TRAIN YOUR FASCIA TONE YOUR BODY

THE SUCCESSFUL METHOD TO FORM FIRM CONNECTIVE TISSUE

DIVO MUELLER I KARIN HERTZER

Train Your Fascia, Tone Your Body

DIVO MUELLER I KARIN HERTZER

TRAIN YOUR FASCIA TONE YOUR BODY

THE SUCCESSFUL METHOD TO FORM FIRM CONNECTIVE TISSUE

- Reduce Cellulite
- Eliminate Bat Wings & a Flabby Bottom
- Get a Slender Shape

Meyer & Meyer Sport

Original title: *Training für die Faszien*

Translated by: AAA Translation, St. Louis, Missouri

British Library Cataloguing in Publication Data

A catalogue record for this book is available from the British Library

Train Your Fascia, Tone Your Body

Maidenhead: Meyer & Meyer Sport (UK) Ltd., 2017

ISBN: 978-1-78255-791-3

Aachen, Auckland, Beirut, Cairo, Cape Town, Dubai, Hägendorf, Hong Kong, Indianapolis, Manila, New Delhi, Singapore, Sydney, Tehran, Vienna

Member of the World Sport Publishers' Association (WSPA)

ISBN: 978-1-78255-791-3

Email: info@m-m-sports.com

www.m-m-sports.com

Contents

Preface

Dear Readers,

Welcome to the fascinating world of fascia, and welcome to this innovative training to create firm connective tissue. Karin Hertzer, Robert Schleip, PhD, and myself look forward to sharing our excitement for this Cinderella organ with you.

In this book we have compiled content, concepts, and new scientific findings that focus specifically on toning and strengthening the connective tissue. This book is therefore directed at people who suffer from soft, so-called weak connective tissue, hypermobility, and cellulite. There are currently several publications on the German book market featuring basic fascia training exercises that primarily focus on fostering resilience and flexibility. Most of these fascia-oriented programs were inspired by the fascial fitness training approach that we as the core team of sport scientists, fitness coaches, and physical therapists developed in close cooperation with the Fascia Research Group in Ulm, Germany under the direction of Robert Schleip, PhD.

This book has a different—and specific—goal since it focuses on strengthening the tonicity of fascial tissue and thereby improving the body's contour and definition. In the theoretical part of the book you will learn about the huge extent to which fascial tissues contribute to healthy tone. For a greater understanding we provide actual findings of fascia research in text that is easy to follow and includes lively examples.

Let us take you into the fascinating world of fascia! You will better understand your body, learn which connective tissue type you are by taking the self-test, and achieve optimal results using the training program we introduce in the second part of the book.

The subject of strengthening and toning connective tissue seems to appeal more to the female clientele. Not much of a surprise, considering nature has equipped women with

rather soft and floppy tissues (without which they couldn't carry babies and give birth). Aging and the effects of gravity also take a toll, but we don't have to take that lying down. The content and exercises in this book are therefore directed specifically at women whose connective tissue is too soft and their muscles too slack. There are plenty of vicious terms for this, from flub to Jell-O to cottage cheese. Even I use one or the other in this book, but please don't take that the wrong way. Since I, as a mature women in my mid-50s, am a member of that species I dare to do so with just a pinch of humor.

The nice thing about this specific fascia training is that not only are the exercises extremely effective in sculpting the body, tightening muscles, and improving cellulite, but they are also fun. The women in my classes love the dynamic exercises, the energy of the power sounds, and the physical challenge, and not least of all, they like the all-around sense of well-being at the end of a session.

Enjoy reading the theoretical part of the book and implementing the exercises. And remember, it is not so much about dogged ambition and achieving perfection, but rather about creating a strong, elastic, and firm fascial body!

Munich, Germany, July 2015

Divo Mueller

THEORY

Let's Discover the Fascinating Fascia!

In this theoretical part of the book you can expect to find current concepts from international fascia research that has discovered and rediscovered the importance of this previously neglected tissue.

First, we will address some basic questions, and outline what exactly a fascia is and what impressive contributions this whole-body network makes to our well-being, our ability to move, and the body's contour.

Here we will primarily focus on the weak, flaccid, or too soft connective tissue types and provide background knowledge, scientific findings, and information that will help you figure out how to move through life with a toned and shapely body.

7 Fascia: The Forgotten Organ

Until just a few years ago, only insiders were familiar with the fascia. Next to a few alternative manual therapists and some proverbial die-hard scientists only the meat industry was interested in that fibrous white stuff. After all, tender meat sells better than tough.

Tender or tough, this question is essentially settled on the intramuscular connective tissue. A smaller group of chiropractors, led by the osteopaths, were already aware of muscular connective tissue in the last century. The forefather of osteopathy, Andrew Taylor Still (1828-1917), had already attributed exceptional properties and profound importance for healing to the fascia. It was, however, completely intuitive since his knowledge was not founded on a specific scientific basis. From there, Dr. Ida Rolf, an American biochemist, developed Rolfing, a deep-tissue massage, which inspired manual therapists to apply myofascial techniques with remarkable healing effects. Still, from today's point of view, the explanatory models used were outdated and not very convincing.

Meanwhile, there is a worldwide pioneering spirit. Since the first international Fascia Research Congress in 2007, held at the prestigious Harvard Medical School in Boston, the topic of fascia has become fashionable. This field is led by pioneers and mavericks, such as the young up-and-coming anatomy professor Carla Stecco (Padua University), who just recently published the first fascia anatomy atlas in medical history; the leading fascia researcher Dr. Helen Langevin (Harvard Medical School), who ascertained, among other things, that the effects of acupuncture can also be attributed to the stimulation of

the collagen fibers and cells that produce collagen, the fibroblasts; and the later-in-life researcher Robert Schleip, PhD, (Fascia Research Group, Ulm University), who began his career as a psychologist and physical therapist (Rolfer and Feldenkrais instructor) and has now become an international networker for all things fascia.

Many findings from current research attest to the old intuitive knowledge, and thus the findings by Andrew Taylor Still and his colleagues that were based on dubious gut feelings. Some things must be qualified and newly evaluated from today's point of view. But beyond that the tissue that was previously neglected as relatively worthless fill-material by medical research is leading us into uncharted territory. More and more, this connective fibrous network and its liquid antagonist, the ground substance, turn out to be a jack-of-all-trades team that can be found in every nook and cranny of the body. Not only is fascia a part of the human body's every movement but it appears to also be responsible for many disorders such as chronic back pain and many other soft-tissue problems. It directly interacts with the autonomic nervous system and is sensitive to stress. In addition, it appears to be our largest sensory organ for body awareness. A current hopeful lead even suggests that the occurrence of cancer may also be linked to this matrix of life, which may result in new forms of treatments.

More diligent and sound research is needed. But one thing is already apparent: this previously denigrated-as-makeshift tissue is currently on a triumphal march with sweeping significance to exercise, health, and therapy. Modern research techniques make this possible, and the age of the connective tissue has come.

From Cinderella organ to the limelight

The whole body network is one of the most underestimated tissues in our body. Current research proves that the fascia forms an important basis for physical health and athletic performance ability. Scientific discoveries by international fascia researchers are generating groundbreaking findings, resulting in a reorientation of sports performance and medical rehab.

This also applies to all exercise programs that focus on health and physical fitness. The fascia participates in every movement—not just walking, dancing, and skipping, but also throwing and stretching.

Healthy fascia structures form protective joint capsules, contribute to core stability and a strong back, and are responsible for the body's muscle definition and contour. As a sensory organ they facilitate smooth, elegant movement, and they have a determining influence on how good and at home we feel in our bodies. So after years of neglect, there are plenty of reasons to pay more attention to this fascinating network.

Healthy fascia: Harmonic movement

Our body consists of a surprisingly large portion of fascia. In an adult this amounts to about 39 to 51 lbs of connective tissue that, depending on composition and structure, handles different tasks. To understand how tight and strong connective tissue is constructed we will take a closer look at the fascia of skeletal muscles. They participate in every movement, allow us to stand upright or sit, to walk and run. But they also participate when we twist, squirm, and squat, when we move our head or throw a ball. The reason is that the skeletal muscles are surrounded and permeated by a network of fascia arranged according to a smart biological blueprint.

Fascia: The Whole-Body Network

The muscular connective tissue is a three-dimensional mesh that permeates the body in every possible direction: from top to bottom, from front to back, from the outside to the inside. As the name connective tissue aptly suggests, as a whole-body network it weaves structures together. Depending on function and load, it forms high-tensile bands and coarse membranes, but also very flexible sheaths and delicate sacs.

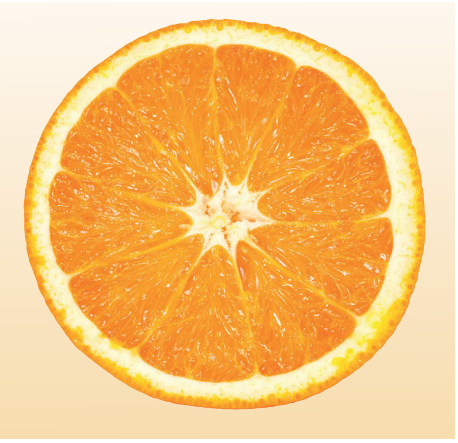
The muscular connective tissue essentially consists of collagen fibers and connective tissue cells as well as lots of water. The collagen fibers compress into flat membranes according to body context and demand, but they also weave together in seemingly endless continuity into the innermost part of the muscle. Intramuscular collagen looks like delicate gossamer that continues to unravel to enmesh every single muscle fiber. That is why in this book we repeatedly refer to the collagen network.

The orange model

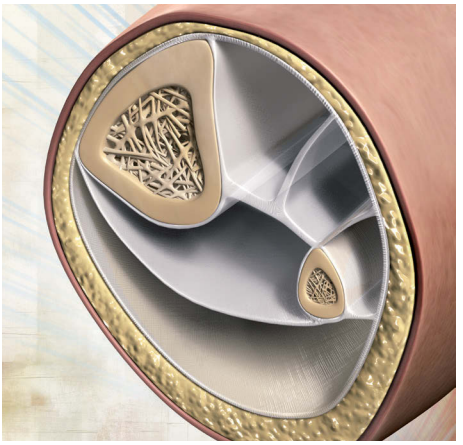
We like to use the orange model to gain a better understanding of how fascia is organized within the body. When you remove the orange peel and look at it from the inside, the white fibrous tissue is like the surface fascia (fascia superficialis), the subcutaneous fatty tissue. This upper layer is clearly separate from the next subjacent one because you are holding the peel in one hand and, separately, the enveloped flesh of the fruit as a compact whole in the other hand.

Analogously, underneath its subcutaneous fat tissue the human body has muscle fiber that is completely enveloped by the immediately subjacent deep fascia (fascia profunda).

In class I call this layer the catsuit, because it should ideally hold us together like a tight-fitting leotard. This layer is permeated by lots of nerves and blood vessels, and in our youth possesses considerable tension—at least as long as the collagen fibers are tight and toned. As we get older, the collagen fibers inevitably come apart at the seams due to lack of exercise or poor lifestyle choices. The body then loses tonicity, becomes flaccid, and we lose our previous well-defined body shape.



Striking similarity: Whether orange or human, both consist of lots of water neatly packaged via the bag-in-bag principle.



Cross-section of the human thigh: Connective tissue structures the body into so-called septa, similar to orange segments.

Of sections and septa

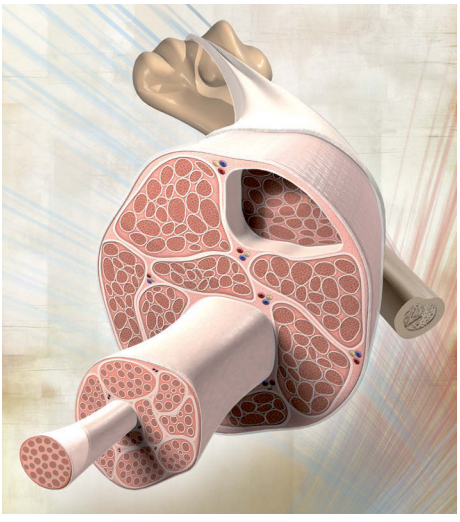
Let's stick with the orange model. Next, we separate the fruit into individual segments. Inside the muscle the fascia forms separating walls called septa. They subdivide the muscle into smaller functional units. Similar to orange segments, individual muscles are also packaged inside a collagen sheath, the so-called epimysium. If you open up an orange segment, the juice runs out, but when you take a closer look you can see that the sweet liquid is packaged in more delicate sacs. Transferring this to the organization inside the muscle, these correspond to the intramuscular connective tissue, the perimysium. But the continuity of our collagen network goes even farther. As a microstructure, it enmeshes every individual muscle fiber. This ultra-thin connective-tissue layer is called endomysium.

According to Robert Schleip, PhD, "our skeletal muscles usually don't consist of a single cord that is attached to the bone. If that were the case, they would not be as flexible and

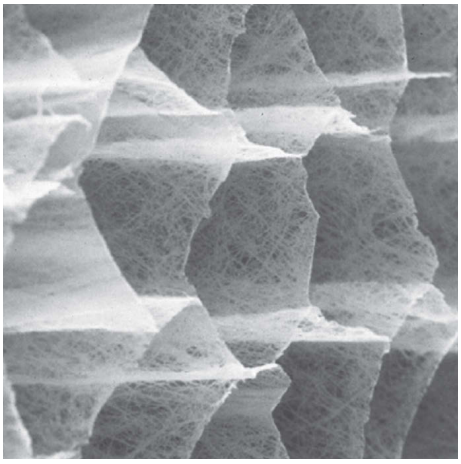
simultaneously strong and tear-resistant to be able to perform all kinds of movements." This means that, based on a specific building principle, our muscles are made of thousands of fibers that feed into a particularly resistant fascial tissue, the tendons, and after that adhere to the periosteum, or rather certain insertions on the bone. In nature, the sheath-to-sheath principle has proven effective for the structure of skeletal muscles, where multiple muscle fibers are bundled inside individual sheaths, and an outer sheath again envelops multiple muscle bundles.

If you look at a muscle from the inside to the outside you can see three types of sheaths:

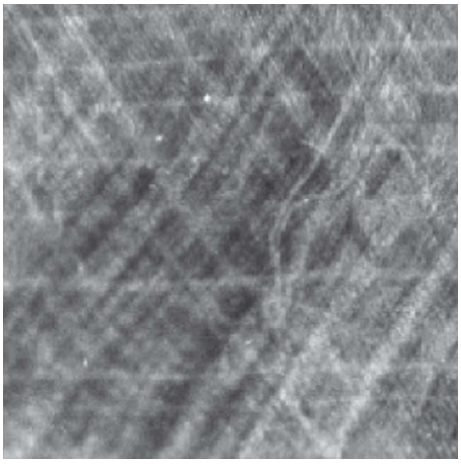
1. Endomysium (endo = inside, within): These ultra-thin fascia surrounds every muscle fiber.
2. Perimysium (peri = around, surrounding): These fascial sheaths bundle together multiple muscle fibers that are covered by the endomysium. Since these bundles rest next to each other in a tube, they form the separating walls within.
3. Epimysium (epi = on, across, upon): This is the outer fascia sheath that surrounds the entire muscle and holds together all of the muscle fiber bundles in a sort of tube. The epimysium consists of connective tissue that is ideally one half to one millimeter thick.



A whole-body network envelopes, permeates, and interweaves all muscles. In doing so, the protein component collagen weaves itself into a flexible sheath around the muscle, divides into more delicate sacs surrounding individual muscle bundles, then interweaves these in the form of fine gossamer within the muscle, and finally enmeshes each individual muscle fiber.



The finest fibers: This image shows the fine sheath surrounding individual muscle fibers, the endomysium. Impressive is the geometric bio structure reminiscent of honeycomb.



This orderly lattice structure is characteristic of young and healthy fascia. Anatomy professor Carla Stecco (Padua University) discovered that the angle is exactly 78 degrees. This lattice structure can be found in the muscle sheaths and the epimysium.

An adaptable network

During fascia training, we utilize the anatomy of continuity and are impressed by the collagen tissue's enormous adaptability. Resilient membranes or traction-resistant chords (but also flexible sheaths) form according to physical demand and context.

For example, if you touch the outside of your thigh it usually feels more defined and firm than the inside. The outside of a toddler's thigh is still just as soft as the inside. Because we respond to the challenge to stand up and walk on two legs, we evolve into

a kind of "long-legged human animal" with ability to run, walk, and skip, fostering a strong, elastic, and force-resistant membrane on the outside of our thigh. But like with muscle and bones, if you don't use it, you lose it. In walking and running we naturally put strain on the soft tissue. They will respond with creating more sturdy, collagen-filled fibers. The opposite is true for an notorious coach potato and the associated lack of movement and loading. The formerly tight and toned fascial membrane loses firmness and structure. On top of that, we sacrifice inherent capacities gained from evolution and biology over millions of years, such as a light-footed, smooth gait or the highly efficient long-distance running. Add to that the loss of aesthetics because all of this makes the thighs flaccid and shapeless.

But the ability to shape tissue is also an incentive. Over time, adequate training stimulus can make collagen structures strong and firm again. That is why our motivating motto is: Train your fascia, tone your body!

The body as a river

With all the excitement about the versatility of collagen fibers, we must not forget one thing: Connective tissue consists of fibers, but mostly—like an orange—it consists of fluid. By the same token you could also say that the largest volume share in tissue is water and it was skillfully packaged inside the human organism based on the bag-in-bag principle as a clever evolutionary invention. It is still a largely unappreciated fact that the living body consists mostly of the saline primordial ocean from which our ancestors emerged half a billion years ago. That means modern humans are also cleverly packaged water (with 50 to 70% water content, depending on age) that nature has integrated into a collagen network of countless sacs and bags. The findings from modern water research are of great importance to fascia training and its fluid dynamics. You can read more on this topic in chapter 3.

A Tight Skin Is More Important Than Lots of Filler

At this point, I would like to introduce the sausage skin and sausage filler model. A sausage consists of a doughy mass that is contained by the skin. This metaphor is easy to understand because muscle mass is packed into the fascia sheath surrounding the muscle, the epimysium.

In order to have a toned body contour, it is not necessary to build up lots of mass and walk around like a pumped-up Michelin Man (provided that's not your beauty ideal). If the surrounding collagen sheath is strong and toned, lean muscles will have a clearly defined and graceful shape. Even if a body has a higher percentage of fat, the body