Somatic Anatomy

Body Systems

A Foundation for Full-Bodied Healing

By Mary Ann Foster
In the previous article on Somatic Anatomy ("Wheels of Motion," February/March 2006, page 94), we began with a study of spatial concepts. Recall that the primary objective of this series is to bridge cognitive studies of anatomy and physiology with experiential studies so your body becomes your laboratory of inquiry. Change begins with awareness. Awareness — of body systems and how they interrelate in a kaleidoscope of changing relationships — creates a foundation for full-bodied healing in massage.

The Family of Body Systems
Awareness of human anatomy as it relates to massage begins with the family of 11 body systems, which are best remembered by the acronym MURDERS LINC (see Figure 1). The group of body systems can be viewed as an extended family. Although each system has a distinct job, subgroups are tightly interwoven and interdependent, paired off in familiar terms that denote synergistic functions such as the neuromuscular, musculoskeletal, or myofascial systems. From a holistic perspective, each body system in this family has a unique personality, a specific job to do, and a working relationship with other systems.

The body systems are packaged within the skin, each taking up a certain amount of space. Massage can be applied with the intention of returning each system to its optimal position, aligning more than just the bone. Each system also has a physiological rhythm that can be tuned into and even matched with the rhythm of our touch. We will move through the body systems in this article starting with the skin and moving down through the layers.

If we massage with an awareness of the qualities of all the body systems, the client's body seems more receptive. This has led me to many interesting therapeutic encounters. In one case, a woman with hip pain and a history of kidney infections came for a massage. As I worked her hips and abdomen, I sensed the various tissue layers and rhythms. All of a sudden, something in her belly gurgled. Then, her bladder lifted up into my hand as though it knew my hands had the intelligence to adjust it. I intuitively and gently lifted her bladder and repositioned it toward her spine. We both knew something healing had occurred. Afterward, she commented on experiencing great pain relief, saying she felt a stretch all the way to her kidneys (perhaps her ureter?). It was as though her bladder recognized a full-bodied touch receptive to all body systems and rose to the surface to take advantage of the opportunity to shift.

Exercise 1 — Full-Bodied Touch
• Place your hands on a partner's back. Allow the entire surface of your hands to contact her body. Imagine your hands as ears, listening to the qualities of all the body systems.
• Sense or visualize the layers of the different systems, from skin through fascia, then muscle, bone, lungs, and heart, all the way through to the front of the body.
• Notice any subtle rhythms that arise. Begin to slowly move your hands, following any rhythms.
• Slowly press and release. Which layers feel supple and responsive? Which layers feel held?
The Integumentary System

More commonly known as skin, the integumentary system covers the body like a glove. It is peppered with an abundance of highly sensitive nerve endings that alert us to a broad array of tactile sensations, from a light feathery touch to deep pressure. As the largest organ of the nervous system, skin is akin to a sensory cloak we wear to protect us from sunlight, abrasions, and other noxious elements.

Skin regulates temperature, cooling the body through sweating and retaining heat with a layer of subcutaneous fat. Skin takes in and processes nourishment, absorbing nutrients in lotions, converting ultraviolet rays into vitamin D, and relying on tactile stimulation as food for neurological development. Skin is also resilient, regenerating faster than any other system, stretching under load, and scarring to shore up tears in its fabric. Since skin is our primary point of contact in massage, before pushing through it to deeper layers, we can help clients by nourishing it with gentle touch.

Exercise 2 — Touching Back Through the Skin

This is a great skill to teach clients who subconsciously draw away from physical contact.

- Put your hand on your face. Can your face touch back?
- Explore this with a partner. Touch her and sense her skin. Then ask her to touch you back with her awareness.
- Move around carefully to different parts of her body. Notice where her skin feels receptive to touch and where it does not.

The Lymphatic System

Directly under the skin lives a lacy network of superficial capillaries and nodes of the lymphatic system, a major player in immunity (see Figure 2). Every movement we make and breath we take pulls open lymphatic vessels, which pick up excess fluid and waste products. This mix is then pumped through a series of nodes where it is cleaned and ultimately drained back into the bloodstream.

Manual lymph drainage (MLD) uses a light, rhythmic touch that gently stretches and twists the skin to open superficial vessels and stimulate drainage. More massage therapists are adding MLD to their toolbox to reduce edema and pain common to injuries. It is also effective after deep-tissue work, which tends to irrigate the tissue bed, because MLD can effectively drain it.

The Muscular System

Peel away the skin and we find a tight, elastic web of more than 500 skeletal muscles wrapping the body (see Figure 3). As the workhorses of movement, muscles lack a mind of their own; they merely carry out commands of the mind. In this sense, muscle patterns quickly become habitual. Thought provides the initiation, but most muscular activity is carried out subconsciously. Try writing with a nondominant hand and it becomes clear how automatic muscle work routines are.

Figure 2 — Superficial lymphatic capillaries and nodes.

Figure 3 — The skeletal muscle system.
By teaching our clients to actively relax or contract muscles, we empower them with both relaxation skills and tools to improve posture and coordination. Although it receives a lot of attention in massage, I find the touch quality of most massage fails to make direct contact with actual muscle tissue.

**Exercise 3 — Muscle Puttying**

Here is an exercise to explore the strong, elastic quality of muscles.

- Imagine the muscles as a layer of putty (or meat) right below the skin.
- On a partner, slowly sink your fingers into the muscles anywhere on the body. Then begin kneading them like you would knead putty, using slow, strong pressure. Methodically follow the muscles until you have covered the entire body.

**The Skeletal System**

The skeletal system is one of the clearest and easiest to find of the body systems, one we can really get hold of. Our bones function as semi-rigid structural struts, attachment sites for soft tissues and fulcrums for motion (see Figure 4). Without them, the body would resemble a worm-like blob, unable to stand and moving with an amoeboid quality.

Bony landmarks provide a great tactile locating system. When lost in a sea of soft tissue, simply palpate the nearest island of bone to identify your location. Since bones are rich in blood and nerves, they benefit from massage. Stretching the periostenum of a once-broken bone can release chronic pain, and repositioning bones can provide a passive education in optimal alignment and muscular span.

**Exercise 4 — Bone Tracing**

Use this exercise to refine palpation skills and increase your client’s awareness of structural support.

- On a partner, meticulously trace the bones in one hand using a clear, light, direct touch. Where the bone is close to the skin, feel the slippery layer of periostenum on top of it.
- Feel the difference between bone and joint structure, being careful not to squeeze arthritic joints.
- After you finish one hand, ask her to compare the right and left. Then, switch hands.

**The Circulatory System**

The heart pumps blood through thousands of circulatory vessels that permeate every nook and cranny of the body (see Figure 5). Although massage is thought to improve circulation, it is impossible to manually push blood back to the heart. Massage can, however, increase local circulation in areas being massaged.

Massage mimics and accesses several blood rhythms: Petrissage mimics the pulsing arterial rhythm of blood; effleurage, the sweeping venous return and static contact, the slow suspension of blood in capillaries. Many address the heart as metaphor, yet we can make direct contact with it by holding it with nourishing touch; gently shifting it toward an easier place; or folding and unfolding the arms, chest, and lungs to massage it with movement.

**Exercise 5 — Heart and Lung Relationship**

Ask a group how breathing shows up in massage and someone invariably answers, "We coach clients to relax by having them take deep breaths." Let's examine this notion.

- Put your hands over your heart and sense its beat. How fast is it?
- Next, take 10 deep, strong breaths, drawing in as much air as possible.
- Now put your hand over your heart and check your heart rate. Did it change? If so, how? →
The Respiratory System

Breathing is to the body as wind is to nature: It blows out toxins and brings in fresh air. Directives like “breathe deeply” or “breathe into the pain” tend to make clients work hard, speeding up heart rate and breathing. To promote relaxation, explore whispering softly to your client, “Let your breathing be slow and easy” or “Let your body breathe itself,” as she settles into a receptive mode. Also, simply following the oscillating tide of the breath during massage can reorganize respiratory muscles, to gently mobilize the spine, open the ribs, and bring an underlying support to the shoulder girdle.

The Nervous System

The nervous system is the master coordinator and regulator of all the body systems. It is a binary system with both functional and structural aspects. Neuromuscular massage techniques that require specific muscular responses from the client access the somatic nervous system, and relaxation massage accesses the autonomic nervous system.

The conglomeration of nerve cells living in the brain and spinal cord resemble a bulbous jellyfish with a long tail. Long fibers grow off each cell body, bundle into cord-like nerves, branch from the spinal cord at each vertebral segment, and thread through bones, between ribs, and within myofascia on their way to the periphery of the body. The natural elasticity of nerves allows them to bend and stretch during movement (see Figure 6). Chronic pain often comes from poor posture that entraps nerves in tight tissues, which can be released by repositioning the bones that nerves pass across, stretching shortening myofascia around them, then applying light neural traction to the limbs and spine.

Exercise 6 — Feeling Neural Traction with the Slump Test

- Sit upright in a chair with both feet flat. Slump forward and hang your head.
- Then lift one foot and straighten the knee. Do you feel a stretch in your spine? If so, it is because the slump takes slack out of the nervous system so nerves in your leg actually pull on your spinal cord.

The Digestive System

The digestive system is a highly specialized organ tube that begins at the mouth, ends at the anus, and fills the abdominopelvic cavity (see Figure 7). It is amazing how much life energy we devote to food yet how little attention the digestive plumbing can receive in massage. Parts of the digestive tube can have high tone (e.g., a tight throat, clenched jaw, or irritated bowel) or low tone (e.g., a distended throat or abdominal viscera). To address digestive tone, it’s helpful to begin a massage suggesting a client relax the tongue.

Abdominal massage can loosen tight viscera, tone loose viscera, and drop distended viscera into the lower back, which can also relieve back pain, plus leave a client feeling thinner and taller. Organs are close-packed in their cavities, wrapped in pockets of fascia, suspended by ligaments. Torsions in fascial pockets can twist organs, causing indistinct discomfort and pain. To release torsions, gently cradle an organ until it relaxes, then slowly turn it until it shifts into a more relaxed position.

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The Urinary System

Although the urinary system gets little air-time in massage, the bladder — a round muscular sack that lives above and posterior to the pubic bone — responds well to massage that stretches fascia around it, especially with clients who have had a bladder tuck to correct incontinence. (Make sure the bladder is empty first.)

The kidneys, which live under the posterior diaphragm and inside the floating ribs, also respond well to touch (done supinely) that helps them sink back and relax, particularly if under stress from overactive adrenals and tight lumbar muscles.

The Reproductive System

The reproductive system defines the ethical boundaries of massage. Professional massage is strictly nonsexual, which can make this system a 900-pound gorilla. As a result, many students avoid working near it, shunning ribs near the breasts, inner thigh muscles, and the hips and sacrum. Fortunately, as sexual boundaries become clearer, reluctance to massage these vital areas fades.

Naturally, issues around the reproductive system differ with gender. Massage can soothe menstrual cramping, release adhesions from large breasts and tight bras, and alleviate aches and pains in pregnancy. Careful inguinal massage can unravel myofascial tensions associated with hernias and release groin pain caused by entanglements in male reproductive tubing.

The Endocrine System

Endocrine glands regulate our metabolism through hormonal secretions. They can be overactive or underactive, potentially leading to metabolic disorders that require medical attention. The glands, which are associated with the chakras, respond well to energy work, vibration, scents, and sounds that either stimulate or sedate them, depending on their needs.

The endocrine system affects deep yet powerful aspects of somatic experience. Ample research from psychoneuroimmunology reveals that positive thoughts, feelings, and relationships boost immune function, whereas negative experiences have the opposite effect. With this knowledge, the physical and emotional environment we create for massage may have as much of a healing effect on clients as does our touch.

Our body systems are so inter-connected that massage of one system always affects another. As the massage field grows in sophistication, so too can our fluency in addressing the tissues, organs, and fluid rhythms within all the systems. With diverse techniques and qualities of touch, plus receptive hands, we can develop the fluency to be inclusive of all the body systems and switch among them as individual needs arise.

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