Chapter Two

Structure and the Body

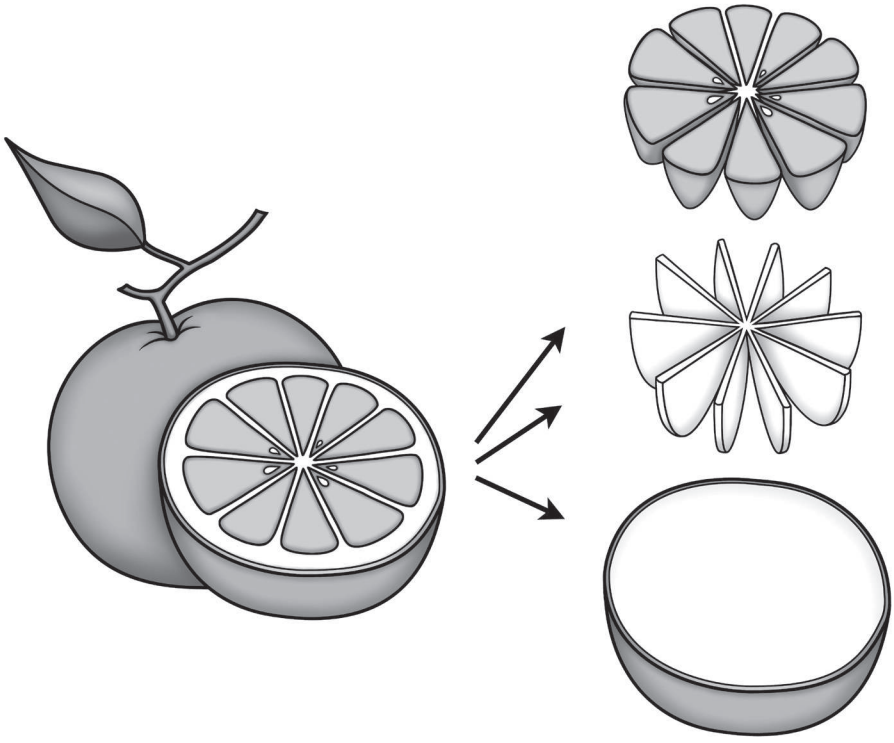
"Structure governs function . . .
abnormal structure governs dysfunction"
David J. Martinke, D.O.[54]

The body begins as a single cell. One egg, the largest cell in the human body, and one sperm, the smallest, unite to create a fertilized egg. Life is born.

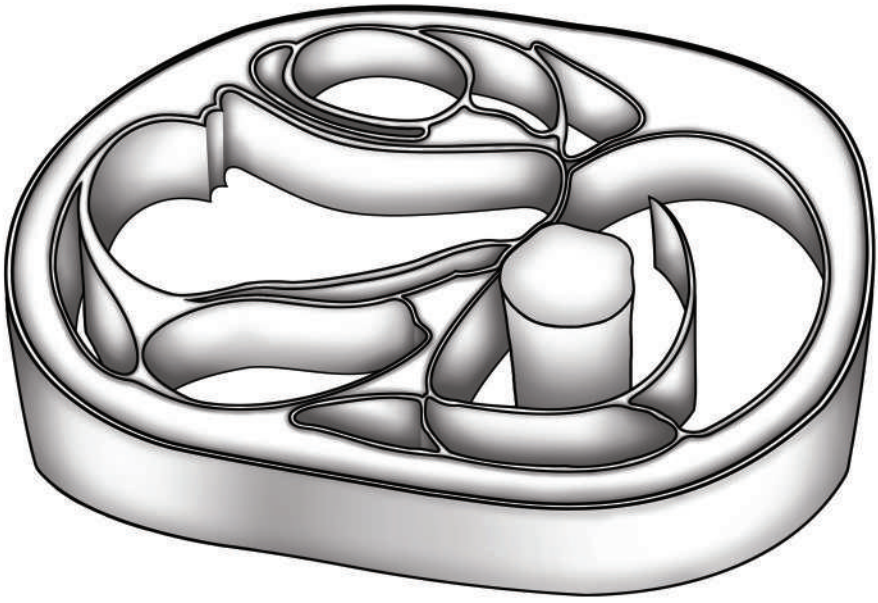
The human body begins to grow. Each cell is intimately connected to its neighbor in the ever-evolving symphony which becomes our body. Cells split and generate new cells. Eventually, muscles, organs, nerves, and connective tissue begin to differentiate from each other. Various parts of the body continue to relate to each other, both as neighbors and as intricate, interrelated parts of the whole.

As the body grows, a sweater-like structure begins to form. This sweater wraps around cells, organs, muscles, and bodily structures, holding them together. It also separates each of them from its neighbor. This three-dimensional sweater is called fascia.

Just as the white of an orange surrounds and separates every section of an orange all the way down to the pulp, fascia surrounds and separates every structure and every cell in our body with strong collagenous fibers, all the way down to the cellular level.



As the white of an orange separates individual wedges of fruit, a woven sweater of fascia surrounds and separates all the body's structures



A cross-section of a leg with the muscle and bone removed reveals the layers of fascia that surround and separate all the structures of the leg.

The Body as a Whole: An Interconnected Puzzle

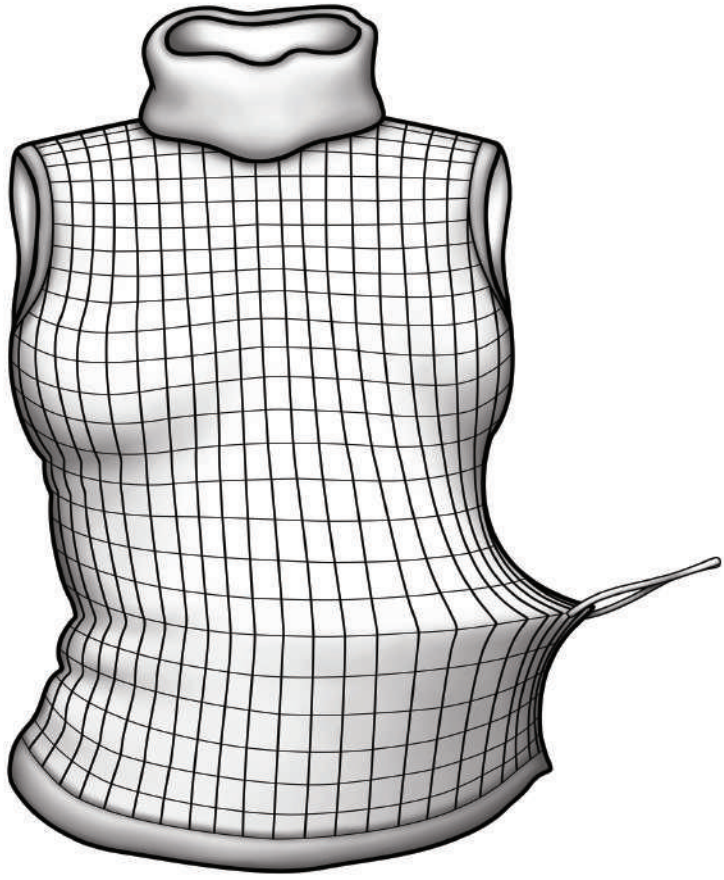
Adhesions (which we examine in detail in Chapter Three) can form anywhere in the body, wherever we heal. When they attach to the fascia, they can (and often do) create powerful bonds between structures within this fascial web. Like boats bound together side to side by ropes, movement in one area will cause a pull in another. Said another way, adhesions act like a run in the sweater of our fascia. Any bond or pull on that sweater will cause a concurrent pull further up or down the line.

Because of this whole body nature of fascia, we have found that the area of pain or dysfunction in a patient is not always the geographic center of the problem. In many cases, a distant area or site may be the primary cause of the pain or dysfunction in another location. While our patients may seek our treatment for pain or symptoms in one specific area, such as the uterus for pelvic pain or the head for headaches, we generally look at that area in relation to the entire body in order to see the full picture as to what may be causing problems for our patient.

For example, as the psoas muscle passes through the pelvis, it connects the vertebrae of the low back to the front of the leg. While the delicate ovaries have little functional relationship to the large psoas muscle, the ovaries and psoas muscle share an intimate space. Any trauma to the psoas or low back may indirectly cause damage and inflammation to the delicate tissues where life begins, in the ovaries.

As we will see through examples later in this book, if we do not regard the patient's problem area in relation to the many neighboring structures and the entire body joined by the fascial sweater, we may miss some of the most valuable information available to address and resolve our patient's complaints.

This "whole body" approach to our patients' goals is something that we have found to be missing as Western medicine has progressed into greater and greater specialization.

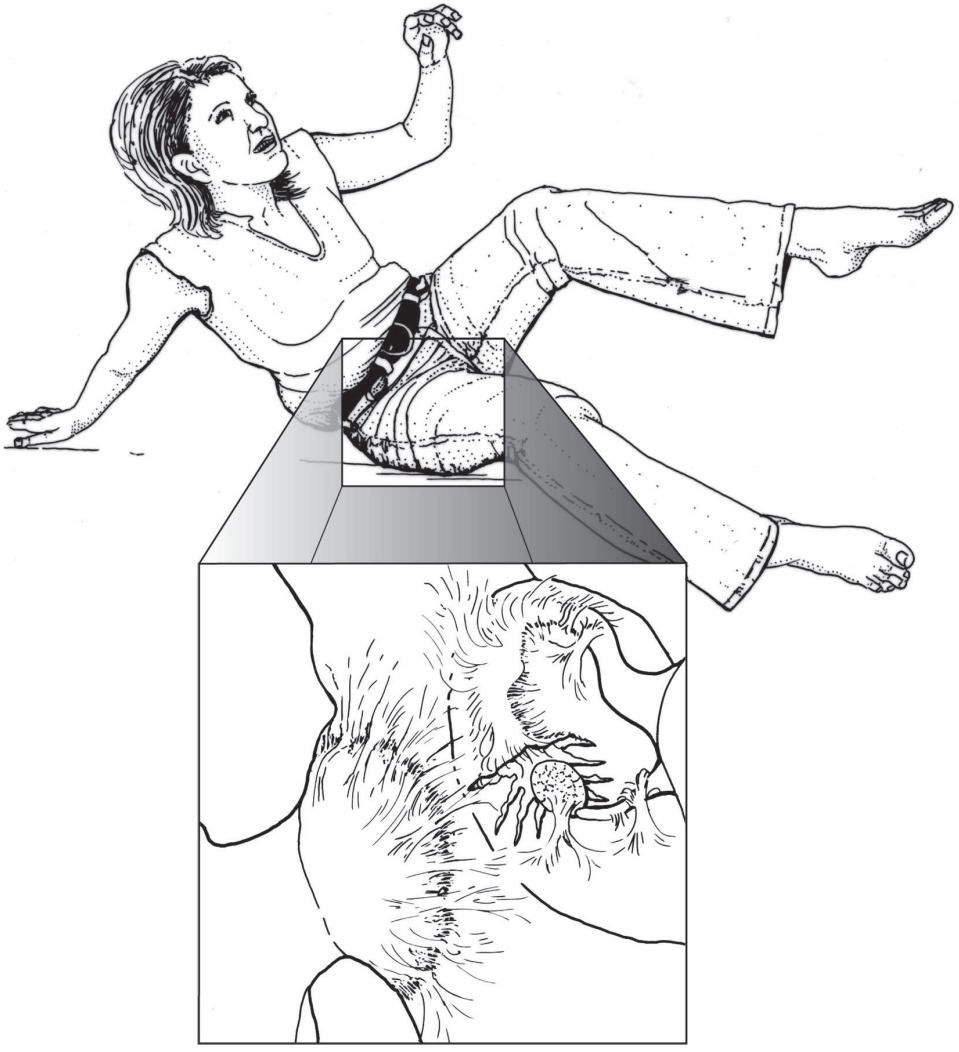


Fascia acts like a three-dimensional sweater, connecting all our body parts into a whole structure. Thus, when one area tightens, the pull can manifest itself in distant tissues and structures, sometimes far from the site of the original injury.

The Body as Parts: The Myth of Specialization in Modern Medicine

As western medicine has evolved, healthcare providers have become more and more knowledgeable about the various bodily systems. With this increased knowledge, physicians and medical professionals have become more and more specialized.

Specialists are highly trained, well versed experts in their fields. While they realize that a physical relationship exists with nearby structures, they are not necessarily trained to think in a "whole body" manner. Thus, a reproductive endocrinologist may concentrate on hormonal response and the function of the ovaries, but s/he may overlook an earlier hip injury that traumatized tissues just a half-inch away. If microscopic fascial adhesions formed within the hip after the trauma, they may have easily created a physical pull through adhesions or the fascial sweater, affecting the ovary and delicate finger-like fimbriae at the end of the fallopian tube on the other side of the pelvic bone.



A fall onto the hip can cause glue-like adhesions to form in delicate reproductive structures, just a half-inch away.

Unexplained Infertility after Motor Vehicle Accident

- Stacy's Story

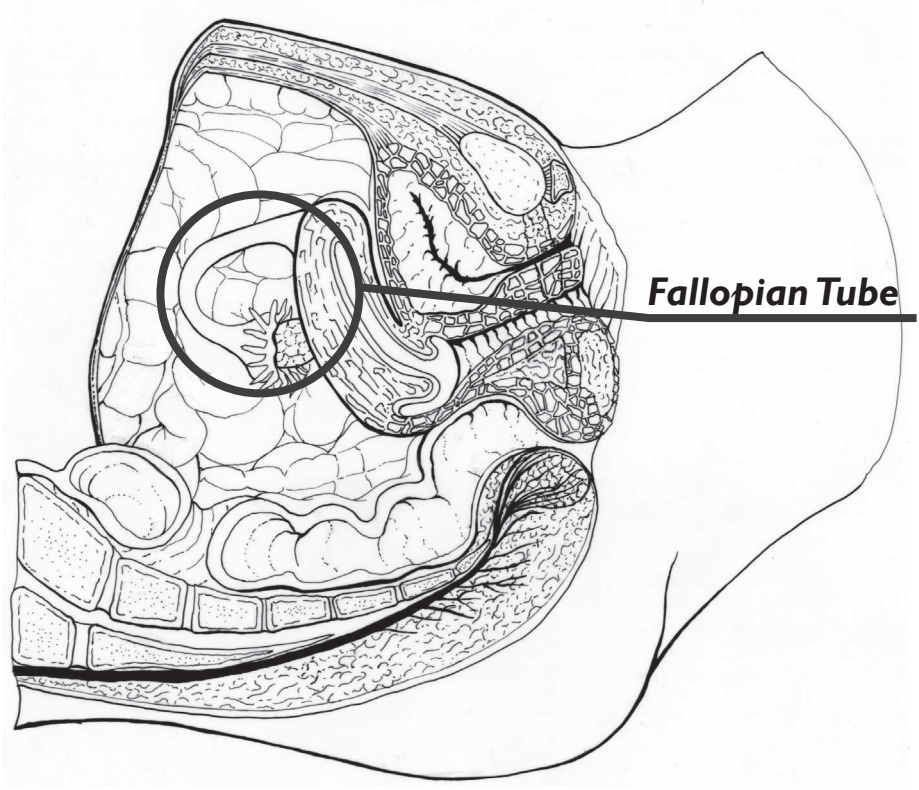
Stacy, one of our former patients, came to us with just this problem. She sought our treatment to help resolve her unexplained infertility. Stacy had been treated for two years by the head of reproductive endocrinology at a large medical school. Her physician was a highly respected infertility specialist, but despite his skills, she remained childless. In fact, she never had a single pregnancy during that time.

When we conducted her onsite evaluation, we learned that Stacy had sustained injuries to her hips and pelvis in a motor vehicle accident several years before. The more we spoke, the more this trauma stood out to us as a possible source of her infertility problems.

When we treated her, we addressed all of her reproductive structures, but also paid special attention to her hips, which are the joints where her legs join her pelvis. Anatomically, we noted that the inside of this joint was very close to the ovaries, at the ends of her fallopian tubes. We thought it was reasonable that adhesions which formed here after her accident may have spread over time, and now involved her nearby tube and ovary.

As it happens, Stacy became pregnant naturally two months after therapy and delivered a baby boy. She has since reported another natural pregnancy and live birth, so her infertility is a thing of the past.

We often find that patients never discuss seemingly unrelated injuries or traumas with their specialists. This is unfortunate for patients like Stacy whose infertility was apparently initiated by trauma to neighboring structures, rather than directly to the reproductive organs. As holistic practitioners, we review our patient's specific focus and goals, and then step back to regard, examine, and palpate their body as a whole. Even if a person comes to us for treatment as specific as opening blocked fallopian tubes, we find it is important to examine all of the soft tissues of the body and resolve any mechanical mobility problems we find. This is critical in our minds, due to the interconnectivity of fascia and the interrelated structure of the body.



The fallopian tubes lie much deeper in the body than we can palpate. We access them indirectly through the fascia that joins all structures.

The fallopian tubes lie very deep within the body. In order to access them, we have to palpate through multiple layers of tissues, and around other body structures. If there are restrictions in surrounding layers or neighboring tissues or structures, we have to clear those if we expect to achieve success and lasting function of the tubes. Thus, we take the treatment layer by layer. Once we have cleared adhesive cross-links and spasm in surrounding tissues and structures, we can access and treat the actual organs that are the focus of our patient's goals.

We know that this therapy opens fallopian tubes, and we understand that adhesions are the most common cause of fallopian tube blockage. We use the interconnected sweater of fascia to indirectly access and treat these tiny, deep organs, and help restore their function.

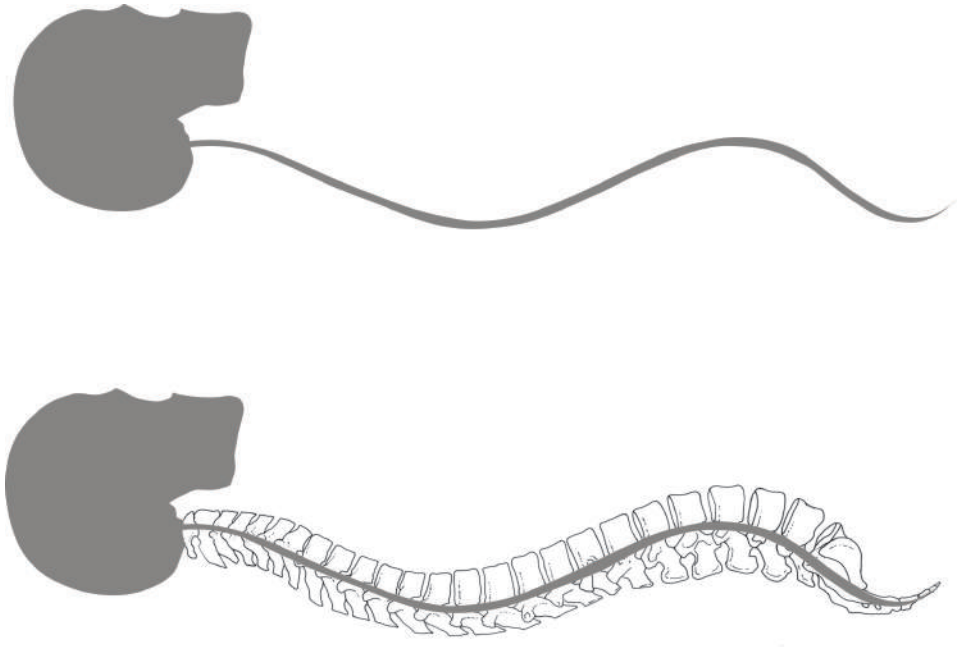
The Patient is an Expert

We have found that relying on the patient's intuition and opinions often helps tremendously in this process. For example, we ask our patients to tell us specifically what they are feeling in their bodies while we are treating them. After all, it is their body we are treating. In our view, who can better tell us what is going on within our patient's body than our patient? Each patient has extensive, intimate knowledge of his/her body — from traumas, falls, inflammations, and surgeries to thoughts, hypotheses, and physical and emotional responses to these experiences.

In essence, the sum of patients' lifetime experiences and their thoughts and feelings about them comprise their present physical and emotional state. For this reason, we regard each patient as an expert on her case. Part of our job is to help patients tap into their "inner knowledge" of themselves. This helps us discover, then unravel the physical barriers that stand in the way of their goals.

As we are taking an extensive history, our initial evaluation requires that we listen deeply to each patient's personal experiences and

feelings. As we palpate the body, we feel the adhered tissues and structures with our hands. As we do, we note body tension patterns to determine which areas can move properly and which structures are adhered, inflamed, irritated, or less mobile. We also regard our patients' reactions and emotional responses as we palpate their various tissues and structures to get a sense of any guarding or history about which we may inquire.



The dura (shown above) is a dramatic example of the interconnected nature of the body. This strong sheath of fascia starts at the coccyx (tailbone) and sacrum at the base of the spine. From there, it travels up the body, surrounding the spinal cord and central nervous system. It has strong attachments at the top of the neck and the base

of the skull. From there, it enters the cranium, then spreads like a sweater to totally surround the brain, and all of its internal structures.

Shouldn't Patients be Involved in Their Treatment?

The approach of treating the body as a whole and listening to our patients' personal experiences is not only necessary in our view, it is also exciting for us. In fact, many patients find therapy becomes a marvelous journey as we unravel together the layers of pain, adhesions, and dysfunctions to help free the symmetrical, functional, and pain-free individual from adhesive straight-jackets. Therapy is like uncovering an unfolding mystery with every patient.

In the following chapters of this book, we discuss some of the specific conditions and dysfunctions we have seen resolved through this approach. No matter what our final focus, we do not find it helpful to treat our patients in parts. When patients come to our office, our goal is to improve the overall function and mobility of their organs, muscles, joints, glands, and support structures. Thus, we not only treat their main complaint, but work with a view to restore proper structure, function, and mobility to the entire body.