territory using Jaap van der Wal's ideas), those ligaments make no sense unless they are reinforced by the muscles that are near them. Until recently, we didn't think about that. If you want to know about the sacrospinous ligament, you go over to page 34 on ligaments and you see the sacrospinous ligament as a pelvis ligament. If you want to study the coccygeus muscle, you go over to page 86 and there is the picture of the coccygeus muscle. But in fact those two are right on top of each other, reinforcing each other. They are really one structure in the body but two separate ones in the book. Van der Wal's work shows us the reality that the ligaments are "adjusted" to be more or less taut by the muscles. This kind of understanding is very important to get out to the world, but fascia is simply not the answer to everything.

What is a concern to me is how do I resolve pain patterns in people and get pain to leave, because when pain leaves, what's left is space to move, the real gift of spatial medicine. People move into that space with their awareness and all of a sudden they are doing things they weren't able to do before. It's that kind of thing that inspires me to keep going and has made my practice so satisfying.

Julie: What does your daughter think of what you do?

Tom: Such an interesting set of questions you have! Both her mother and myself are in the healing trade. Her mother does the work of Peter Levine, somatic experiencing, working with trauma in the body. She thinks we are both crazy but loves us both. She is very pleased with how successful the Anatomy Trains has been but she works for google and is on computers from dawn until dusk and so she is not following in our footsteps. I know she is proud of what I do, as I am proud of what she does and how she has turned out. She thinks the dissections are pretty crazy and maybe I should stop traveling so much.

Julie: What would you like to do in the next few years and what do you still have on your bucket list?

Tom: There are a few places I would like to go. I am headed for Istanbul and Israel this spring and I am headed down to New Zealand to see you. I have been to New Zealand once and I am looking forward to seeing more of that. I am certainly looking forward to going to Israel, not just for the touristy parts but for the sociological part, but those are personal goals. Another personal goal would be to sail from New York to Maine.

Professional goals - they really are encased in what we were talking about earlier in terms of spatial medicine. I would like to use the platform that Anatomy Trains has become to try to bring together the practitioners of spatial medicine. It's fun for me to go and do a class for a speciality group. It looks like I am going to do a class for dentists in Japan coming out of this dissection - it's very interesting to talk to a group like dentists because they have a special vocabulary, they have a specialised set of knowledge and you can really focus on something. But a lot of the classes I am doing now in Anatomy Trains are classes that bring in people from all different walks of life, from people who are doing power lifting to people who are doing delicate Tai Chi to yoga, and it's my joy to try and bring these people together to talk the same language, to get them on the same page using fascia and movement as a medium for having this discussion. I see my contribution for the rest of this lifetime is to try to bring these professions together and to get a coherent theory of form and movement going on the planet because I think it's going to be very necessary for our children, as our children are simply not going to be living in the three dimensional reality we live in. They are going to be living in a four dimensional virtual world some of the time, if not a lot of the time. They still need a certain amount of

movement and nutrition. Actually I would say movement is a form of nutrition, and too many of us are on a junk-food diet. In terms of movement, I still don't see that being addressed. So many things related to movement are being taken out of schools. Music is a physical skill and there is not much money for music. Dance is a physical skill and there is not much money for dance. The same with art. This is really terrible because our school kids aren't getting the physical stimulation. I regard this as a crisis that we in the bodywork world, whether you are doing yoga or bodywork or anything, (any movement is better than no movement), we need to get into that.

Julie: Last question, if you could go back in time and give your younger self advice what would it be?

Tom: Relax!! I have always been a fairly intense person, to the despair of the people around me, so I would give advice to my younger self to relax. But I honestly just feel that I have been so fortunate with teachers that I feel like I have been dragged kicking and screaming into my future. I will say to the younger people out there that it doesn't stop, you just keep learning. I watched my mother go through the death process this year - she withdrew from this life very slowly over several months and I watched her learning, right up through that process, learning emotionally right up until the end. I would say to the younger folks, you know what, you are going to still be learning even when you are my age, even when you are older. So just stay open to opportunities for education because they sometimes come in unexpected ways and sometimes it requires a good deal of discipline to not jump away. If I look out at the world at this advanced age and try to look back, who knows why this planet is here and what we are doing here. The earth as school is certainly something I have found as a very useful metaphor and I have used the earth as a school and tried to create a bit of schooling on the earth for other people who want to learn.

Julie: Thank you for answering all my random strange questions and for being so honest it has been a pleasure chatting to you.



MY FASCIA

JAAP VAN DER WAL, MD, PhD

Why is it that I, as an embryologist with over thirty years' experience in presenting courses and seminars on what people call a spiritual embryology but what I prefer to refer to as a phenomenological embryology, inspired Tom Myers to refer to me as "the harbinger of the future" in his Newsletter of March 2011? Tom states there: "Getting stuck in the cul-de-sac of 'muscle' as a functional unit is an understandable, conceptual error – it fits our mechanistic worldview and is very convenient and logical" "But our children, the next generation of hands-on and movement therapists, will start out with a new unified vision, built from the kinds of ideas we are debuting here. Hats off for Jaap van der Wal, harbinger of the future". What has the concept of Anatomy Trains to do with fascia, architecture, meso and in the end with phenomenological embryology?

My first inspiration to present a more holistic view on the human embryo originated from the anthroposophy. But over the years I have received more and more invitations from other philosophies and professions like osteopathy, craniosacral therapy, polarity medicine, structural integration (Rolfing) and now also from Tom Myers. I found out that my phenomenological human biology, also called dynamic morphology, interests and inspires all kinds of people who at least seem to consider the human being as a being of spirit and matter, of soul and body. Like I do. I am not an osteopath but have become more and more acquainted with the concepts of Anatomy Trains. From Still's work, I understood that in osteopathy it is about the twofold image of man (be aware: that is something else than the dual or dualistic image of man introduced by Descartes). Still compromises his view in the one-liner: Man is Mind, Motion, Matter. But I met more inspiring philosophers and professionals who recognized my more holistic and spiritual approach to the human body in general and of the human embryo in particular. For example, Polarity Medicine with its founding father Randolph Stone and Structural Integration by Ida Rolf. I consider myself as a person able to think in a pluriform way and I do not like to be categorized. In this respect, I'm very happy that my phenomenological embryology has been recognized and appreciated by so many different professionals in treatment, therapy and human biology.

My courses called "Embryo in motion" or "The embryo in us" or "The human being as embryo" have become an important mission for me to show people that one can found a more spiritually oriented view on embryology simply on scientific facts but you never can 'prove' or 'make evident' that spiritual aspects in man and world

really exist. In modern science, there is no methodology to make the so-called supersensible or spiritual dimension evident or ponderable. On the other hand, everything that I present in my phenomenological, or spiritual embryology, is founded on scientific facts and evidence. In my opinion, modern so-called 'regular' and 'valid' science produces a half-truth. Not falsehood or untruth but a half-truth: constantly the aspect of finality, of giving meaning, of spirit is absent. So, one could construct methodological bridges between natural science and spirituality but it will never happen that a more holistic or spiritual image of man will be recognized or accepted by the authority of natural science. However, many of the people who attend my courses and appreciate my articles recognize that the phenomenological approach at least could serve as a meaningful addition, completion or extension to regular science, which is more in harmony with their attitude and approach, for example anthroposophists, osteopaths, craniosacral therapists or Rolfers.

But, how about 'Me and my fascia'? After my medical study and my graduation as a medical doctor I was trained as a classical medical anatomist. During my training, and in my functioning as researcher and teacher in the domain of human anatomy, fascia as an organ or system was not an item at all. Of course, we as medical anatomists knew about certain fasciae in the body, we gave them names and we dissected them according to the dissection manual but something like a system of connective tissue in continuity and coherence with other muscle tissue was not known. Or rather one could say: it was not recognized and appreciated as such. Indeed, in circles of regular medical anatomy in Holland, the research that I performed at the University of Maastricht, Holland with my former colleagues (Henk van Mameren and Jan Drukker) as to the architecture of the connective tissue in the Position and Locomotion System (PLS), was received as a kind of self-willed stubborn alternative rather than as a welcome supplement or completion. It became clear that thinking in architectural, and therefore different mechanical relationships in the Position and Locomotion System, required thinking through and across the well-known anatomical entities like bones, muscles and ligaments. In fact, this required a 'trans-anatomical' view. Within the circles of scientific establishment, such an approach is not very popular.



MY FASCIA

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Together with my friend and colleague Henk van Mameren we even took the next step: it started to become clear to me that the analytical approach of the 'old' and outdated dissectional anatomy had led to a (in my opinion fatal) logical error which fits with, and also feeds, the concept that the whole, an organism, has to be considered as being built from organs and parts like a machine. This represents the widespread analogy nowadays and is conceptualized and pushed too far in many modern anatomical atlases (like Prometheus) leading to a kind of caricatural incoherent anatomy of the human being, with the body presented as a bag of organs.

It became clear to me, by applying the embryological way of thinking to the anatomical approach or mind and comparing the two ways of thinking with each other, that in fact the anatomist destructs more than we care for. It seemed to me that in the past few centuries in particular, the notions that I started to hear from osteopaths when they talk about fascia (such as continuity, integration, organization, tensegrity) were banned from the jargon, and therefore from the mind of the anatomists and medical doctors.

Even more: such notions and concepts were systematically abolished in a kind of scientific ascetic attitude and 'political correctness'. This could be the cause of the methodological and philosophical cleft which seems to exist between osteopathy and medicine but that however, on further consideration, can simply be overcome by completing the medical-anatomical mind and thinking with a more so-called holistic approach. In this way two so-called 'half-truths' can become a complete whole (the notion 'extension' – Erweiterung (DE) - is often applied by Rudolf Steiner when he tries to defend the anthroposophical approach as a scientific method).

In the 1990's, my scientific work about the architecture of the connective tissue and the role it plays in the functioning of the Position and Locomotor System, as well as in the organization of our proprioception, more or less disappeared 'under the carpet' because of simple arguments of career. I changed my job and therefore I could no longer contribute to the implementation of all those new concepts and points of view.

Despite the efforts of my former colleagues, the architectural concept, although partly recognized in circles of anatomists, was hardly accepted in clinical circles of orthopedists and physiotherapists. In 2009 however, a former colleague named professor Huijing, chairman of the Anatomy Department of the Amsterdam University, was charged to organize the Second International Fascia Research Congress in Amsterdam. He realized the meaning of my former scientific work in the framework of the concepts about fascia, as he was just becoming acknowledged within the circles of osteopathy and fascia research for whom he was organizing the congress. So he invited me as key note speaker.

To take the bend sharply, it came out that in my lectures and publications in 2009 I was able to focus attention on the continuity of the architecture of connective tissue. I could show clearly that thinking in models of 'muscle men' or of a so-called 'locomotion apparatus' is outdated. They were conceptualized as being built up from separate unities like muscles, ligaments and bones.

This may be helpful in practice and practically applicable but theoretically we deal here with a functional impossibility and a so-called 'half-truth'. "That your theory is 'working' in practice, does not prove that the concept is right", is one of the things I learned from my teachers in scientific philosophy. Even the brains of human beings "do not know about muscles": Our organism lives, and is in itself organized, in motions and movements which are per se phenomena that go beyond the anatomy of muscles. Moreover, in every so-called Position and Locomotion System (including its formation and development) one deals with only two mechanical forces: (stated simply) tractive or tensile forces and pressure (strain) forces. In this way, I could develop out of the Maastricht procedure of 'connective tissue sparing dissection' (in itself a contradiction in terms) the concept of dynaments - architectural units of connective tissue and muscle tissue in series with each other.

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Those units exist between the skeletal elements in two ways: connecting the elements and shaping space between them (contraction and dilatation). More or less by accident this concept of dichotomy (twofoldness) in the Position and Locomotor System seemed to cope with the model of tensegrity that became more and more popular in circles of 'fascia-thinking'.

The latter model therefore seems to be supported and confirmed extra by the former concept of thinking in architectural units instead of muscle units, because in this way the more or less static model of tensegrity could be transformed and converted to a more dynamic model, a truly Position and Locomotion System. Moreover, the 'dynamment-model' is more in harmony with another concept that I constantly try to focus on, and that is that our so-called 'locomotion' actually is not (only) motion or movement but in fact a very rapid high frequency changing position. Our conscious locomotion therefore seems to look more like a 'Gestaltung (shaping): the notion of a Position and Locomotion System. The central activity of such a system or apparatus is represented by permanent preserving or maintaining the stability and the equilibrium within the whole apparatus: the whole body as well as the whole apparatus takes part in the position keeping and motion of the parts and elements. Adding the fact that in the brain the organization is not according to the apparatus model but according to the motion concept, it became clear to me that the concept of architecture of connective and muscle tissue is far more fitted to understanding the phenomenon of human positioning and locomotion. In this context, I started to fully appreciate the myofascial linkages and 'Anatomy Trains' as conceptualized by Tom Myers when he formulates for the Position and Locomotor System the concept of "Islands of compression floating in a balanced sea of tension". If one considers the way Blechs Schmidt presents the fields of dilation in the embryo that give shape to muscles, one could see, in combination with related retention fields, the shaping of dynaments rather than of muscles plus tendons or aponeuroses.

In the meantime, I began to realize that in my functioning as embryologist and in my embryological mind I had become more focused on complementary science and methodologies like the phenomenological approach and that I had developed the latter approach separately to my official scientific research in the academic circles of universities. In my mind there took place a very important insemination between, on the one hand the anatomical apparatus-approach and, on the other hand the phenomenological gesture-approach. I simply

started to ask the question: "Where is that fascia coming from and what could that tell me about the functional meaning of fascia?" Not explanation (causal thinking) but understanding (final thinking) is the aim of the phenomenologist. And so the mesoderm came into sight. No, not the 'mesoderm' but the 'meso'. Or, in the way that Blechs Schmidt formulated it, as the first (and in my opinion until now the only) embryologist ever: the inner tissue (Innengewebe, in German). With this notion he wanted to discriminate the latter so-called germ layer meso(derm) from the ectodermal and endodermal layers respectively parietal and visceral body walls with related organs. Two limiting tissues (Blechs Schmidt), two body walls is enough. The meso is not germ layer number three, it actually represents the 'inner'(dimension), the 'in-between'. The fascia therefore may be considered to represent in our organism the 'inner' or 'innerness', while the viscera literally, as well as metaphorically, represent our 'inside' or 'inner side' or 'inner wall'. The ectoderm and everything that belongs to it therefore represents our 'outside'. Simply two dimensions, simply two qualities, only two processes appear to the essential item of the meso: connecting and shaping space (separation) in all kind of ways, shapes and appearances. The fascia 'in strict sense', which is the connective tissue in all its manifestations, every time and everywhere connects as well as separates (and therefore enables motion) the organs and the tissues. More and more I get the impression that the fascia 'in strict sense' is an organizing principle, manifested at the most basic i.e. physical and mechanical, level in our body. An integrator, whereas the same integration is also performed on so-called higher levels by systems like the blood and the nervous system in a more physiological and psychological sense. I think that therefore we should discriminate between the fascia 'in strict sense' (sensu strictu) which is the fascial connective tissue system that osteopaths are dealing with, and the fascia 'in broader sense' (sensu latu), in which organs of the inner system may be conceptualized like the PLS but also like the blood and the heart, not characterized by spatial anatomy but by systematic continuity and architecture. Such ideas are not yet fully mature in my mind but, as a phenomenologist, I have the idea that this could be the way of thinking that could lead to understanding of Anatomy Trains. Still also said about fascia: "In the waters and the fluids of the fascia the soul is dwelling". The 'fascia' as a plural organizing system on several levels, with the mechanical continuity-architecture as the most anatomical, structural dimension of such a system.





MY FASCIA

JAAP VAN DER WAL, MD, PhD

Recently I was confronted with two articles. The first one was about an Irish surgeon who made a lot of fuss and wanted to be recognized for his 'discovery' of a new organ, the so-called mesentery. He also stated that this organ was overlooked by his fellow anatomists and his fellow medical doctors for more than four centuries. See link 1. My first primary comment to this publication is of course that first we are not talking about an organ but about a part of the fascial system. Secondly, trying to prove with a lot of fuss that you are the discoverer of the new organ only pleases the anatomo-clinical soul who is now allowed to connect his name, status and self-respect to the discovery of something 'new', like the old anatomists did. But I consider it as not being a modern mind when you add a new organ to the out-of-date and one-sided anatomical approach to the human body. The second article was titled "Do our bones influence our minds?" (See link 2) and does justice to something else. It was about a geneticist who described the possible role that could be played by the skeleton as a co-principle to our metabolism. He focused on the important role that the calcitonine hormone plays in the regulation of all kind of functions, even of the brain. And he ends the related article with a nice comment: "No single organ is an island". This also regards the fascia, it also concerns the meso, the 'inner': anatomy, localization, causal thinking, the methodological and philosophical hardware of modern natural science, will never be adequate to fully appreciate an organism. And the osteopath will never find in the latter philosophical hardware a scientific confirmation or acknowledgment of his/her approach.

As it is now, I will go on as long as I am able, to bring the message in my courses and seminars (Embryo in Motion - The Embryo in Us) that what is presented in every anatomy textbook and atlas is a kind of 'machine thinking' and 'muscle man thinking' and that in such considerations something like the meso or the fascia as continuity and coherence creating principles is completely absent and denied. An organism is a whole, differentiating and suborganizing itself in parts and organs, not a construct of parts. The embryo is clear about this. In our modern human embryology, continuity thinking and holistic concepts are still poorly developed.

What you miss in the anatomy books is continuity, architecture, coherence, wholeness and therefore spirit. Andreas Vesalius has been, in my opinion, next to Darwin, the most leading genius regarding the development of our modern scientific mind and attitude. In this respect, I always have presented him as a genius light of the human spirit at the end of the so-called 'dark' times of the Middle Ages. But nowadays, as is also my message, the time has come to exchange this anatomical and mechanical view upon the human being for a new paradigm and extend it to an holistic and organic vision. For this we do not need new horizons in the form of brains and genes but new eyes. Only with such 'new eyes' concepts like fascia can, and will, be acknowledged scientifically.

JAAP VAN DER WAL, MD PhD

Anatomist-embryologist, Philosopher-phenomenologist.
Embryo in Motion, a project by Dynamension

Follow him at www.embryo.nl:

"The body developed out of us, not we from it. We are bees and our body is a honey comb. We made the body, cell by cell we made it" (Rumi 1217-1273). We are not 'made', we are mind (spirit) AND body. More than a self-programming genome or a walking around mind-producing brain. Here a new view is presented as to our prenatal existence. Usual regular scientific embryology will be extended and completed to an 'embryosophy': not only searching for causes and explanation but also giving meaning and sense.



PROPRIOCEPTION, INTEROCEPTION & A SENSE OF SPACE

KARIN GURTNER

After swapping clothes for years, it took a random photo for my best friend Martina and me to recognise our actual height difference. Of course, we knew that I am shorter, yet our sense of equality extended as far as our perception of physical height. Just to put that in perspective for you, Martina is 18 centimetres taller than me.

Why is it that two people with very different figures can perceive themselves as similar? How come the perception of your own physical structure can be way above or below your physical prominence or diminutiveness? Why does some people's grandeur fill a room, while others seem to occupy virtually no space? And why can a very slight structural change feel like a major issue for one person, while someone else appears indifferent to seemingly significant imbalances in their body?

One way of looking at it is from the perspective of fascia as an influential perceptual system.

FASCIA

If one could unravel the fascial system, its surface area would surpass the skin (our largest organ) by far. Fascia is not only far-reaching regarding spatial occupation; it is also in a league of its own as a sensory system.

INFLUENTIAL PERCEPTUAL SYSTEM

Fascia is densely populated with sensory receptors. Compared with the quantity of muscle spindles, there are six to ten times more mechanoreceptors in fascia than in muscle tissue¹. When including the tiny interstitial receptors in the equation, proportionally the number of fascial receptors may be equal or even superior to that of the retina of the eye¹.

While the eyes are generally considered our most dominating and richest sensory organ, it is the high receptor density and its bodywide extent that makes *fascia our most influential perceptual system for body alignment, movement, rhythm and spatial recognition.*

RECEPTIVE QUARTET

The most prevalent sensory receptors in fascia are the usually myelinated proprioceptive nerve endings and a myriad of tiny unmyelinated free nerve endings.

- Golgi tendon organs
- Pacini corpuscles
- Ruffini corpuscles
- Interstitial free nerve endings

RESPONSIVE TO MOVEMENT AND TOUCH

The main stimulus for mechanoreceptors is deformation, therefore movement and touch.

As a group, the Golgi, Pacini, Ruffini and interstitial receptors respond to tension and shear in different directions, vibration, pressure and feather-light touch.

SLINGS MOVEMENT APPLICATION

To stimulate receptors, therefore move life in our fascial system, we consciously alternate exercises and sequences that induce different stimuli:

- contract and relax muscles, therefore tension and soften fascia;
- vary movement intensity, direction and rhythm;
- create relative glide between neighbouring myofascial structures;
- incorporate props to apply different degrees of pressure; from deep to superficial, or weighted to feathery.



PROPRIOCEPTION, INTEROCEPTION & A SENSE OF SPACE

KARIN GURTNER

KINAESTHESIA

Movement and how we feel about it.

Viewing fascia as our most influential perceptual system certainly makes spending time on the ways we sense, a worthwhile investment.

Kinaesthesia or kinaesthetic sense means movement sense. On the one hand, it is the proprioceptive sense that enables us to sense the body and movement, including alignment recognition and movement coordination. On the other hand, it is the interoceptive sense that allows us to respond appropriately to sensations (appropriate to our physical needs) and interpret arising emotions.

Stay with me on this; further down I will elaborate on the conceptual difference between sensation and emotion.

IMPORTANCE OF KINAESTHESIA

The importance of the kinaesthetic sense becomes evident when comparing it to our other senses; vision, audition, olfaction, gustation.

Many people whose vision, hearing, smell and taste are impaired are thriving; they live a very happy, successful and independent life. However kinaesthetic impairment almost always leads to a debilitating degree of disability. I know of only one man who has virtually no kinaesthetic sense below the neck, yet managed to teach himself to stand and walk by visual control; an extraordinary achievement.

KINAESTHESIA DIFFERENTIATED

Kinaesthesia can be differentiated into:

- Proprioception or proprioceptive sense;
- Interoception or interoceptive sense.

Generally, proprioception is directly associated with kinaesthesia, while interoception has commonly been linked to viscera. In the last few years the meaning of interoception has changed from the restrictive view that our interoceptive sense solely stems from our internal organs, to the more inclusive view of using interoception as an umbrella term for the phenomenological experiences of our body's state. In this sense, *interoception is an integral part of our kinaesthetic intelligence and movement ability.*

BRAINY DIFFERENCE

The difference between proprioception and interoception does not lie in their hierarchical importance or subjective value for movement, the difference is located in the brain.

- Proprioceptive information is processed in the somatosensory cortex of the brain
- Interoceptive information is processed in the insular cortex (insula) of the brain

PROPRIOCEPTION, INTEROCEPTION & A SENSE OF SPACE

KARIN GURTNER



I keep the pelvis centred while lifting the leg into a table top position – only a slight adjustment needed to make a 90° angle at the top



Externally rotating the hip joint feels well-lubricated and pleasant, while turning in seems rather raspy (hmmm...).



Leading with the leg and tilt and rotate the pelvis in sequence is the way to go



The coordination feels challenging - I am motivated to master it!

PROPRIOCEPTION

Proprioception is the ability to perceive the position of the body and coordinate movement (consciously and unconsciously). Said differently, it is the competency to move individual body parts in a well-orchestrated, well-timed and smooth manner. With growing research, the importance of fascia in relation to movement rhythm (speed and timing) has been emphasized.

SLINGS MOVEMENT APPLICATION

To refine proprioception, we:

- bring awareness to postural alignment;
- often use technical instructions to describe movement mechanics;
- train movement rhythm.

INTEROCEPTION

Interoceptive feelings are triggered by sensory free nerve endings, most of which are distributed throughout the fascial system¹. The contemporary definition of interoception includes the perception of the state of the body as well as the interpretation of sensations. Interoceptive sensations are often related to the homeostatic needs and have a strong affective, motivational aspect; meaning we are motivated to adapt our behaviour (unconsciously or consciously) to regain equilibrium.

Interoceptive sensations are:

- Warmth or coldness, heaviness or lightness, muscular activity and relaxation, hunger and thirst, heartbeat and so on.

More broadly, interoception is linked to:

- Emotional states, sense of wholeness, decision making, perception of time, perception of somatic spaciousness and peripersonal space (the space around your body that belongs to you), and more.

PROPRIOCEPTION, INTEROCEPTION & A SENSE OF SPACE

KARIN GURTNER

SENSATIONAL POTENTIAL

Interestingly, interoceptors significantly outnumber proprioceptors. It has been estimated that for every proprioceptive nerve ending in myofascia, there are seven nerve endings that could be classified as interoceptors.

In terms of movement, this clearly points to our great potential for sensing motion and being aware of its effects on our health and emotional states.

THE FEELING OF SENSATION AND EMOTION

Fascia enables us to move. And movement enhances our unconscious or conscious ability to feel.

Before moving on, we need to have a mutual understanding of what it means to ‘feel’ (at least for the length of this article).

Feeling includes both sensation and emotion.

- A sensation is the feeling of something (physical)
- An emotion is how you feel about it (interpretation the physical sensation).

For Example: I can stretch my quadriceps muscles and feel a stretch sensation (feeling of something), which I interpret as pleasant (feeling a certain way about it).

SIGNAL PERCEPTION AND INTERPRETATION

In our everyday feelings, sensations and emotions blend. The same can be said about movement practise, which is fine much of the time.

However, there are situations when unawareness of the difference can be a real obstacle to change and somatic progress:

- Confusing one with the other;
- Memory-based or habitual signal interpretation, instead of perceiving the current sensation and accompanying emotion.

Examples of Confused Signal Interpretation

A person avoids a movement to avoid the associated emotions, which are ‘fused’ to past experiences.

Alarming, irritating or confusing emotions are definitely a sign for something, but not necessarily for imminent danger.

A person trains in a way that doesn’t serve their physical wellbeing, yet their pleasure or satisfaction overrides the somatic alarm signals.

A person only ‘listens’ to the emotional noise of intense sensations, overhearing the ‘quiet’ or ‘silenced’ feelings.

SLINGS MOVEMENT APPLICATION

In Slings Myofascial Training we are mindful of the correlation of sensations and emotions, while recognising that they are not the same.

Occasionally we “pause” to reflect – not necessarily the movement, but the reaction to the arising emotion, which can express itself as a cue to “push harder”, “freeze” or “get out of the pose immediately”. This way we give the conscious mind an opportunity to recognise the motivator behind the unconscious (re)action.

SLINGS & CULTIVATING INTEROCEPTION THROUGH MOVEMENT

I believe that people who feel the effects of movement make more “informed” decisions of what serves them and what does not during practise. Now, there is nothing airy fairy about educating the interoceptive sense; the contrary actually. There are various ways to cultivate interoception with science-informed myofascial training techniques.

Fascial Hydration

The stimulation of certain interoceptors has been shown to result in increased fascial hydration.

- Well-nourished fascia is responsive, therefore interoception more distinct
- Well-nourished fascia is healthier and a healthy feeling body is better equipped to face challenge

In Slings, we use self-massage exercises and movement sequences in which pressure and release, as well as tension and softening, are alternated to promote fascial hydration.

Glide

The loose, watery fascial layers that serve as sliding surfaces for neighbouring myofascia house receptors. Therefore, gliding movements stimulate fascial receptors, which increase movement perception.

In Slings we incorporate movements in which neighbouring myofascial layers slide against each other during strengthening and active lengthening exercises to promote glide.

Varying Thresholds

Most interoceptors function as mechanoreceptors, which means they are responsive to mechanical tension, pressure and relative glide. It has been shown that about 40% of interoceptors can be classified as low threshold receptors that are responsive to light, even feather-light touch.

To reach a broad range of receptors, in Slings we incorporate self-massage exercises that apply anything from deep pressure to feather-light touch as well as exercises that tension fascia to various degrees from strong to minimal.

Wording

Consciously or not, we associate movement or the quality of movement and wording. Said differently, words have sounds and sounds have associations.

- “Flex the hips” has a different sound than “fold the hips”. The same can be said about “contract” and “curl”, “pull” and “draw”, “stretch” and “lengthen”, “twist” and “spiral”.

Also, unconsciously we often associate certain words with certain exercises, which can hinder a new kind of movement experience.

- For example, most people who have visited a gym have done an “Abdominal Crunch”. As much as this fits a go-hard fitness environment, it doesn’t fit our realms of body-minded movement. We don’t “crunch” things, we curl up, elongating the spine and lengthening the spine extensors as the head and shoulders lift off the floor, hence the exercise is called “Curl Up”.

In Slings, we not only describe the mechanics of an exercise, we aim to portray and enhance the sensory qualities through the conscious choice of words.

SENSE OF SPACE

By balancing tension within the fascial system and activity within and amongst muscles, the body’s dynamic equilibrium and spaciousness are well supported.

ADAPTABLE STRUCTURAL EQUILIBRIUM AND SPACIOUSNESS

The goal is not perfect symmetry or static stability, but an adaptable structural organisation in which the body is dynamically stabilised and feels at ease.

When structural relationships are dynamically balanced, joints are optimally aligned, muscles work efficiently and fascia is adequately tensioned. And it gets better. The body is three dimensionally expansive and the distribution of volume is harmonious.

-

A woman in a white dress is performing a yoga pose on a rocky cliffside. She is sitting on the edge of the cliff, with her legs tucked under her and her arms extended forward, holding her feet. The background is a vast, rugged landscape of dark, layered rock formations under a soft, overcast sky.

PROPRIOCEPTION, INTEROCEPTION & A SENSE OF SPACE

KARIN GURTNER

STRUCTURAL ARCHITECTURE AND PERCEPTION

Every body has a unique structural architecture, which is perceived in a unique way.

BODY READING

Body reading, in other words assessing structural relationships, is an art and a craft. While some patterns reveal themselves seemingly easily, others are puzzling or “hidden”. Still, there is something tangible and reassuring about assessing structure. The visual cortex is very convincing and quantitative measurements apparently objective.

See it, Measure it, Believe it

When we recognise structural relationships and even better, when they are measurable, we acknowledge them as being real and act accordingly.

BODY PERCEPTION

But of course, we also have an inner perception of our body’s shape and architecture.

The scope of sensations is as diverse as people and the cocktail of accompanying emotions as unique as you and I. A few examples most of us can relate to are feeling tall, short or just right, long on one side and compressed on the other, expansive or tight. Now, while the perceived tallness or shortness pleases one person, it frustrates another. Feeling “just right” might feel just right on Monday, but boringly average on Saturday. Perceived imbalances can be a cause for worry or they can act as motivators to take action. A skinny person who feels expansive might love the space they occupy; or the opposite in the case of anorexia.

Quantitative measurements and qualitative sensations are no straight equation - that much is clear.

Feel, Listen, Appreciate

Your sense of spaciousness is no somatic illusion; it is part of our somatic reality. Sensation is part of you and feelings tell you something about your current state; listen up and appreciate the insight.

MAYBE THAT’S WHY

So why is it that two people with very different figures can perceive themselves as similar? Maybe it’s because they feel at eye-level with one another.

Maybe you perceive your own physical stature above or below your physical prominence or diminutiveness because posture is both the external expression of structural organisation and the perception of self (as beautifully expressed in German, where posture means “Haltung” and “Haltung” represents both alignment and attitude).

Some people’s self-perceived grandeur might fill a room; while others seemingly occupy hardly any space because maybe that is the way they feel about themselves at that moment.

And perhaps a very slight structural imbalance feels like a major issue because it is perceived with intense clarity, while minor malalignments are blind spots that are out of a person’s kinaesthetic radar.

IN ESSENCE

Fascia is the matrix that shapes us and it is our most influential perceptual system. Feelings are as real as body architecture and a sense of spaciousness as important as structural balance.

Slings Myofascial Training, Kinesis Myofascial Integration and other forms of structural integration improve proprioception and body alignment along with interoception and somato-emotional spaciousness. In this way, they foster wholeness

for more information on Karin’s workshops go to www.art-of-motion.com

ZOGA

WOJTEK CACKOWSKI

Wojtek Cackowski is a physiotherapist who is fascinated with movement and manual therapy. He is a happy father of two who lives and practices in Poland. Wojtek is a teacher of Anatomy Trains and KMI Structural Integration and leads a team of therapists in a Structural Rehabilitation Clinic in Poland. During his self-development journey he practiced yoga, which gave him an inside understanding of human potential. He found that movement, combined with manual work, can be an extremely powerful tool. Wojtek is working with researchers in Poland in the field of relative movement of tissues and directional movements, and their influence on the structure and function of the human body. His goal is to facilitate a new field of research and therapy focused on relationships of movements.

Zoga - Structural and Functional Integration through directional movement of fascial layers.

What is Zoga?

You may be wondering - what is Zoga? Everyone has heard of Yoga and, as you might suspect, Zoga is a modality that has something in common with yoga. The name Zoga comes from a funny coincidence involving my first class exploring these movements that I presented outside of my clinic. It was named Zoga by accident due to a spelling error on a day schedule. After I held that class, those who participated advised me to keep the name because it was not yoga any more.

This movement modality is based on yogic asanas as a starting point to movement explorations, bio mechanical assessments and myofascial intervention of gliding release in tissues. Zoga also comes from Structural Integration based on the KMI model created by Tom Myers. Deciding on the types of movement and direction will depend on a strategy based on structural and functional assessments. Each movement is done to create a specific reaction in soft tissues, joints, nerves or viscera to address specific structural and functional imbalances in the body.

Zoga is a concept that started for me in 2010 when I graduated from my KMI Structural Integration training with Tom Myers and James Earls in the UK. I had been practicing yoga for about four years at that time. My yoga practice was mostly based on my own self exploration of my structurally compromised body. I didn't follow one school of yoga but used everything I could find in yoga to get answers for myself. I tried different styles and looked for elements that suited my needs.

I had a 30 degree scoliosis that was causing me a lot of pain and discomfort. As a physiotherapist I was looking at yoga mostly from a body movement perspective and I was using asanas as rehabilitation positions to achieve different outcomes in my practice or in my one on one rehab sessions with my patients.

When I graduated KMI, I wanted to see how only the Structural Integration could change my system, so I stopped my yoga practice for about a year to observe the changes made by KMI only. The results of KMI were great, my aches and pains went away and I felt much better in my "body suit". After a few months I started to come back and explore my yoga practice with a new understanding of my own pattern and a new understanding of anatomy and how different structures can relate to each other. This was the beginning of Zoga. After a year of exploration, I found some relationships and some movements that did not make total sense for me in terms of my understanding of what is short and what is long in my body's architecture. This long and short concept of muscles was missing something for me. I started to observe that by changing strategy of how I organize a movement in a short area, I could make it behave differently and not always behave as short. Some joints were reacting short in one position but not so short in different asanas. What was missing? Why was I getting different results when I was using these directional movements than when I was only stretching my muscles?

What is missing in our understanding of biomechanics?

My belief now is that there is still the possibility to deepen our understanding of what causes restriction of movement. Elements that are not usually considered as restrictors of motion can be very important factors that influence range, freedom and quality of movement. I think we need to spend more time in understanding spatial relationships of different structures of the human body to really understand movement in our system. First we need to stop thinking that it's only muscles, joints and bones that are responsible for our movement. In the movement and rehab industry we tend to think that it's only the myoskeletal system (and now we have started to talk about the fascial system) that is responsible for restrictions in movement. We need to understand that all the layers of fascia move in relation to each other when we move. Starting from the skin, adipose layer, all nerves and vessels, different tendons, ligaments, joint surfaces, organs, epimysium, perimysium and endomysium and how far we want to go in depth and size of structures, they all need to move in relation to their neighbours. So it means that all structures matter for human movement and that muscles and bones are no more important than other structures in relation to how we move; they all have the same importance.





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Another factor to notice is fluid dynamics and the size and shape of all our cavities and all the structures we have in the body that can influence the biomechanics of our movement. Beside the skeletal system we can have different shapes of bones, joint surfaces and sizes of bones that will give slightly different vectors of movement to the same muscles that normal anatomy would consider pull in different directions. All this biomechanical system is of course controlled by a very complicated nervous system that hears all the information from the bio mechanical system and is able to stimulate parts of it to control its movement in space. When we really want to understand mechanical relationships of a body, we need to start to measure this relative behaviour of all structures of the human body. Relationships can be key to a new understanding of biomechanics as we know it.

Because of my bio mechanical interest in movement, in this article I would like to focus on aspects of how we move and how the mechanics of different structures relate to patterns in the body. Ida Rolf used to say that in the Structural Integration process she would like to reorganize a body to where flexors flex and extensors extend. So the goal is natural freedom of movement when everything in our body is in its best possible place

to contribute to its role for a whole system.

The causes of changes in natural biomechanics are many. To list a few, there are injuries, development interruptions, emotions, habits, training, diet, relations with others, environment etc. They will all possibly create patterns in our structure that can lead to a situation where some part of a body will need to overwork to keep us in a gravity field, some will be compressed and some overstretched, some will be hypomobile and others hypermobile. Our body will need to compromise in movement and this will gradually lead to dysfunction or pain.

Zoga as a way to get yourself back

All these changes that have happened in human structure can be addressed by manual and movement therapy. Zoga is a kind of a movement therapy that uses the idea of directional glide of tissues. This means that, depending on what driver of movement I use and how I set my body in space in relation to an area that I need to involve in the release, there will be different pull on a tissue and different shearing effects between specific myofascial layers of tissue. The focus in Zoga is on the action of creating movement between certain layers of tissue by multidirectional movements that are focusing forces around a specific area that needs to release.

Zoga is based on a concept that all layers of tissues need to be free to move and give some freedom of movement in all planes of motion and all layers of fascia. There is movement inside of all these structures alone but there is also relational movement between bigger and more defined fascial layers. As muscles move inside of each muscle they will also move in relation to each other. We could call these areas 'motorways of movement' that allow for a lot of relative movement between bigger myofascial layers. These fascial bags that define layers of the body need to move in relation to each other to allow for a full, free, natural and balanced movement in the whole body. This does not mean an extreme range of motion but a balanced range of motion that is evenly distributed in a whole body's movement system.

Glide in tissues

The idea that glide is a crucial part of understanding how restrictions in a body are happening came to me after a few dissection experiments. After each dissection I had been finding other answers to how I can understand my restrictions and how they look inside of my own body. I have observed that the dissection process reveals places of adhesions between layers of fascia. This makes sense to the range of motion restrictions I have observed before the dissection of a cadaver. It showed me how different adhesions have created certain patterns and how this

was not necessarily what I would say from a short and long muscle theory perspective. Maybe it's not always that the muscles are short or long but they are positioned distally or proximally. They can be shifted laterally medially, rotated, adhered to other structures in different areas and this is why they can also create restriction and dysfunction in a system? Short muscles could do the same but maybe it's not always their fault that we don't have full range of motion? I have a strong belief that exploration of relationships inside a body can be the key to a new understanding of human biomechanics. This is the kind of biomechanics I would like to explore here.



How Zoga works

Structural Assessment

The Structural Assessment that is used in Zoga comes from a Structural Integration background. We are using relationships of bones and soft tissues in a body to assess how the structure is organised in space. For example, when assessing the body I look at it from all planes, how the body is oriented in space in relation to its other structures. Knowing how different bones have migrated to improper positions, we would then consider the tissues that will need to be addressed to create more balance of a structure in the field of gravity.

Functional assessment

Using Yoga Asanas we ask a client to move in certain positions to see how the tissues react to movement in a specific direction. In Zoga, by asking a client to use different strategies to get into some positions, the practitioner will be able to ask the system different questions about relative motion of tissues involved in the movement. By using movement of some structures proximally to distally, we will see something different in how the tissue moves than achieving the same range of motion in a joint but using a strategy of moving it distally

to proximally. Achieving the same range of motion by using these two strategies getting to this position can be different, depending on where there is inhibition of movement between different layers of fascia. Using different positions to assess movement of tissue in glide up or down of a tissue, or using shearing movements to see how different tissues move in relation to each other, will give the therapist many possible assessment tools to precisely find areas that need intervention.

Manual Assessment

During movement assessments, the therapist is placing his hands on the tissues that are being assessed and looking for any restrictions that he can feel with his hands. His hands can feel how movement between different layers is happening and if it's restricted in any direction. Depending on the area being checked, the therapist will apply his hand to feel how different areas react to movement.

Intervention

There can be a few ways to influence a body and change its structure. Depending on the client's needs and the level of training of the therapist, there can be a few levels of intervention.

Level one

Movement one on one and homework to do for a client. This level of intervention will need a trained therapist who is able to assess a structure and how this structure behaves in space and then give movement strategies to work on how to change the pattern that was recognized in the body. During a movement session, the therapist would teach movements to a client who would need to repeat them at home and come back for further direction on achieving a structural and functional change.

Level two

Movement one on one where the therapist will actively help to find areas of restriction and, by using outside pressure of the hands, will help the client to achieve faster results in his movement intervention. This requires some manual skills from a therapist who would direct soft tissues to specific vectors to create more freedom of movement in fascial layers.

Level three

Deep manual work like Structural Integration that is supported by these level one and two interventions. This would require the combination of a therapist who uses both modalities or collaborates with a Structural Integration practitioner.

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I would like to provide you with the opportunity to experience a small sample of what Zoga is about and how it works through a simplistic pattern outlined below. Zoga in a session situation would be more individualized to create specific directions for an individual pattern. I hope this generalisation will still provide some sense of how the directional pull of tissues can act on how we stand and move.

Movement Experiment

We could use Zoga to create a front-back balance in an anteriorly shifted pelvis. The tissues of the front lower portion of the superficial front line (tibialis anterior, toe extensors) would be pulled down and the lower portion of the superficial back line (soleus, gastrocnemius and hamstrings) would be pulled up. When you want to create a change in that pattern you need to create movements of tissue that will act in opposite directions. If you feel that when standing you have more weight on the front of your feet, you might be a good candidate for this routine. Of course there can be many anterior shifts of the pelvis where different areas behave differently, and this exercise is not going to fit everybody's needs, but I would urge you to try it.

Because the front line is pulled down and the back line is pulled up, I will use the upper body - arms, trunk and head - as drivers of movements for the front to create pull on the tissues, towards the direction I want to shift the layers of fascia. These tissues are part of the superficial front line structures. So all movements for the front line will create pull on the tissue upwards.

First stand on your two feet and just feel how your weight is distributed on the feet. How much weight can you feel on your heels and how much on your toes? Try to bend forward slowly and see if your body is pulled to one side or the other in different moments of that movement. Then try the same in a back bend when standing. See how your body reacts and distributes your weight from side to side during that movement. When you can fully assess these elements, you can start an exercise.

Superficial Front Line Up

Starting with a toe rocking exercise with ankle, knee or hip driver

Start with rolling your toes on the floor towards a plantar flexion by pushing the front of your ankle forward and then you will have a few choices. You can start with keeping the dorsal side of your toes on a mat and then bringing your heel towards the floor. You can reach medially or laterally from the toes or create a circular movement of the heel around the toes and still try to bring your heel closer and closer to the floor with each movement. You can do this either standing or sitting, depending on how flexible you are and how much of a pull you want to create on the tendons of the toe extensors in relation to the other structure on the dorsal side of the foot. You can add movements of extension in the upper body to create a long line of tension through the whole superficial front line and front arm lines. By changing directions of movement in the upper body, you will also add different vectors of pull from above and create another gliding reaction of tissues and different proprioceptive stimulation of *the system*.



Dorsiflexion and rotations around front of ankle joints and retinaculum of extensors

Now try to plantar flex even more and allow your foot to roll on the dorsal side of your metatarsals. Now your talus will be a driver of movement and you will use it in maximum plantar flexion, reaching the front of your ankle forward and then moving it in a circular movement laterally and medially. Feel which movement is more challenging for you and try to open this area by constant movement, exploring more range with each circle of movement. This position again can be performed while standing, kneeling or sitting, depending on your level of flexibility.



Knee flexion and movement above

Depending on flexibility, you can start at the chair with knee bent and your foot on the floor behind your pelvis. By moving the pelvis in a posterior tilt, creating movements of the upper body (like reaching with arms, rotating torso and back bending the spine), you will give another multidirectional pull up on a lower position of SFL. If flexibility allows, you can sit on your heels and then move the pelvis in a posterior tilt, rest on your arms behind your feet, then elbows, and finally flat on the foot like in a *suptavirasana* position (if you want to go into extreme range of motion and your body really is capable and it's safe for you to do so). Progression would depend on the individual pattern of the client which would be assessed before performing any of these variations. During the whole exercise, keep moving in many vectors by rotating, side bending and breathing deeply during this movement.



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Superficial Back Line Down

Individual toe pull

Lay on the floor and try to grab your fifth and first toes with your hands. Depending on your flexibility, you can do it with knee bent or extended and the upper body in flexion, or in a more neutral position. Add pulling movements into eversion and inversion by giving direction to that movement - keep moving your knee and hip laterally and medially while you pull. Then change to second and fourth toes and lastly the third toe. When you feel a big difference in how your body reacts to the pull on the different toes, spend a little more time on this one, moving slowly and avoiding strong sensations



Heel push

This exercise uses the heel as a driver of movement. You can hold your metatarsals with your arm or with a yoga belt. By pushing the heel away, you can also add knee circles, abduction and adduction of the hip and bringing the heel towards your head.



Knee push

Add pressure with your arms, push your knee towards your belly, then on the side of your belly, and then try to bring your knee to the opposite side of your torso. Do this movement slowly to feel any restriction and try to breathe into these areas, letting go of any tension you feel in those areas.



All the exercises above should be performed in a slow manner, avoiding pain. While exploring the maximum range of motion in pulling exercises, we might feel stretching pull in a tissue, or burning, but not pain. If any of the positions is not possible to achieve without discomfort, try to find a position without pain, whilst keeping the same principle of body movement and stability.

When you finish this exercise (which should take 10 to 15 minutes in total), stand up and see how you feel. Where is your centre of gravity now? Try your forward bend and back bend and see how your centre of gravity behaves during these movements.

I hope this overview of Zoga has shown some possibilities that can be explored further in the future. This was a small sample of ideas behind the Zoga principles that can be used to balance myofascial continuities around the body. By focussing on certain areas and specific movements, we can bring back freedom of movement gradually to open the body to new movement possibilities. I encourage you to explore these movement possibilities and to have fun observing their relationship to our bodies. Results that you will achieve in this exercise will depend on your pattern, engagement and time that you will spend on it. Depending on what is happening in other structures, not involved in the superficial front and back lines will also influence the results. But this experiment is more designed to show that we can change our structure and its relation to gravity by using specific and directed movements.

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**SPACE FOR WELL-BEING:
UNDERSTANDING HOW HUMANS SHAPE ARCHITECTURE
AND WHY WHERE WE LIVE SHAPES US ANATOMICALLY**
LAURI NEMETZ

AT American faculty, Laurice (Lauri) Nemetz presented this poster at the American Association of Anatomists' regional meeting in New York this past fall. She was also featured in their newsletter in an expanded interview about this topic: <http://www.wellnessbridge.com/pdf/AnatomyNow.pdf>

She will be giving an oral presentation this summer with AT faculty James Earls on, "The Connected Body: Born to Walk and Dance- Bipedalism to Artistic Expression through the lens of Anatomy Trains®" at Oxford University as part of the International World Conference on Movement and Cognition (<https://movementis.com>)



Space for Well-being: Understanding How Humans Shape Architecture and Why Where We Live Shapes Us Anatomically

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Introduction

Morphogenesis is concerned with how biological form shapes itself. Humans have created and shaped their environmental space since the beginning of civilization, though the extent of our shaping has increased exponentially. In turn, where we choose to live and the environment we create influences wellness on an anatomical level. Whether living in a city block or participating in a communal folk dance, the structure of the surrounding space reinforces a larger cultural environment, which impacts the individual. Bipedalism changed the shape of our ilium, but environment, from mountainous terrain to the stagnant office space, also impacts our anatomy.

Using concepts from movement theorist Rudolph Laban (1879-1958), human movement can be looked at as occurring in a range of four main categories: 1) Direction (direct or indirect) 2) Weight (heavy or light) 3) Speed (quick or sustained) and 4) Flow (bound or free). The author used a review of literature to explore how preferences in these categories helped bipedalism develop in relationship to environment and where different uses of human architecture and public space encourages or discourages the use of different combinations of these efforts.

In modern architecture and spatial planning, there is a preference for efficiency of space for the electronic environment, but a limitation of natural "healthy loading" needed to organize the body system. Moderate loading on the skeletal structure occurs during walking and posture, and myofascial connections organize through a variety of movement stressors. Wolf's Law dictates that bone adapts to load. Use of natural environment or creative spatial planning can continue to challenge the human form in a positive way.



<http://forum.belgiumdigital.com/archive/index.php/t-286019.html>



St. Patrick's Cathedral, Lauri Nemetz ©1986

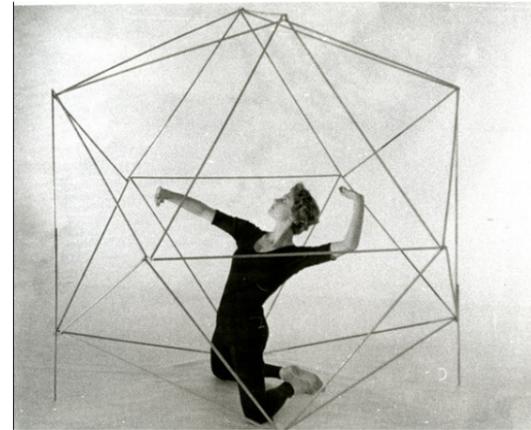
Purpose and Hypothesis

"Every man is the builder of a temple, called his body, to the god he worships, after a style purely his own, nor can he get off by hammering marble instead. We are all sculptors and painters, and our material is our own flesh and blood and bones." - Henry David Thoreau

Architecture serves a purpose both for functionality of protection of humans from the natural elements as well as being a reflection of an individual's creative expression, or societal expression of spatial use. Just as Alan Lomax observed that folk dances often practice steps needed in a surrounding geographic region (i.e., the high steps of Macedonian dances helps with the local rocky terrain), architecture tends to also reflect the movement ideal (think of the style of ballet reflecting the aesthetic of gothic architecture).

In our modern culture, "We spend 90% of our time indoors...If we don't optimize that, we're going to have a hard time optimizing wellness as a whole." (Mayo, <http://inthe-loop.mayoclinic.org/discussion/researchers-at-mayos-well-living-lab-study-health-effects-of-indoor-work-environment/>).

This brings up the question, "What can we do to create good architecture that can optimize well-being anatomically?" Additionally, if (according to the work of Rudolph Laban) movement can be divided into four major effort categories, shouldn't our environments and architecture be designed to encourage full use of these efforts?



"Photographs" (), Rudolph Laban: NRCD.

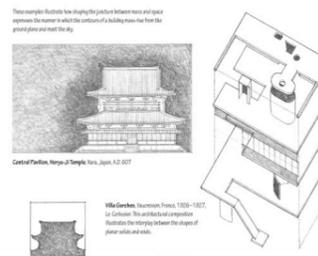
URL: <http://www.dance-archives.ac.uk/media/1203> [October 22, 2016]

Discussion

"We are shaped by the forces we experience." Katy Bowman, *Movement Matters* (2016)



Vagelos Education Center at Columbia Photo credit: Nic Lehoucq (<http://newsroom.cumc.columbia.edu>)



From Ching, *Architecture: Form, Space and Order*

Oft quoted in architecture is the concept of "utilitas, firmitas and venustas" (commodity, firmness and delight) attributed to Marcus Vitruvius Pollio 30-15 BCE. The same could be considered as necessary in anatomical functioning for people. As modern humans, we evolved to become bipedal. With bipedalism we adapted our anatomy in many ways, including bringing the ilia into more lateral orientation and using the hip abductors to help on one-legged stance, needed in walking and running. (Earls, p. 24, 2014) For this reason, the ability to balance on one leg is essential in these motions.

With bipedalism came a need for efficiency in gait, and as Myers (2014) noted, when the body is balanced in terms of anatomical tensegrity, changes in equilibrium can be absorbed and returned to the body. Misalignment will cause pain and or dysfunction along related myofascial lines. Modern humans spend so much of the day indoors as well as utilizing smartphones, computers and driving cars, creating an imbalance in the tensegrity form, causing stress and loading in the neck and strain and imbalance as well as misalignments in arm lines (i.e., why destabilization in the wrist or shoulder can cause lateral epicondylitis or vice versa).

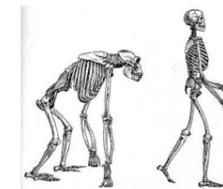
Architecture, when well designed, can encourage interaction spatially but often misses the surfaces underfoot needed to challenge the ankle in multi-planar directions, or to have the arms reach overhead as in brachiation.



(left) McCardell Bicentennial Hall, Middlebury College's multidisciplinary science facility, photo by Lauri Nemetz ©2016 (right), photo by Lauri Nemetz ©2014

Conclusions

The body is designed to be stressed through environment. We shape the architecture that surrounds us through cultural, geographic and aesthetic preferences and that in turn can affect the way we shape our bodies. Given current statistics that show humans spending the vast majority of life indoors, there is a need to creatively think of making buildings that challenge our natural movement vocabulary.



Acknowledgments

A big thanks to Thomas Myers and Anatomy Trains® for the concept of spatial medicine. I also give thanks to a number of professors and teachers over the years, particularly in the fields of art history, dance/movement therapy and dissection that have influenced my work. Also thanks to the late Pater Madden, for introducing me to Laban Movement Analysis.
 Disclosure: Laurice D. Nemetz, MA, BC-DMT, LCAT, ERYT500 is part of the Anatomy Trains® faculty and serves as an assistant in Anatomy Trains® dissections.

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Further Information

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EFFECTS OF SELF-MYOFASCIAL RELEASE A SYSTEMATIC REVIEW HOLLY CLEMENS

Self-myofascial release (SMR) is a popular intervention used by fitness and rehabilitation professionals, athletes and active individuals to enhance myofascial mobility, aid in recovery from exercise and prevent injury. Common SMR tools include foam rollers, roller massagers and various types of balls.

SMR tools are intended to have a massage and/or stretch effect on the fascial connective tissues and to theoretically treat fascial adhesions and restore normal soft tissue extensibility (Crane et al. 2012). According to Schleip and Muller (2013), the use of SMR tools can improve localized fascial tissue hydration, stimulate and fine-tune inhibited or desensitized fascial mechanoreceptors, and improve myofascial health. Evidence also suggests the use of various SMR tools can enhance joint range of motion (ROM) (Sullivan et al., 2013), decrease acute muscle soreness (Macdonald et al., 2014) decrease delayed onset muscle soreness (DOMS) (Pearcey et al., 2015), and modulate the autonomic nervous system (Kim et al., 2014).

Despite evidence of the acute and chronic physiological effects of SMR, there appears to be no consensus on the optimal SMR program to enhance myofascial mobility, prevent injury and aid recovery from exercise. However, a recent number of systematic reviews on SMR may help to fill in the gap from research to practice and provide fitness and rehabilitation specialists recommendations on SMR programming. The 4 systematic and literature reviews described in this article include: Mauntel et al. (2014), Schroeder & Best (2015), Beardsley & Skarabot (2015) and Cheatham et al., (2015).

Review #1: Effectiveness of Myofascial Release Therapies on Physical Performance: A Systematic Review

Mauntel et al. (2014) conducted a systematic review examining the effectiveness of noninvasive myofascial release therapies, including active release techniques, positional release therapy, trigger point therapy, and self-myofascial release techniques on joint ROM, muscular activation and muscular force production. After the inclusion and exclusion criteria were completed, 10 of the 873 articles were included in the systematic review. All but two of the studies observed indicated significant improvement in joint ROM from the myofascial release therapies. However, none of the studies indicated significant changes in muscle function following treatment. The authors noted the conclusions were based on a limited number of fair to high quality methodological studies (Mauntel et al., 2014).

Review #2: Is Self-Myofascial Release an Effective Preexercise and Recovery Strategy?

A Literature Review

Schroeder and Best (2015) conducted a literature review assessing the effectiveness of selfmyofascial release using a foam roller or roller massager for preexercise, recovery or maintenance. A literature search using terms such as “self myofascial release,” “foam rolling” “roller massage,” and variations of these terms were searched on four databases. Of the 107 items produced from the search, the authors identified nine randomized control studies (RCT) that used SMR techniques as a preexercise, maintenance or recovery and treatment tool. Despite studies using different exercise protocols, different number and timing of foam rolling or roller massage treatments and measuring different outcomes, some important findings were consistently noted. The authors found that SMR appears to have positive effects on ROM following soreness and fatigue following exercise. The increase in ROM may be due to the SMR tools acting to reduce adhesions between fascial layers, changing the thixotropic property of the fascia around the muscle, or increasing temperature (Schroeder & Best, 2015).

EFFECTS OF SELF-MYOFASCIAL RELEASE A SYSTEMATIC REVIEW

HOLLY CLEMENS

The five studies indicating both foam rolling and roller massager increased ROM used a maximum of 1-minute sets of SMR. No intervention used more than 2 minutes per day per muscle group. These findings indicate there may be an optimum duration of SMR to increase ROM. Despite the reported findings by Schroeder and Best (2015), it is important to note they did not use an objective strategy or grading of the quality of literature.

Review #3: Effects of Self-Myofascial Release: A Systematic Review

Beardsley and Skarabot (2015) conducted a systematic review to present the literature regarding the acute and chronic physiological effects of SMR. They searched PubMed and Google Scholar databases containing the words 'self myofascial release,' 'foam rolling,' or 'roller massager.' The search strategy revealed 22 studies that met the inclusion criteria for the systematic review. The mean score for the studies in the review was 5.91 + 0.87 points. According to the quality criteria set, the average quality of the studies was moderate.

The studies in the Beardsley and Skarabot (2015) systematic reviews were divided into six categories:

- Acute effects on flexibility (11 studies)
- Acute effects on athletic performance (9 studies)
- Chronic effects on flexibility (4 studies)
- Acute effects on DOMS (3 studies)
- Acute effects on autonomic nervous system activity (2 studies)
- Acute effects on arterial stiffness and vascular endothelial function (1 study)

In terms of the acute effects on SMR and flexibility, the majority of the studies found that SMR does lead to increase joint ROM. The time-course and dose-response effects of SMR appears to be unclear. This may be due to differences in the type of SMR tools and protocols used, myofascial areas treated, pressure intensity and type of instructions used in the 11 studies. However, most studies regarding the dose-response effects on flexibility found improvements in ROM with around 1-2 minutes of SMR treatment. These results are similar to the findings by Schroeder and Best (2015).

The majority of the nine studies on the acute effects of SMR on athletic performance indicated that SMR does not impede athletic performance across a wide range of different force and power production outcome measures. Thus, SMR may be an option for athletes who are looking for short-term improvements in flexibility that do not cause performance decrements as static stretching is known to do (Kay & Blazevich, 2012).

It is important to remember that the nine studies has a moderate rating on the criteria scale. In addition, additional studies, outside this review, show foam-rolling has no performance enhancing effects on maximum strength and power (Freiwald et al., 2016). Beardsley and Skarabot (2015) found conflicting reports on the chronic effects of SMR on flexibility. The findings may be a function of the poor quality of the four studies, the very short duration of most of the protocols (1-2 weeks) and the nature of the subject populations. In terms of the acute effects of SMR on DOMS, the majority of the studies reported that SMR appears to alleviate the sensation of acute DOMS. Two studies used foam rollers and one study used a roller massager. The results on the acute effects of DOMS, using SMR tools, may make SMR attractive to individuals and athletes looking for ways to enhance recovery from training or competition. However, it is important to note that only three studies were reviewed on SMR and DOMS and the quality of the studies were on the moderate to moderately high end range of the criteria scale. There was only 1 study related to SMR and arterial and vascular function and 2 studies related to the acute effects of SMR on the autonomic nervous system. There are some early indications that SMR may benefit these areas, but additional studies are needed to provide conclusive evidence (Beardsley & Skarabot, 2015).





EFFECTS OF SELF-MYOFASCIAL RELEASE A SYSTEMATIC REVIEW HOLLY CLEMENS

Review #4: The Effects of Self-Myofascial Release Using a Foam Roll or Roller Massager on Joint Range of Motion, Muscle Recovery, and Performance: A Systematic Review

Cheatham et al. (2015) conducted a systematic review to appraise the current evidence and answer the following questions in regard to the use of a foam roller or roller-massager:

(1) Does SMR improve joint ROM without effecting muscle performance? (2) Does SMR enhance postexercise muscle recovery and reduce DOMS?

(3) Does SMR prior to activity affect muscle performance?

A total of 133 articles were initially identified using various search terms such as SMR, foam roll, roller massager, and DOMS. Only a total of 14 articles met the inclusion criteria. The research from five studies suggests that foam rolling and roller massage offer short-term benefits for increasing joint ROM without affecting muscle performance.

These findings are similar to other reviews (Beardsley & Skarabot, 2015; Mauntel et al., 2014) and suggest that using a foam roll for 30 seconds to 1 minute (2-5 sessions) or roller massager for 5 seconds to 2 minutes (2-5 sessions) may enhance joint flexibility as a pre-exercise warm-up and cool-down. As noted in the review by Cheatham et al. (2015), the changes in ROM may be due to the altered viscoelastic and thixotropic properties of fascia, increases in intramuscular temperature and alterations in muscle-spindle length.

Three studies measured the effects of SMR on DOMS and muscle performance. The results suggest that foam rolling and roller massage after high-intensity exercise enhances postexercise muscle recovery and reduces DOMS, especially in subjects using SMR as a postexercise intervention period ranging from 10-20 minutes per day. The authors postulated that DOMS is primarily caused by changes in connective tissue and SMR tools, such as foam rollers or roller massagers, may have an influence on the damaged connective tissue. Finally, three studies qualified for the analysis on the effects of SMR prior to muscular performance using a foam roller or roller massager. The research suggests that short bouts of foam rolling (1 session for 30 seconds) or roller massager (1 session for 2 minutes)

prior to activity does not enhance or negatively affect muscle performance, but may change the perception of fatigue (Cheatham et al., 2015). One note regarding the research in this area is that all the SMR methods were preceded with a dynamic warm-up on the lower extremity. Cheatham et al. (2015) indicated that these SMR tools may have more influence on connective tissue than muscle tissue, thus explaining the altered perception of pain without change in performance.

Conclusion:

Overall, the four reviews provided varied results regarding the use of SMR tools on joint ROM, muscle recovery and performance. However, there appears to be a consensus from all four studies that SMR, using foam rollers and roller massagers, leads to increased joint ROM acutely and appears to alleviate DOMS acutely. The findings also indicate that short bouts of SMR (30 seconds to 2 minutes, 1-5 sessions per day) may be adequate to enhance joint ROM and reduce DOMS acutely. The four reviews also indicated there is limited evidence that SMR can improve athletic performance, reduce myofascial tone, increase parasympathetic nervous system activity, and improve arterial and vascular endothelial function.

This limited evidence may be a result of the main limitations of the studies which include small sample sizes, varied SMR tools, methods, protocols and outcome measures. This makes it difficult for a direct comparison of studies and developing a consensus on optimal SMR programs and interventions (cadence, intensity, pressure, frequency, and duration). Although the quality of the studies and SMR protocols varied, the results are encouraging and serve as a good foundation for future research on SMR. Future research should focus on replicating previous research methods, using larger sample sizes, including different SMR tools, such as balls, and investigating the physiological and mechanical mechanisms of SMR tools and exercises.

In regard to foam-rolling exercises, Freiwald et al. (2016) noted that overall, there are no established and proven training methods. Future research to define fields of application concerning foam-rolling exercises in sport, therapy and medicine are needed. It is important to remember that though existing literatures provides evidence on the benefits of using SMR, the limitations should be considered prior to integrating SMR tools and methods with clients and patients.

**FOR MORE INFORMATION ON HOLLY AND HER WORKSHOPS
GO TO WWW.ANATOMYTRAINS.COM**

TEACHER IN FOCUS

FIONA PALMER

Motto for 2017 – I am going to make every day, “the best day of my life” and live each day as if it is my last.

I run a small, busy practice in the south east of the UK. I split my time running Specialist Pilates classes for those recovering from injuries and surgery, suffering back pain and for those with pelvic floor problems. My classes are attended by many of the over 50's so being well versed in osteoporosis, breast cancer, hip replacements and shoulder problems has become increasingly important. I also offer manual treatments including the KMI based Structural Integration series. I lead a team of three other instructors who teach classes for Julie Mower (Anatomy Trains Teacher in Australia) and myself and since 2015 have been hosting and teaching Anatomy Trains workshops.

I like running, not far or fast, but I like the feeling and additional energy it gives me. Running has also made me more confident when standing in front of an audience to teach workshops. Last year I was confident enough to take a group of non-runners (mostly with other conditions) over a six week period and teach them to safely run one mile for around ten minutes.

My family, John my partner of 30 years and my grandchildren Sophie (7) and Ben (14), make me smile every single day. I love reading. I know this will not be good for my image but Nora Roberts and Danielle Steele are favorites for a bit of rest and relaxation. I also love to learn from books. You will find all my favorite anatomy books have pages with corners turned down, scribbled notes down the sides, top and bottom, highlighted segments and post it notes stuck in them. I hope my grandchildren, who love sport at the moment, follow my passion for books. They are not going to make much money from selling my well-thumbed collection!

I sort of fell into what I do now by accident. My previous job was the day-to-day management of a team of computer engineers, with branches covering the middle of the UK. I stepped into this role to cover for a friend and simply didn't leave. I had to learn on the job, planning the daily, weekly, monthly schedules for thirty engineers, sourcing parts and doing all the administration. Fitness was what I did for fun, relaxation and to meet with friends - I think I was a bit of a class junky looking back.





TEACHER IN FOCUS

FIONA PALMER

My journey into this field started with a couple of friends who pushed me into running our local fitness classes, as our regular instructor was moving. I decided it was time for a change. My current bosses had offered me the job of running a much larger team of engineers for the whole of the south of England with a move to offices in London's Docklands. It was a brilliant offer, but not for me at that time, so it was off with the suit and on with the Lycra (bright and tight was very fashionable at the time).

In 1996 I trained as a fitness instructor and personal trainer. Was it easy you may ask... hell no! When I realised you had to talk and dance, coordinating the moves for both arms and legs, change direction and keep the group motivated whilst synchronizing with the music, I decided it wasn't for me. My classes were most definitely fun and actually well attended, but well lead? I'm not so sure... For me small groups and 1-1 personal training seemed to work much better and I didn't have to worry about doing it all to music!

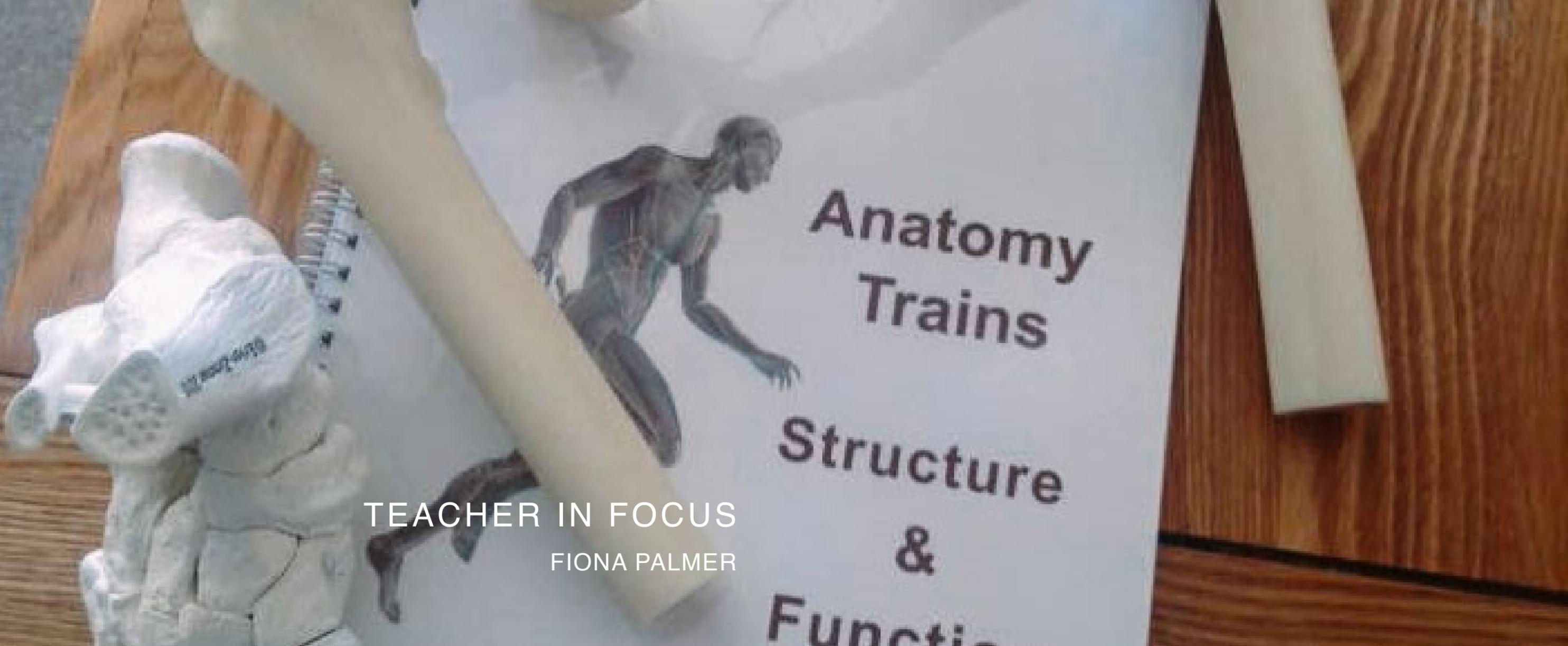
My first light bulb moment, I realize now, was in 2000 when I trained as a Pilates Instructor with Chris Norris, back care specialist and author of Back Stability. Chris ran the anatomy side of the course whilst Cherry Baker ran the Modern Pilates section. During the course Chris mentioned Vleemings 'posterior oblique sling' and how it created force closure and therefore support of the sacroiliac joints. My training in the fitness industry had not prepared me very well for the level of anatomy Chris was teaching. So alongside my Pilates training, I decided to study Sports and Remedial Massage.

My second light bulb moment was when I understood that 'touch brings awareness'. My clients were suddenly able to access parts of their body previously hindered in movement or they were able to move differently. Using my hands, even inexperienced hands, made such a difference. This meant taking the massage training seriously and not just to learn the anatomy!

It was not until a couple of years later that those words, 'Vleemings slings', would pop back into my mind. Whilst attending a workshop for manual therapists, Tom Myers' name and Anatomy Trains kept cropping up. My first port of call was to order his book, second was to actually read it and when I did... OMG this took things to another level again! Tom's book was to take pride of place on my shelf and I got into a cycle of opening it, reading sections, trying very hard to completely understand it and popping it back on the shelf for another day! My voyage into this fun, fascinating and exacting world continued in 2006 with an Anatomy Trains workshop and meeting James Earls.

These last eleven years have taken me to highs and lows I could never have imagined. I met Tom Myers and completed my Structural Integration training in 2007. Having Tom, Lauren Christman and Larry Phipps as teachers and guiders through the training was amazing. Each expert imparted something essential and different. Yet for me, that was really just the start.

It took a lot of time to assimilate all this information and, when I finished my training, I had a whole bunch of techniques and could emulate (in my inexperienced way) what I had learned but I found it hard to truly see things and I just didn't feel it. I knew I needed to completely understand the process so I chose to sit in on the next training sessions. What I learned from observation changed something. My clients saw a difference too, they asked if I'd been away training again! This inspired me to team up with James Earls on his tour of the UK assisting on all 'Anatomy Trains' workshops. I was part of all the full KMI trainings and this gave me the opportunity to experience things again and again and little by little I grew as a practitioner.



TEACHER IN FOCUS

FIONA PALMER

Standing at the front of a class and taking the group through a movement session for the first time was still so scary though. The day I gave my first student demonstration I was actually ill but being asked by Tom to have a go at teaching was amazing. Deep down however I still felt I didn't know enough and when Tom asked again I wanted to decline, but he was ready for my answer. His reply was simply "the best way to learn something is to teach it to someone else".

The day I presented the 'lateral line' to a paying audience in front of James, I was shaking so much I had to turn the pointer off. I couldn't keep the light on the back wall, let alone on the presentation! I had to make a joke "at least if I use my finger it is in the approximate vicinity of what I am talking about". I learned that a bit of humour is good for everybody.

Assisting James also gave me the chance to see his book *Born to Walk* come to fruition and the movement and assessment part of our newly formatted workshops evolve.

I have been lucky to assist and learn from James Earls, Michael Watson and Wojtek Cackowski and will be eternally grateful for their encouragement and support. I love my Skype buddies Julie Hammond and Julie Mower who are always there to bounce new ideas around and discuss fears.

So what am I and what do I do? I have my Pilates training sessions and I offer manual therapy. Which is best? Both offer something unique. I am continually on the path of exploration and learning and will not stop. I mostly know when to isolate and when to integrate, what is too much or too little, when to touch or move, when to talk and when to remain quiet. Every body, and therefore everybody, is different. I gather all the information from my books, my teachers, my exploration, and my client's expertise about their own body to facilitate growth, learning and healing in them. A client said to me last week, "this is much more than Pilates, it is therapeutic, you should be made law!" So I have no idea what I do, but how nice is that?

I will let you all into a little secret now. I am a slow learner and learn from doing, hearing and seeing, many times. Information and techniques drip feed in. I am not in my comfortable place standing at the front of a room teaching. Self-deprecation is easy and writing this is purgatory. For any of you thinking you'd never be able to follow in my footsteps, think again, turn all those negatives into positives. Take small chunks of information from books and from training, repeat and repeat again and then ask to help out. If you don't understand something, tell somebody and chances are it'll get clearer. Meet your fears head on, they do actually get a bit less scary, and that nervousness, that little bit of fear, it means you care, it means you want to do a good job. You need passion, you can't just regurgitate information. You have to love what you do, there has to be passion. You have to be you!

I am trying to work with this as my motto – "If I can't explain something simply, I don't understand it well enough".

As a teacher of 'Anatomy Trains', when a student walks through the door to embark on their learning journey, I want them to know that if they are nervous, so was I. I want them to go away with the love I have for the work and a good grounding in the basics.

My next adventure will be a human dissection with Tom Myers. I am excited, nervous and scared. Will it answer some questions or give me more? Clarity or confusion? I do not know. My heart tells me it will give me a deeper understanding about what to do. My gut feeling is that this will be transferred into what I do and teach. My head, and the scared bit of me, says run the other way!

My journey continues..... I am a work in progress..... Watch this space!

For more information on Fiona Palmer and her upcoming workshops go to www.anatomytrains.co.uk or www.pilateseastanglia.com

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