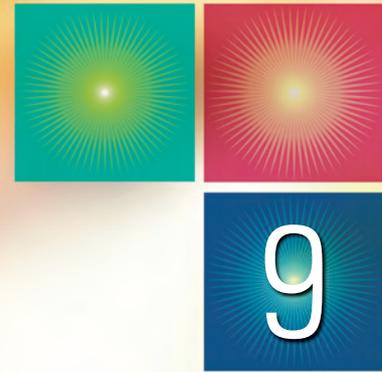


# Myofascial Release

Keith Eric Grant and Art Riggs



## STUDENT OBJECTIVES

Upon completion of this chapter, students will be able to do the following:

- Understand and use the basic terminology and vocabulary for myofascial release in discussing massage or a massage case.
- Display a substantial understanding of the development and use of effective myofascial release techniques for tissue specific massage treatments.
- Understand how the work of MFR flows from and is connected to underlying anatomic and physiologic principles.
- Understand the core concepts and range of diversity of MFR.
- Display knowledge of the benefits, contraindications, and precautions of MFR.
- Learn to adapt MFR to make it your own.

## KEY TERMS

Adhesions  
Adverse neural tension  
Crimp  
Davis's Law  
Fascia  
Hypermobility/ligamentous laxity  
Ideokinesis  
Impingement  
Inherent force  
Lesion  
Lordosis  
Shear strength  
Shear stress  
Sherrington's law of reciprocal innervation/inhibition  
Strain  
Stress (emotional)  
Stress (physical)

Tensile strength  
Tensile stress  
Viscoelastic model  
Wolff's Law

## INTRODUCTION

Myofascial release (MFR) is a collection of approaches and techniques that focuses on freeing restrictions of movement that originate in the soft tissues of the body. The benefits of this work are diverse. Direct bodily effects range from alleviation of pain, improvement of athletic performance, and greater flexibility and ease of movement to more subjective concerns such as better posture. More indirect goals include emotional release, deep relaxation, or general feelings of connection and well-being. Rather than being a specific technique, MFR is better understood as a goal-oriented approach to working with tissue-based restrictions and their two-way interactions with movement and posture.

The umbrella of MFR methods focuses heavily on how postural habits, specific activities or lack of activity, and compensations for prior injuries result in chronic stress and avoidance of full range of movements. These in turn result in both shortening of muscular units and **adhesions** between layers of **fascia**. Fascia forms the passive structural definition of our bodies. Adhesions are places in which separate fascial layers or fibers have bonded together dysfunctionally. The application of controlled and focused force, applied in a purposeful direction, acts to stretch or elongate the muscular and fascial (myofascial) structures toward the goals of restoring the fluid/lubricative quality of



To better understand concepts in this chapter, watch *Myofascial Release* video on the DVD found at the back of this book.

**BOX 9-1 Learning MFR**

Learning best occurs when one reflects on personal experience with awareness but without self-criticism. The former guides our path; the latter impedes our progress. On shifting to a more myofascial approach, the work and techniques may seem strange or uncoordinated, especially if you are used to using a lot of lubrication, following a fixed massage sequence, or keeping to a fixed tempo of strokes. This feeling of strangeness is simply a necessary stage of learning and integrating new kinesthetic skills. As with all who practice and master such skills, you will someday look down to find your body and hands performing skills of myofascial release without conscious thought or effort. Although a single chapter cannot truly provide “How To” instruction, it is hoped that with a clearer understanding of fascia and some of the approaches to working with it, the reader will automatically expand his/her touch and intention to include myofascial work into whatever form of bodywork they perform.

the fascial tissue, the mobility of tissue, and normal joint function.\*

Erik Dalton, an advanced Rolfer and bodywork author and instructor, has described our society as a culture of “flexion addicts.” He notes, “The last century has witnessed a dramatic acceleration in our culture’s flexion addiction. This pervasive and insidious condition is primarily due to the population’s generational transition from an active group of movers to a sedentary bunch of sitters.”<sup>1</sup>

Apart from acute injury, the genesis of pain and restriction is commonly the long-term effect of chronically flexed (i.e., shortened) positions. As noted by Cantu and Grodin,<sup>2</sup> **Wolff’s Law** (the adaptation of bone to repeated patterns of applied force) applied to soft tissue (i.e., **Davis’s Law**) implies that “all connective tissue seeks metabolic homeostasis commensurate to the stresses being applied to that particular tissue.” Tissues habitually held short become physically shortened, both in the contractile elements of the muscle cells and in the more static collagenous elements of fascia that support the muscles. Lack of movement and lines of stress from tension and opposition to gravity facilitate formation of adhesions and fibrosis. Antagonists of chronically activated muscles can be overworked or neurologically inhibited and become fibrotic or weak. Ultimately,

\*The restoration of joint function occurs where such function has been adversely affected by the dysfunction of the surrounding myofascial tissue. The authors differentiate this from dysfunctions intrinsic to the joint itself, which are beyond the scope of our consideration.

pain and dysfunction occur—conditions that myofascial release aims to address by a combination of directly applied pressure, recruitment of neurologic reflexes, and relearning of movement potential. Because our (human) bodies are collections of interacting systems—connective tissue, neurologic, chemical-immune, and emotional—we have multiple paths that we can combine to effect positive changes. We follow suit with Cantu and Grodin’s classification of myofascial approaches as being reflexive, mechanical, or movement-oriented,<sup>2</sup> having used combinations of these in our own work. We distinguish this combined approach from one confining itself to consideration of the purely physical application of force to fascia. An additional subtle but important component of the work is facilitation of the body’s own tendency toward healing and a positive homeostasis when tissues are normalized and dysfunctional habits are retrained.

## HISTORY

In the multiple professions in which manipulation of soft tissue arose in the twentieth century, myofascial release (MFR) became a term of convenience for a wide range of subtly differing but highly valued “goods” of healing and commerce.

Much confusion is saved by remembering that myofascial release is a generic term. MFR is an umbrella term used to describe various approaches, with considerable variation in philosophies and techniques, sharing a common focus of freeing fascial restrictions. Depending upon the personality, training, and skills of the practitioner; the type and degree of restriction or dysfunction; and to a very large extent, the makeup of the client, different techniques may have varying degrees of success. Any technique that works to free fascia is a form of myofascial release, and what works well for one client may not be as effective on another.

The recorded history of the term “myofascial release” is as much a linguistic history as it is a comprehensive gathering of the history of practice. For as long as massage has been practiced in its many forms, and long before dissection demonstrated a separate tissue defined as fascia that surrounds and permeates all muscles and organs, any accomplished practitioner would have felt the distinct properties of fascia as being very different from those of muscle tissue. Simply from tactile distinction, practitioners, consciously or intuitively, would quickly have developed techniques for releasing fascial restrictions that were different from those used to ameliorate purely muscular dysfunctions.

Robert Ward, an osteopath, is attributed with coining the term *myofascial release* in the 1960s.<sup>3</sup> Since then, John Barnes, a physical therapist, has become a well-known writer and teacher of MFR as a separately identified study.<sup>4-6</sup> MFR, however, has been considered by Ward and other authors to be a “bridging technique” that ties together a number of different approaches toward relieving pain and restrictions of movement.<sup>7</sup> Another way of looking at this is that MFR is not so much a technique in itself, as a goal orientation that successfully weaves a number of techniques together. We thus find the underlying “framework” for the development of MFR coming from a number of different treatment traditions involving direct pressure, neurologic facilitation of muscles, and reeducation of learned neuromuscular patterns of posture and movement.

Philip Greenman mentions that “fascia has received attention from such individuals as the osteopathic physician William Neidner, who used twisting forces on the

extremities to restore fascial balance and symmetry.”<sup>7</sup> Ward also suggested that the direct method, called fascial twist, came from the osteopathy school in the 1920s by Neidner.<sup>8</sup> Also according to Ward, myofascial release originated from concepts used by Andrew Taylor Still, the founder of osteopathic medicine in the late nineteenth century.<sup>8,9</sup> Ward further comments that he was using “combinations of isometric, isotonic, functional indirect, and MFR concepts since the early 1950’s, since they were taught by Wilbur Cole and Esther Smoot.”<sup>8</sup> Long before this osteopathic thread of the early twentieth century, we can surmise that the human tendencies toward touch<sup>10</sup> had led to noticing the effects of organized pressure on tissue as well as its abilities to sooth anxiety and reduce pain. The techniques used would have been kinesthetic, observational, and palpation skills passed on as a direct tradition from master to apprentice with little written down (Box 9-2). Techniques would likely have been refined and propagated by traveling practitioners.

### BOX 9-2 Pattern Recognition

One of the threads weaving through much of the writings on myofascial release is the concept of following the palpated “sense” of the tissue. This is a sense that springs forth of its own volition from our past practice and guided experience, not from a process of conscious analysis and rational thought. Its use relies not on what we “know” but on what we have previously done and sensed. The skill of the therapist is often in recognizing causative factors or sensing tissue restrictions intuitively rather than depending upon rigidly prescribed protocols. Two quotes, the first from a scientific text on computer-based pattern recognition and the second from a book on neurologic research and the workings of the human brain, illustrate how deeply human are these unconscious skills. They also illustrate the growing scientific basis for our trained but unconscious skills of reaction to subtle patterns.

“The ease with which we recognize a face, understand spoken words, read handwritten characters, identify our car keys in our pocket by feel, and decide whether an apple is ripe by its smell belies the astoundingly complex processes that underlie these acts of pattern recognition. Pattern recognition—the act of taking in raw data and making an action based on the ‘category’ of the pattern—has been crucial for our survival, and over the past tens of millions of years we have evolved highly sophisticated neural and cognitive systems for such tasks.”<sup>17</sup>

“Your neocortex is a complex biological auto-associative memory. During each waking moment, each functional region

is essentially waiting vigilantly for familiar patterns or pattern fragments to come in. . . . Your brain constantly makes predictions about the very fabric of the world we live in, and it does so in a parallel fashion. It will just as readily detect an odd texture, a misshapen nose, or an unusual motion. It isn’t immediately apparent how pervasive these mostly unconscious predictions are, which is perhaps why we missed their importance for so long. They happen so automatically, so easily, we fail to fathom what is happening inside our skulls. I hope to impress on you the power of this idea. Prediction is so pervasive that what we ‘perceive’—that is, how the world appears to us—does not come solely from our senses. What we perceive is a combination of what we sense and of our brain’s memory-derived predictions.”\*

Even beyond such human capabilities of pattern recognition and prediction, modern neurologic research is opening new windows through which we can view learning and perception and by which we start to have a concept of how we create our innate sense of having a body.<sup>18</sup> It is interesting to speculate, for example, if such research will eventually show that the clinical observations leading to Chinese meridian theory stem not from a direct physiologic property of our bodies, but from within the innate processing of the brain that creates our sense of body from the myriad of sensory information we produce internally. Particularly on the neurologic side, we are only now beginning to understand our full range of functioning as embodied human beings.

\* Duda RO, Hast PE, Stork DG: *Pattern classification*, ed 2, New York, 2001, Wiley Interscience, ISBN 0-471-05669-3, p. 1.

† Blakeslee S, Blakeslee M: *The body has a mind of its own*, New York, 2007, Random House, ISBN 1-400-06469-4.

‡ Hawkins J, with Blakeslee S: *On intelligence*, New York, 2004, Times Books.

§ Melzack R: Pain and the neuromatrix in the brain, *Journal of Dental Education* 65 (12): 1378-1382, 2001.

Another contribution to myofascial thought, also in the 1920s, came from Mabel Ellsworth Todd. In her book, *The Thinking Body*, Todd examines the postural support of the human body and the physical and neurologic pattern basis for our body's amazing abilities to learn and use movement.<sup>11</sup> The book was first published in 1937 but has its roots in Todd's earlier 1929 teaching syllabus titled "The Balancing of Forces in the Human Being." Todd was well aware of the habitual and learned nature of postural patterns of unconscious muscle activation and of the supporting and adaptive role of fascia. She comments, "Fascia constitutes a general interstitial connective-tissue network, traversing all parts of the body, and thickened in various regions to form more or less definitive supporting and protective structures for other parts, whether visceral, bony or muscular. The fascial sheets vary greatly in their density, sometimes being quite tenuous or loosely webbed, containing fat, and sometimes forming dense, glittering sheets resembling the expansions of certain tendons, and like them termed aponeuroses.... Fascial structures, like tendons and ligaments, thicken in areas where extra strength is needed for muscular action, or for support. Fascia, tendons, and ligaments, which are all types of tough connective tissue, function together intimately." Todd's work captured the state of awareness of postural issues at the cutting edge in the 1920s and 1930s and became the basis of a school of work based on retraining of movement and postural patterns. The work, which has extensively influenced dance training, has been carried forward into the twenty-first century by Lulu Sweigard,<sup>12</sup> Irene Dowd,<sup>13</sup> and Eric Franklin.<sup>14</sup> A conceptual line from Todd to Franklin, which became known as **ideokinesis**, tells us that what we visualize—how we conceive our social position and how that affects our body self-image—has profound effects on our posture and movement patterns. Conversely, our posture and movements play back on our internal images and self-image. Change the way a person inhabits his or her body, and you change the person.

From the 1930s up to her death in 1979, Ida P. Rolf developed and taught her work directed at freeing of fascial planes. Rolf began her work in structural integration in the 1940s using yoga postures.<sup>15</sup> She later studied and further developed osteopathic methods. Tom Myers comments, "Rolf studied and worked with a number of osteopaths (reportedly including William Garner Sutherland, the originator of cranial osteopathy). One could consider the Structural Integration system she developed to be a soft-tissue subset of the general osteopathic inquiry, with the exception that SI

looks for general systemic improvement, rather than specific correction of **lesions**.<sup>†</sup> In this, she was more in step with the original ideas of Still and Sutherland, but a bit off from the thrust of osteopathy at that time, which was seeking more legitimacy through demonstrating its ability to deal with specific pathologies as well as structural issues."<sup>15</sup>

In contrast to the early osteopathic twisting methods, such as those of Neidner, Rolf's work was unique in being along straight lines of fascia, to increase congruence with gravity. Rolf's work also fed back into the line of osteopathic work. Erik Dalton recalled a conversation with Robert Ward in which Ward commented on drawing extensively from Rolf.<sup>§</sup> Tom Myers notes that, in the 1960s and 1970s, Rolf turned from teaching her techniques to medical professionals to those coming from a diversity of holistic and alternative treatment backgrounds.<sup>15</sup> Myers himself is notable both as a structural integration instructor and for bringing concepts of fascial force connection to a wider, massage-oriented audience in works such as his book *Anatomy Trains*.<sup>16</sup>

To convey her approaches to those with a more holistic orientation, Rolf came to teach at Esalen Institute, where she would create the nucleus of later structural integration practitioners and provide a juxtaposition of concepts and techniques that created other offshoots. Rolf's residence at Esalen also provided her work with a juxtaposition and conversation with the human potential movement and the Gestalt work of Fritz Perls.

One merging of somatic techniques at Esalen resulted in what came to be known as *deep tissue*. Brita Ostrom describes this evolution.<sup>17</sup> "As practitioners began receiving Rolfing® structural integration (Ida Rolf's Structural Realignment 10-session series of deep, intense bodywork, which she taught at the institute), they became curious about fascia alignment and deeper work. Vicki Topp and others studied anatomy and Al Drucker's offshoot, Esalen Deep Tissue Work, uniting intuitive massage with more physiological know-how. A massage class kept the meditative atmosphere but began to include muscle description and discussion on the physiology of breath." While there is, as with myofascial release, variance in matching technique with vocabulary within the profession, it is this lineage from Rolf's work and its fascial emphasis that sets

<sup>†</sup>Throughout this chapter, the term "lesion" is used in the orthopedic sense of a "myofascial lesion" or "soft tissue lesion"—a focal area of tissue abnormality or dysfunction resulting in pain or movement restriction.

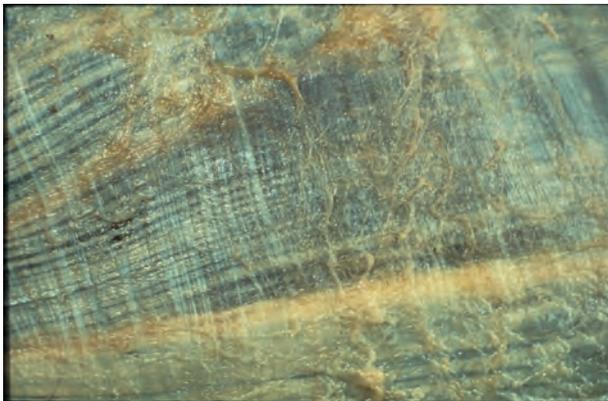
<sup>§</sup>Erik Dalton, private communication, September 2007.

the framework for both “direct myofascial work” and “deep tissue massage” within this chapter. In short, the authors of this chapter take these two terms as being synonyms. We also adamantly differentiate this work from simply doing a “standard massage” with greater pressure, ignoring the changes in intent and anatomical specificity.

## ANATOMY AND PHYSIOLOGY FOR MYOFASCIAL WORK

In order to understand the practice of myofascial release as it has evolved and as it is taught in its many forms as a therapeutic tool, we first need to have a clear perception of what fascia is and how it differs from muscle tissue. The largest practical difference between fascia and muscle is that fascia is not capable of voluntary contraction. Although there is some exciting new research reported by Schleip et al. that demonstrates some contradictions to the following,<sup>18</sup> for practical purposes fascia lacks the circulatory and neurologic capacity to actively shorten and lengthen.

Fascia surrounds each muscle fiber (endomysium), surrounds bundles (fascicles) of muscle fibers (perimysium), individual muscles to differentiate them from adjacent muscles (epimysium), and, as shown in Figure 9-1, is also present in broad sheets to add support to the body. Fascia defines surfaces between structures and acts as adaptable but passive structural support, creating connections between fibers as shown in Figure 9-2. Without fascia and the support it creates in such areas as the plantar region of the foot, the iliotibial band along the knee, along the lateral thigh, and in the lumbar back, the muscles would need to be in a constant (and exhausting) state



**FIGURE 9-1** Sheet of fascial fibers. (Photo by Ronald A. Thompson.)



**FIGURE 9-2** Gossamer strands of fascia between structures. (Photo by Ronald A. Thompson.)

of contraction just to hold the body upright. Instead, the fibers of fascia act to create and support the basic shape of our tissues.

The adaptability of fascia is both its blessing and its curse. Our bodies, although seemingly static in structure, are highly adaptable to what we do and—equally—don’t do. We adapt to the stresses on our tissues from how we move and to the habitual postural positions we adopt in the field of our planet’s gravity. This ability to adapt over time allows us to structurally strengthen both in bone and soft tissue to sustain, for example, long-distance running. Increasing activities too quickly (>10% per week), thus not allowing time for such adaptation, can lead to tendinosis (soft tissue breakdown) and to stress fractures. Equally, however, inactivity and chronic dysfunctional stress applied to our tissues can cause them to adapt in dysfunctional ways, resulting in atrophy, fibrosis, shortened tissues, and adhesions between tissues.

When our tissues, both soft and hard (bone), resist gravity or another force they undergo **physical stress**. We often tend to think of **emotional stress** when we hear the word stress. This might be loosely defined as our sense of burden in coping with activities occurring in our lives. Physical stress, on the other hand, is technically defined as force exerted on a material per unit area of the cross-sectional area perpendicular to the force. Thus, for something like a tendon, the physical stress is the force pulling on the tendon divided, at each increment of length along the tendon, by its area at that point. A further nuance is that stress can have two components: **tensile stress** along the length of something like a tendon as just described, and **shear stress**. Shear stress occurs when side-to-side force is applied in different directions to adjacent areas of tissue. In response

to stress, a material lengthens. The fraction of lengthening (change in length divided by initial length) is the definition of **strain**. When fascia has stress applied to it, it first lengthens elastically. If the force is removed at this point, the connective tissue returns to its original length. It's thought that this elastic region occurs as the **crimp**, or natural physiological zigzagging in the tissue, is removed. This is analogous to pulling on a piece of the rickrack trim used in sewing. If greater force is applied to fascia, it begins to plastically deform, lengthening but creating microtears within the tissue. If the force is further increased to the **tensile strength** or **shear strength** of the tissue, a tear occurs, resulting in discernable injury. In combination, a conception model capturing both the initial elastic phase and the latter plastic or viscous phase is known as a **viscoelastic model**.<sup>2</sup>

If the amount of stress we incur increases gradually, to a great extent we adapt. Davis's Law for soft tissue and Wolff's Law for bone state that tissue is laid down along lines of stress.<sup>19</sup> This is the key to both functional and dysfunctional adaptations. Tom Myers presents the theory that the mechanism for adaptation is not an increase in the rate at which tissue is actually deposited by fibroblasts and osteoblasts, but a reduction in the rate of resorption or removal. The reduction in removal is thought to be induced by a piezoelectric field resulting from the applied stress.<sup>16</sup> Since both deposition and removal occur continually, a piezoelectric suppression of removal changes the local balance toward more accumulation of tissue. Similarly, lack of regular applied stress changes the balance toward loss of tissue. This concept motivates the use of weight-bearing exercises, for example, to help prevent osteoporosis.

As mentioned in the brief description above, Dalton has described our society as a culture of "flexion addicts," being sedentary compared with our ancestors and often staying in sitting positions that shorten our anterior torsos, lumbar spines, and hamstrings. While it is often our posture and lack of movement and use that drive us into dysfunction, the specific changes also are based on deeper physiologic properties of muscular fibers.

Professor Vladimir Janda, a Czechoslovakian physician and rehabilitation specialist, provided insight into common patterns of dysfunction with his classification of muscles as being postural or phasic. Postural muscles tend toward "slow-twitch" fibers that contract more slowly but also fatigue more slowly. Phasic muscles, containing more "fast-twitch" fibers, are designed to power more explosive movements. To simplify, it's

the distinction between sprinters and marathoners. The important difference for myofascial work, the key noted by Janda, is that postural muscles tend to shorten into dysfunction while phasic muscles tend to weaken. Postural muscles can become short and hypertonic (which does not necessarily imply stronger), while their phasic antagonists become inhibited and weak.<sup>20</sup> In order for the weakened phasic muscles to be effectively strengthened and reeducated, in order for a client to be able to move toward a better posture, chronically shortened and hypertonic postural muscles must first be normalized, a process that requires addressing both the muscle activity and the fascial restrictions (Box 9-3).

In particular, Janda pointed out two common patterns of myofascial dysfunction, the upper-crossed syndrome and lower-crossed syndrome.<sup>20,21</sup> In upper-crossed syndrome, the pectoralis major and minor, upper trapezius, levator scapulae, and sternocleidomastoid all tighten and shorten. Simultaneously, as described above, the lower and middle trapezius, serratus anterior, and rhomboids all weaken. The result is a posture with shoulders and head forward and a compensatory shortened posterior neck, as shown in the left half of Figure 9-3. In lower-crossed syndrome, the iliopsoas, rectus femoris, tensor fasciae latae, short adductors of the hip, and the erector spinae group of the trunk all tighten and shorten. At the same time, the abdominal and gluteal muscles weaken. The typical result is the posture with an anterior pelvic tilt and an accentuated **lordosis** (i.e., anterior curve) of the lumbar spine as shown in the right half of Figure 9-3 (see Case History 1).

Generally, little can be done to strengthen and improve the usage patterns of the weakened muscles before the shortened muscles and associated fascia are normalized. **Sherrington's law of reciprocal innervation/inhibition** states that the antagonist to an activated muscle will be inhibited.<sup>7,20</sup> According to this, the normal tonus of the weakened phasic muscles is due not only to lack of use but also to this neurologic inhibition from the tightened side. In addition, fascia that surrounds muscle compartments or is in broad superficial sheets has a tendency to shorten in areas of stress, causing problems in mobility and joint function. It is incredibly strong and relatively resistant to lengthening, so when postural patterns, injury, or other issues shorten fascia, techniques to release this shortening are required. These techniques are more anatomically specific and more directional dependent than those needed for general massage work.

**BOX 9-3 Postural and Phasic Muscles**

As practitioners move from more relaxation-oriented work into more clinical work, the techniques used are the simpler part of the learning. More difficulty lies in gaining mastery of organizing a plan of exploration and treatment to meet a particular client's needs. The choice of techniques should flow from the needs of the work rather than the work being framed to practice the last learned set of techniques. But there's the catch, How do we understand what needs to be done for the client who stands before us?

Vladimir Janda's concept of postural and phasic muscles is one of several biomechanical models discussed by Chaitow and DeLany\* that provide insights for working with three-dimensional dysfunctions. Postural muscles are composed of "slow-twitch" fibers. These fibers contain more mitochondria for ongoing energy production, fatigue slowly, and are mainly involved in lower-force actions needed for stabilization and maintaining posture. Postural muscles tend to shorten into dysfunction and include the gastrocnemius, soleus, hamstrings, short adductors of the thigh, psoas, piriformis, tensor fascia lata, quadratus lumborum, erector spinae, latissimus dorsi, upper trapezius, sternocleido mastoid, levator scapulae, pectoralis major, and the flexors of the arm.<sup>†</sup> To a large extent, these distinctions should be taken to be comparative relationships between muscles rather than absolute properties, many muscles having dual functions for maintaining posture and the also an ability to power rapid motion.

In contrast, phasic muscles contain more "fast twitch" fibers, needed for bursts of activity. Such fibers depend largely on the more immediate energy sources of creatine and glycolysis and fatigue relatively quickly. Phasic muscles tend to weaken in dysfunction. Phasic muscles also tend to be neurologically inhibited by hypertonic postural antagonists.

While it would be expected that shortened, hypertonic muscles would become fibrous, it might appear that weakened, stretched muscles would not be. For example, we would expect a shortened hamstring to be fibrous, but what about long and weak rhomboids? Muscles that tend to weaken, such as the

rhomboids, can still be under stress. Davis's Law tells us that tissue is laid down along lines of stress without requiring the tissue to be the source of the stress. Thus, after we normalize the shortened, hypertonic muscles, it is often the case that both shortened and weakened muscles will need to be treated for fibrosity and adhesions. Rhomboids can be stretched tight (rather than contracted tight), fibrous, painful, and long, because they are losing the battle with the more important flexors in the anterior body.

We can add to this consideration by looking at additional models of dysfunction discussed by Chaitow and DeLany.\* These include Robert Ward's biomechanical model of "tightness" and "looseness" and Karel Lewit's "loose-tight" thinking. Quoting from Ward, "Tightness suggests tethering, while looseness suggests joint and/or soft tissue laxity, with or without neural 'inhibition'. These barriers (tight and loose) can also be seen to refer to the obstacles which are sought in preparation for direct (toward bind, tightness) and indirect (towards ease, looseness) techniques." Lewit notes that pain is often experienced on the "loose" side.<sup>‡</sup> Chaitow and DeLany\* then bring the concepts together with a comment on "pain and the tight-loose concept." "Pain is more commonly associated with tight and bound/tethered structures, which may be due to local overuse/misuse/abuse factors, scar tissue, reflexively induced influences or centrally mediated neural control. When a tight tissue is then asked to either fully contract or fully lengthen, pain is often experienced." Paradoxically, as pointed out by Lewit above, pain is also often noted in the "loose" rather than the "tight" areas of the body, which may involve **hypermobility** and **ligamentous laxity** at the "loose" joint or site. In cases with hypermobility, muscle hypertonicity and tissue restrictions may be a protective response to increase stability. When this is the situation, freeing dysfunctional restrictions will need to be done within a context of strengthening exercises to replace the needed stability. A cohesive treatment plan clearly requires looking at interrelations between muscles.

\* Chaitow L, DeLany JW: *Clinical application of neuromuscular techniques: the upper body*, Edinburgh, 2000, Churchill Livingstone.

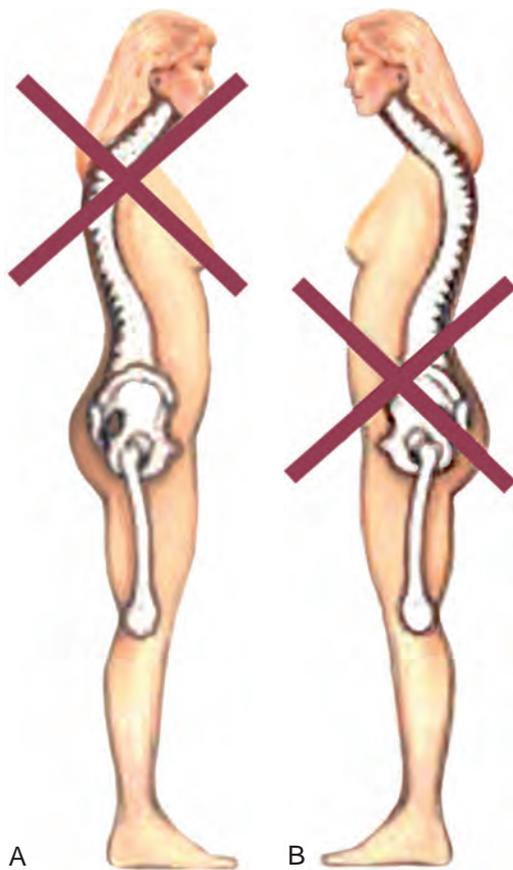
<sup>†</sup> Chaitow L: *Muscle energy techniques*, New York, 1996, Churchill Livingstone.

<sup>‡</sup> Lewit K: *Manipulative therapy in rehabilitation of the locomotor system*, ed 2, London, 1991, Butterworth-Heinemann.

**DEFINING MYOFASCIAL RELEASE**

Because the term myofascial release, literally "release of muscles and fascia," is so encompassing and because the roots and application of MFR are so diverse, we encounter a problem of definition and differentiation of the work. Cantu and Grodin take a useful approach in differentiating joint mobilization from myofascial work.<sup>2</sup> They note that joint work strictly follows arthrokinetic rules based on joint structure.

In contrast, myofascial work is less predictable and can occur along different lines and planes that have little to do with the direction of actual joint motion. While myofascial work needs to retain a basis of analysis of the symptoms and their potential sources, its more unpredictable nature requires an ability to sense and respond to the tissue itself. This ability comes not from analysis but from experience and awareness—in short, putting the miles of touch into your hands.



**FIGURE 9-3** Upper and lower crossed syndromes. Lines (A) are lines of shortening. Lines (B) are lines of weakening. (Used with the permission of Erik Dalton.)

This aptitude, while often considered to be “intuitive,” more scientifically draws on the amazing pattern-matching abilities of the human brain (see Box 9-2). Greenman<sup>7</sup> and Chaitow<sup>22</sup> both provide exercises for improving and refining palpation skills.

For our purposes, myofascial release will also be restricted within the bounds of hands-on manual therapy. Thus we eliminate from our concern surgical procedures such as a lateral release of the knee. This procedure is frequently recommended by orthopedists to free fascial restrictions around the iliotibial band and knee retinaculum that cause knee pain due to the patella tracking too laterally. While technically a “myofascial release,” it lies beyond our domain of practice.

There are several forms of myofascial release that are entirely applicable for our purposes. The following section of the chapter will explain some of the major techniques according to the actual manual skills that are applied; a later section will speak to the effectiveness of some of these techniques in paradigms of larger

goals such as treatment of injuries, “structural integration” or body alignment, improvement of performance in athletics or dance, or other areas such as the psychological realm. Although there can be great overlap, myofascial release can be practiced anywhere along a continuum from very gentle indirect release to considerably more pressure applied in direct procedures.

### INDIRECT RELEASE TECHNIQUE

This philosophy proposes an inherent ability of the body to “self-correct” and applies unwinding techniques that tend to follow in the direction that fascia seems to move when gentle pressure is applied. This natural tendency toward tissue homeostasis is referred to as the **inherent force**. The tissue is stretched and the therapist applies slow, steady pressure in the direction that the fascia can be felt to allow greatest ease of movement. The therapist may hold the tissue at the end range of stretch for up to several minutes until the tissue appears to reconfigure itself, allowing greater range of movement or movement in a new direction. Although he certainly teaches more direct methods, Barnes orients much of his teaching around such indirect methods.

### DIRECT RELEASE TECHNIQUE

Proponents of this approach, also often referred to as deep tissue work, practice a more aggressive manipulation of fascia, often applied in opposition to the direction that the fascia may freely allow movement. They establish where the fascia is short and lengthen it in opposition to this shortness. Folklore often describes the more direct approach as painful, but such painfulness results more from a too immediately deep or too impatient use of pressure than from a necessity of the direct technique itself. Although some discomfort may be experienced, the amount of pressure can be relatively gentle and its application slow and at an oblique angle. The primary distinction between the direct and indirect techniques is that direct release uses less unwinding and “following” of release tendencies and more directly encourages the fascia to release in a direction the practitioner feels will improve function or posture.

### COMBINED DIRECT AND INDIRECT TECHNIQUES

There unfortunately has been some history of a polarization between respective practitioners of the direct and indirect methods. At times, this has led to strident

criticism of the opposing view, with each side convinced that it possessed “the answer.” From the authors’ mutual perspective, the reality is that different people respond better to different approaches. Clients with very sensitive central nervous systems or particularly low pain thresholds may feel disoriented or overwhelmed by too much direct input. In contrast, more muscular and physically active clients often prefer the aggressiveness of more direct methods, said techniques being in fact substantially less invasive than their own training regimens.

Often direct-release techniques will offer immediate change at a faster pace, so clients experience more noticeable benefits in a shorter period of time. In contrast, some people release more quickly if allowed to follow their own patterns. If too much pressure is applied and the work is overly intense or painful, the tissue will resist and less will be accomplished. Additionally, for some already near their adaptive limits of fatigued or stress, too aggressive sensory input or too much microtissue damage might provoke an immune response resulting in subsequent malaise, aches, or cognitive fog. Many therapists thus find advantage in alternating between methods depending upon the individual needs of their clients or the amount of restriction in a specific area. For efficient use of time, it is sometimes advisable to first attempt direct methods to see if they will work easily and quickly, but to move to slower, more indirect methods if these initial attempts are not satisfactory or if client is uncomfortable.

## COMPRESSION WITH MOVEMENT

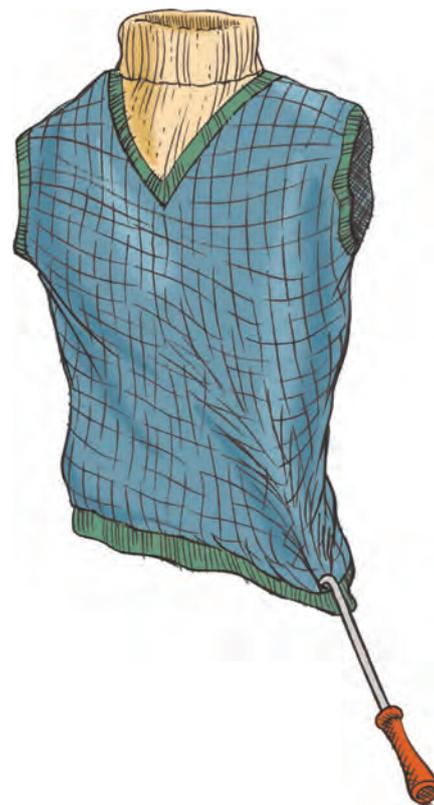
The basic concept of compression with movement is well-captured by the generic name “pin and stretch.” The distinctions among what is used and taught by various practitioners involve whether the movement is active or passive, and the direction and speed in which the compression is applied. Oblique pressure with active movement has been a fundamental technique of structural integration from its inception with Rolf. Over 50 years ago, Rolf instructed her students to “put the tissue where it belongs and ask for movement.” Sports massage practitioner and instructor Benny Vaughn has taught active movement with compression as “compression with active engagement”<sup>§§</sup> Whitney Lowe uses “compression with active movement.” British sports massage practitioners, such as Mel Cash and Stuart Taws, call it “soft tissue release,” or STR. Michael Leahy has developed and marketed, particularly to the

<sup>§§</sup>From notes from a class Benny Vaughn taught at Heartwood Institute, Garberville CA in October 1998.

medical and physical therapy communities, codified application protocols for the technique as “Active Release Technique<sup>®</sup>” or ART.<sup>§§</sup> Leahy’s training is extensive and offers many excellent protocols for treatment of specific injuries or areas of the body. Before discussing application, however, let’s backtrack for a moment to look at the anatomical basis for the technique.

When movement occurs, muscles, tendons, fascia, and nerves also have to move. Some of this movement will occur relative to other fiber bundles in the same muscle, some across other tissue structures. If layers of tissue that need movement across each other are adhered to each other, movement will be restricted, as symbolized in the “fascial sweater” of Figure 9-4. If tissues within a muscles structure can’t freely elongate, movement will be restricted. If, as a muscle shortens, fibers can

<sup>§§</sup>See Greenman’s use of the acronym ART for “Asymmetry, Range of motion, and tissue Texture.” Craig Liebenson has used “Active Muscular Relaxation Techniques” or AMRT to describe techniques based on postisometric relaxation and reciprocal inhibition.



**FIGURE 9-4** The fascial sweater, showing how a fascial restriction in one area will strain areas away from the restriction. (Reprinted from Rolf I: *Rolfing: the integration of human structures* with permission of the Rolf Institute of Structural Integration © 1977.)

broaden and separate laterally from each other (i.e., they are cross-linked together), movement will be restricted. If nerve tissue elongation is adhered to or impeded by other tissue, the nerve tissue will either suffer **impingement** (compression against an underlying structure) or **adverse neural tension** (dysfunctional stretching). So how does compression with movement help?

As a muscle lengthens, it has movement along its length (longitudinal) between its own fibers and also relative to other tissue structures. Compression along the muscle as it is lengthened (actively or passively) localizes the stretch. Pressure applied longitudinally against the lengthening locally increases the stretch within the muscle tissue. Pressure applied longitudinally with the elongation increases the **shear stress** on any adhesion, binding the lengthening muscle to adjacent structures. Conversely, when a muscle shortens, it is also forced to broaden. A direct or cross-fiber compression applied to a broadening muscle will flatten it, forcing fibers to spread transversely apart (think of pressing on a bundle of uncooked spaghetti), breaking adhesions between fibers. The compression, properly directed, thus assists the tissue movement required, allowing the tissue to free itself from adhesions. It is this latter property of self-tendency that also tends to make compression with active movements more effective than passive movements.

With these techniques, the therapist anchors restricted fascial or muscular areas, with the knuckles, fist, forearm, elbow, or braced fingers, while having the client move an adjacent joint so that the muscle, tendon, or fascia is slowly stretched from the anchor point. This focuses the stretch at a precise point rather than having the stretch dissipated over the entire length of the muscle. Muscle tightness is rarely equally distributed over the entire length of a muscle, so focused anchoring eliminates the tendency of the more flexible areas of the muscle adapting to stretch while allowing tight and fibrous areas to remain short. The practitioner uses palpation and visual observation to evaluate adhesions restricting movement and anomalous tissue texture. Abnormal tissues are treated by combining precisely directed tension with very specific active or passive movements.

Finally, the addition of active client movements adds the elements of neuromuscular reeducation, neurologic reinforcement of techniques, and making the practitioner-client teamwork stronger and more explicit. For example, Lewit noted that using eye movements in the direction of release would produce

additional gains from postisometric relaxation.<sup>21</sup> This concept of subtle neurologic enhancement also finds support in the visualization approaches developed in ideokinesis.<sup>11-14</sup> Asking for active client movement may reveal aberrant movement patterns and fascial strain patterns not seen in static or neutral positioning, enabling the practitioner to “track” muscles and fascia into proper position and length. Active movement against gentle practitioner resistance can enable clients to relearn joint proprioception lost from disuse or injury. Techniques can be synchronized with respiration to gain added release from this core human cycle. Finally, having the client perform active movements is both a very explicit reinforcement of working together and a form of gaining client commitment.\*\*\*

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## ADJUNCT METHODS

The effectiveness of myofascial release can often be increased by folding in other, synergistic methods. Techniques commonly used as adjunct methods include trigger point/neuromuscular therapy, positional release/strain-counterstrain, and various forms of postisometric relaxation. Chaitow's integrated neuromuscular inhibition technique (INIT) is a case in point.<sup>23</sup> In INIT, Chaitow uses direct pressure, positional release, and muscle energy technique (MET) to effectively target dysfunctional soft tissues. From a trigger point perspective, the additional techniques ensure a more complete release of the involved tissues. From the perspective of myofascial release, reflex techniques such as positional release (i.e., positioning to take all stress off of the targeted muscle) and MET can be used to reduce muscle hypertonicity before addressing fascial adhesions. This avoids working against the client's muscular tension. In chronic cases, it may be advantageous to alternate between reflex and direct methods. Where an involved muscle is too painful for the direct isometric contraction of MET, isometric contraction of the antagonist will gain release via reciprocal inhibition (RI). Positional release can also be used in such cases.

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\*\*\* In his book *Influence: Science and Practice* Robert B. Cialdini devotes substantial discussion to the powerful behavioral aspects of commitment and consistency. While this material is beyond the scope of this chapter, it nevertheless provides a sociological basis for understanding how client involvement can increase treatment effectiveness.

## APPLICATION OF MYOFASCIAL RELEASE

### General Technique

In spite of the differences in definition of myofascial release, there are threads of intent, skill, and technique that remain consistent throughout the fabric of interpretation. The authors strongly feel that the subjective elements of a powerful yet nurturing touch is the key element in carrying out the goals of any deep fascial work. No matter how effective a particular modality may be, if the practitioner has a harsh or ineffective touch, the effectiveness of the work will be greatly compromised. For the core of myofascial technique, Michael Stanborough provides an excellent and concise description of application<sup>24</sup>:

- Land on the surface of the body with the appropriate “tool” (e.g., knuckles, or forearm).
- Sink into the soft tissue.
- Contact the first barrier/restricted layer.
- Put in a “line of tension.”
- Engage the fascia by taking up the slack in the tissue.
- Finally, move or drag the fascia across the surface while staying in touch with the underlying layers.
- Exit gracefully.

Figure 9-5 provides a visual representation of the goal of engaging a layer of fascia. Notice the white color of the tissue, demonstrating the lack of vascularization, and the wrinkled appearance of the fascia. The intention of the stroke would be to “iron” out the wrinkles and lengthen the sheet. It also is obvious that simply kneading the fascia would have little effect on such smoothing and lengthening. The key to successful work is in engaging the fascia and “ironing” it with longitudinal intention.



**FIGURE 9-5** Pressure applied to fascia with braced fingertips. (Used with the permission of Robert Schleip.)

Probably the most obvious difference that clients first notice between conventional massage and myofascial release techniques is that the therapist uses less or even no lubrication. Because the emphasis is upon lengthening fascia rather than kneading muscle tissue, it is necessary to “grab” the tissue rather than sliding over it. Just as it is difficult to open a tight jar lid or turn a doorknob with slippery wet hands, it is also difficult to grab and lengthen short fascia if using too much lubrication. As with the jar lid, much more effort is necessary to provide the necessary friction. Exerting such effort by pressing too hard on tissue can easily translate to discomfort or pain for the client and fatigue or risk of injury for the practitioner.

From the experience of our classes, the authors feel that one of the most important skills to teach students is that of sinking through tissue to reach the level of fascial restriction, rather than beginning work at layers that don’t need work. Many new therapists spend unnecessary time warming up outer layers with superfluous or ineffective work. Others create pain by beginning intense work as soon as they contact the body. A good rule is “*sink ... and then work,*” with the sinking occurring as the body responds to applied pressure and intent rather than being forced or hurried by the practitioner.

After sinking to the first fascial barrier, the therapist chooses the proper tool (fingers, knuckles, fist, forearm, elbow) depending upon the precision and power needed to address the fascia and the space of the location on the client’s body. The novice practitioner will benefit from realizing that skill in such palpatory exploration comes as a result of practice with awareness. In time, it becomes an unconscious process (see Box 9-2), but in the beginning the practitioner must consciously feel for differences in tissue direction, texture, tension, and temperature. Similarly, while choice of the body surface used to apply pressure is later automatic, in the beginning the novice must consider which area needs application, the size of their own body “instruments,” pressure required, and the relative wear and tear on their own body. Using direct or indirect techniques, it is now necessary to clarify the goals of working with the fascia. Do you want to lengthen fascial sheets in the direct line of muscle pull, apply force diagonally to correct torsion forces, or separate fascial compartments? On a deeper level, it may be necessary to sink through superficial tissue with direct downward pressure before encountering the layer needing work. After sinking, force is then applied in a more oblique stretching direction, using either direct or indirect intention.

Often, myofascial work goes beyond addressing individual layers of shortened fascia. Different muscle compartments or fascial layers or envelopes may have adhered to each other. Precise work with fingers or knuckles may be appropriate to separate these layers or envelopes for the muscles to properly slide by each other and allow free movement.

Although they are very different tissues, muscle and fascia are inextricably linked. The therapist is always working with both of these tissues with varying emphasis. By the same token, a massage practitioner can be working with fascia while doing relaxation massage and a myofascial specialist can be relaxing the contractile elements of muscles pursuant to releasing fascial restrictions.

Next to the minimal use of lubricants, the speed of strokes is one of the most noticeable differences between massage and myofascial release work. Fascia releases in two stages, each stage completing much more slowly than it takes for contractile muscle tissue to release. The first release or “melt” is from the elastin and the collagen crimp, which allow the fascia to lengthen along with normal muscle lengthening. After this initial release, the therapist waits for the more stubborn collagen and ground substances to reconfigure to gain the more permanent viscous lengthening and smoothing of texture. Clients often describe a slight burning feeling during this release but also comment on the lasting effect of the work. They describe the sensations as “feeling like their muscles are clay that is being molded.” Clients immediately notice that the work is performed much more slowly. Some therapists, after taking up the slack by stretching the fascia to its end range, wait for 4 or 5 minutes while holding tension for the second release or for a feeling of heat to indicate that the fascia is stabilizing into a lengthened position.

A brief description with photographs may prove helpful in understanding some of the different approaches to performing myofascial release work. We turn now to a series of applied variations of the core technique just described.

## **Skin Rolling**

Starting our specific applications with the most superficial, we turn first to skin rolling. It is motivated by the observation of adhesions between the skin and the layers of fascia immediately beneath the skin or between superficial and deeper layers of fascia. At times, the pull of such adhesions will be observed as a “puckering” of the skin. The first work at releasing these adhesions

often produces a strong burning sensation. Once the adhesions are cleared, further work at this superficial level is generally free of adverse sensations.

To implement skin-rolling, the practitioner grabs a “roll” of skin and subcutaneous fascia between his/her fingers and thumb and rolls this skin or scar tissue while lifting it away from the body. Over the years of the authors’ clinical experience numerous clients have extolled the virtues of skin rolling after having previously tried virtually every other form of bodywork to help with pain in such areas as the elbows, knees, shoulders, and, especially, the sacrum and low back. While skin-rolling is generally a very limited part of myofascial methods, it can provide substantial relief where indicated. Lewit describes skin stretching to take up the slack and engage a hyperalgesic zone (HAZ), which may be a cause of pain and is notable for lacking a springy resistance at the end-position of the stretch.<sup>21</sup> The stretch is gently held until resistance weakens and normal springing is restored. This variant extends the concept of skin-rolling into small areas in which it is difficult to “roll” the skin.

To release the fascial restrictions causing strain around a joint, the practitioner needs to go deep enough to grab the subcutaneous fascia along with the epidermis. If one imagines the torsional (i.e., twisting) strain upon a joint, especially around the sacral area, it seems quite logical that freeing “stuck” fascia in the area would allow for better movement and improvement of imbalance. Skin rolling is usually limited to specific painful areas rather than applied as a broad integration technique. It can be very intense or even painful on the initial session and certainly does not lend itself to a long bodywork session. Its effectiveness is also limited to working with superficial fascial restrictions rather than with deep fascial restraints between muscle compartments or in the viscera.

## **MFR Direct Technique**

In these examples the therapist may use forearms, palms of the hands, or any broad surface. Remember that it is important to expedite the stretch to the fascia by either using body positioning to elongate the myofascial component (place the tissue in enough stretch to elongate the muscles without so much tension that it is difficult to penetrate to the proper level) or by anchoring with the other hand to localize the stretch to the specific area needing lengthening. This is demonstrated in Figure 9-6 by the stretch placed on the iliotibial band with the left hand while the fascia is stretched away from the anchor with the right forearm.



**FIGURE 9-6** Working the ITB on a stretch.

### Separation of Compartments

These techniques are very useful in working with many areas including the pectoralis major, the small muscles in the forearm, the trapezius, and anywhere different muscles overlap. The lateral leg easily demonstrates this principle, working along the lateral border of the iliotibial band and the vastus lateralis, as shown in Figure 9-7, or separating the hamstring compartment from more anterior or lateral muscles. Pressure should be applied with relatively sharp or precise tools such as fingers or knuckles, slowly moving up the border of the muscle or fascial compartment visualizing gently prying the compartments apart. Asking for active movement on the part of the client will expedite the process. As a second example, Figure 9-8 shows separating the pectoralis and deltoids by lifting the pectoralis with the fingers.

### Lifting or Rolling Muscle Compartments

These strokes depend upon bringing the muscle to the end range of easy movement and waiting to feel the release when the muscle rolls away from restrictions either adjacent to or deep to the muscle being



**FIGURE 9-7** Differentiating the iliotibial band.



**FIGURE 9-8** Separating the pectoralis and deltoid.

worked. Although it is handy for use with large muscles, such as the pectoralis major or gluteus maximus, this technique is most often used for long muscles such as the quadriceps, biceps, triceps, and calf muscles. Slowly lift the muscle away from the bone and roll it until resistance is felt, as shown for the gastrocnemius in Figure 9-9. Then wait for the muscle to slowly release in the direction of force. This technique is very useful to improve “tracking” of joints that are disrupted by torsion—forces that occur when muscles are not exerting their force in the proper line in relation to the joint. The sternocleidomastoid muscle needs to be free from adhesions to adjacent muscles in order to properly shorten and have a clear line of pull to turn the head. Lifting the muscle with fingers (or knuckles) and rolling or mobilizing with shearing force is demonstrated in Figure 9-10.



**FIGURE 9-9** Lifting and rolling the gastrocnemius with the fingers.



**FIGURE 9-11** Working the quadratus lumborum on a stretch, leg off the table and slightly posterior.



**FIGURE 9-10** Lifting and rolling the sternocleidomastoid to free adhesions.



**FIGURE 9-12** Working the quadriceps on a stretch in the position of a Modified Thomas Test.

### Placing Muscles into Stretched Position

As long as the muscles are not placed in so much stretch that they are hard to penetrate or the stretch receptors are innervated causing the muscle to contract, the therapist will have the advantage of beginning work at the end range of fascial stretch instead of exerting effort to take up the slack. Additionally, the release that occurs at the end range of the relaxed stretch provides valuable neurologic input to the stretch receptors, helping to reprogram a “learned” dysfunction of shortness. In Figure 9-11 the quadratus lumborum is released by extending the leg down and posterior while securing the lower rib cage.

The position creates a stretch, while an open fist is used to directly work the tissue. A similar gravity-assisted position is also used to release the quadriceps in Figure 9-12. The client positioning is identical

to that for a Modified Thomas Test, with the client securing the contralateral (i.e., opposite) leg in hip flexion to stabilize the pelvis and low back (i.e., to prevent the pelvis from tilting anteriorly). The practitioner’s free hand secures the worked leg above the knee to augment the stretch from gravity. The hip extension stretches both the rectus femoris and the iliopsoas. Having the knee flexed on the leg being worked increases the stretch on the rectus femoris relative to that on the iliopsoas, the rectus femoris crossing both the hip and knee joints (i.e., being a two-joint muscle).

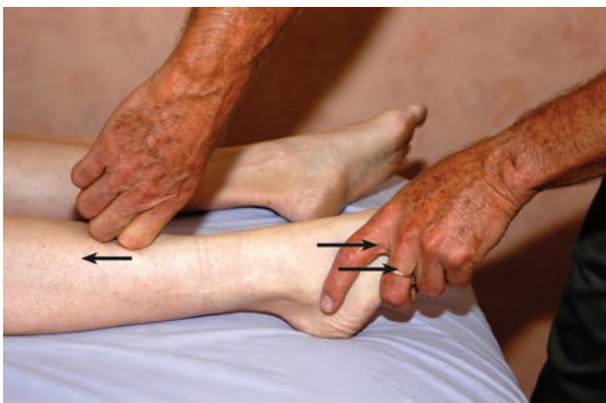
### Anchor and Stretch Strokes

This is the first of two examples of applications of compression with movement. With the anchor (or pin) and stretch strategy, the force of the movement or stretch is localized at specific areas of thickening or adhesions. Rather than attempting to place the entire

muscle in a stretch, the therapist relaxes (shortens) the muscle by flexing the joint, anchors on the area that is fibrotic, and then extends the joint so that the stretch is focused at a precise point where the force is applied. It is crucial that the therapist anchor the point rather than sliding over in a conventional massage manner. Figure 9-13 demonstrates use of the anchor and stretch technique on the anterior compartment of the leg to anchor at a localized source of fascial restriction while stretching the tibialis anterior in the opposite direction.

### Expedited Lengthening Strokes

Another variant of the application of compression with movement is expedited lengthening. This variant is particularly helpful in teaching clients to work with tracking issues and movement patterns. As with anchor and stretch strokes, the muscle is placed in a relaxed or shortened position. Instead of stretching the muscle against resistance, however, the therapist works in the direction of muscle lengthening and guides the myofascial compartment to efficiently lengthen in the most expedient direction for the joint. In Figure 9-14 the therapist's pressure and direction create a proximal-to-distal stretch of the quadriceps. This positioning can be further enhanced by dropping the leg off the side of the table, allowing the knee to flex to create an additional stretch on the quadriceps. The client can be instructed to lower the leg slowly, timing the movement to synchronize with the work being done. Compare with the Modified Thomas Test position in Figure 9-12. Note that the stretch is directed distally in the example. Many therapists have been



**FIGURE 9-13** The knuckles anchor the anterior compartment, which is then stretched by plantar flexing the ankle.



**FIGURE 9-14** The therapist's pressure and direction create a proximal to distal stretch of the quadriceps.

instructed that *all* strokes should be directed in the direction of venous blood flow back to the heart. The authors feel that this edict is greatly overemphasized in early massage training, precluding many benefits of directing strokes in different directions as tissue indicates. In Figure 9-14 the distal direction of the stroke has the advantage of decompressing the hip joint and lengthening the quadriceps against the usual direction of shortening. The pressure is oblique: thus the amount of pressure applied depends on the angle of application, the pressure required to reach the desired layer of tissue, and the rate at which the client's tissue allows forward movement without inducing self-protective resistance.

### BENEFITS OF APPLICATION

The major benefits of myofascial release are increased freedom and ease of movement and freedom or reduction of pain associated with tissue restrictions. For many people, freeing postural or holding patterns in the body will bring feelings of physical well-being. Changing restricted postural patterns may also free emotional holding patterns, allowing clients to better experience their feelings. For those involved in coordinated movement activities, such as athletics and dance, myofascial release will improve functional use of the body. Facilitating athletic endeavors underscores that therapeutic bodywork need not always be performed to help solve clinical problems or conditions. Much benefit can be achieved in working to improve and maintain bodies that are already functioning well. Particularly with such athletes, who are used to pushing their physical

boundaries and limitations, the practitioner may find the MFR direct technique/deep tissue massage to be straightforward. Because of their psychological conditioning, athletes will, more often than the general public, be able to relax into relatively intense deep tissue work.

Conditions and injuries responding well to myofascial release include:

- Adhesions and scar tissue from sprains, strains, surgical procedures, minor injuries, overuse, and chronic postural strain.
- Fibromyalgia and myofascial pain syndrome<sup>†††</sup>
- Myofasciitis—particularly plantar fasciitis
- Tendinosis or tenosynovitis—either by working on the inflamed area or tight muscles that cause strain on the tendon
- Low back pain
- Neck pain
- Osteoarthritis

In 2004 *Consumer Reports* conducted a survey involving 34,000 of its readers to determine the benefits that different alternative care modalities (chiropractic, physical therapy, deep tissue massage, prescribed exercises, prescription medication, acupuncture, acupressure, and diet) provided for various conditions or complaints.<sup>25</sup> For relieving back pain and neck pain, deep tissue massage was virtually tied with chiropractic for those respondents who felt “much better,” and deep tissue work led with those that reported that they felt “somewhat” better. For fibromyalgia and osteoarthritis, deep tissue massage provided the greatest extent of relief for both “significant” and “somewhat better” improvements. Physical therapy and exercise were also rated highly. In general, for the conditions mentioned above, both the “significant” and “somewhat better” categories for massage ranged from 35 percent to 45 percent of respondents with combined levels averaging around 80 percent.<sup>26</sup> The Cochrane Review of massage for low back pain also reported evidence for effectiveness.<sup>27</sup> While the review concluded that acupressure massage was more effective than Swedish massage, this is as likely due to

<sup>†††</sup>The practitioner should start conservatively with shorter sessions and less intense pressure, planning progressions based upon client response, over multiple sessions. The response of clients with fibromyalgia can be highly individual. There is wide variation in response to these conditions, with some individuals reporting considerable improvement, while others experience increased symptoms.

the specificity of the work and the tissue addressed as to particular style.

## CONTRAINDICATIONS

The adage “One man’s medicine is another man’s poison” certainly applies to the contraindications of myofascial release. Any technique that is powerful enough to create significant benefits has the potential to create problems. However, because MFR can be performed with varying levels of pressure and with varying amounts of directness, it is highly adaptable to many client limitations. Some conditions, such as rheumatoid arthritis, are often listed as contraindications because clients may have a significant increase of symptoms if work is performed too vigorously. At the same time, such clients may report benefits from gentle or indirect myofascial work from the improvements in joint alignment and relaxation of myofascial components around the joints. Such changes may help or work with other lifestyle and nutritional changes. It is important to remember that, as therapists, we are working on more than just tissue and that any individual may have other contributing factors to dysfunction such as lifestyle, emotions, diet, and genetic/congenital factors.

The best course of action is to openly discuss the procedures with your clients and receive medical clearance before working on any of the following conditions. Remember that there is a difference between a contraindication and a precaution. Always err on the side of caution, but remember that many people find that myofascial release offers them relief when other treatments have failed.

The following list contains situations listed as either contraindications or requiring great care and experience in treatment. Some are contraindication only for a limited local area of the body rather than general contraindications precluding any treatment.

- Acute inflammation.
- Client use of anticoagulant medications (medical consent, medication increases susceptibility to bruising). Pressure and depth should start conservatively and the client should be monitored/queried for bruising. The practitioner is reminded that MFR is about intent toward specific tissue not about blatant pressure. MFR can be adapted as needed to facilitate the client.

- Cellulitis (immediate medical referral). Cellulitis is a potentially serious bacterial infection of the skin. Cellulitis appears as a swollen, red area of skin that feels hot and tender, and it may spread rapidly. Left untreated, the spreading bacterial infection may rapidly turn into a life-threatening condition, particularly in consideration of recent strains of antibiotic resistant bacteria (e.g., methicillin-resistant *Staphylococcus aureus* [MRSA]). This would be a general contraindication until the condition is medically controlled and cleared.
- Deep vein thrombosis. Obtain medical consent. Refer immediately with unexplained pain or edema of unknown cause in legs.
- Fractures of bones (local).
- Heart attack symptoms. **Immediately assist client in accessing emergency medical care.**
- Hematoma (local).
- History of an aneurism (medical consent).
- History of arterial dissection (medical consent).
- Hypermobility of joints (local).
- Malignancy (local, medical consent).
- Osteomyelitis (infection).
- Osteoporosis, especially in ribs and vertebrae (cautionary).
- Rheumatoid arthritis (cautionary, medical consent).
- Severe edema (cautionary, medical consent). Treating lymphedema in general requires substantial training in lymphatic drainage technique and knowledge of pressure bandaging. MFR would only be appropriate in unaffected areas and when the cause of the edema is known and diagnosed (e.g., as a side effect of surgery or radiation treatment).
- Skin sensitivity (cautionary).
- Acute strain or sprain (local).
- Stroke indications (dizziness, unexplained sharp headache, visual distortions). **Immediately assist client in accessing emergency medical care.**
- Varicose veins (local). Varicose veins are veins that have become enlarged and twisted. The term commonly refers to the veins on the leg, although varicosities occur elsewhere. To avoid damage, avoid direct work through varicose veins. However, many people with varicose veins need not miss out on badly needed work to the muscles deep to the veins. Tissue below such veins can usually be accessed by coming in from the side.



#### IN MY EXPERIENCE: KEITH ERIC GRANT



It is rather astounding to me to look back and realize that I first signed up for a massage class over 27 years ago. At the time, I was a graduate student in physics, struggling to complete a thesis, and simply seeking to rebalance my life a bit. Little did I know when signing up for that first class how large a role massage

was going to play in my life. While I did complete that thesis and have continued with a physics career, I also continued to expand my knowledge and skills in massage, for, once invoked, massage would not let me go so easily. Eventually that led me to teaching massage, and that in turn has led me on to writing about massage.

As a runner, folk-dancer, and backpacker, I naturally gravitated to the forms of massage that would help me and those around me. At Scottish and Scandinavian dance camps, I have worked with minor injuries of overuse on both dancers and fiddlers, sometimes on an actual massage table on a “free” afternoon and sometimes at midnight on whatever

surface we could cobble together. Sometimes those I worked with were local talent, and sometimes they had been hand imported from Sweden or Norway as teachers or musicians. There is something both gratifying and deeply humbling about being able to help people function or keep functioning simply with one’s hands and a bit of knowledge of how our bodies work and move.

I have tried to appreciate those who taught me well by passing on what knowledge and skills I can to others. One learns in many ways by teaching, particularly in an area as interactive as massage. That also continues to be both a gratifying and humbling experience. This chapter is a continuation of that process of giving and receiving. Part of that has been the pleasure of working with my coauthor, Art Riggs, with the back-and-forth of thoughts and ideas. Ultimately, however, the true test of this chapter will be up to you, the reader. If it aids you in your search for usable knowledge and skills, then we have written well. While we are not there to teach you in person, we are there with you in spirit. May our words convey that hope.


**IN MY EXPERIENCE: ART RIGGS**


I could wax on about how experiencing bodywork that addressed fascial restrictions changed my life, first by providing the most beneficial therapeutic results I had ever experienced, and next, led to a career change to a profession that provides rewards, both financial and emotional, that I never would have thought possible. I can

honestly say that I cannot imagine any profession that would make me happier for its combination of excellent income, satisfaction for the appreciation that my interesting clients express, and the always interesting puzzles that the miraculous human body presents.

However, after teaching deep tissue massage and myofascial release for 20 years, I must say that the most appropriate subject for this chapter would be the gratification I receive from seeing some students make the paradigm shift to working with myofascial restrictions as either an adjunct to their present massage practice or as a specialty.

The phenomenal increase in popularity of massage is both a blessing and a curse for the aspiring bodyworker. As public awareness of the power of massage expands, the mushrooming field becomes increasingly competitive. Statistics indicate that 80% of all massage school graduates are out of the profession within two years—victims of burnout from working at massage mills, the inability to sustain a full private practice, and often, the lack of genuine enthusiasm for their work because of a stroke-oriented and cookie-cutter approach to bodywork instead of a fresh, problem-solving approach to each client.

In the field of massage, it is very difficult to distinguish one's self from the masses of competition as being "better." Yet, a large percentage of the students I encounter are shackled by a restrictive definition of massage that they received in their first massage trainings. They attempt to distinguish themselves from competitors who are all working with tissue in essentially the

same way. Instead of competing with the same "product," the successful therapist is well advised to distinguish himself or herself from the masses by being "different," offering more, and leaving a lasting impression on clients.

The reality is that even if a client comes for relaxation massage, most everyone has some complaint or desire for improvement. Many of these issues are a direct result of myofascial strain patterns, and practitioners who are able address these restrictions are often able to counter the common complaint by clients: "I felt good during the massage and possibly for a short time afterwards, but the results didn't last."

Since fascia permeates all levels of muscle, we all are influencing fascia when we work; it behooves all of us to work with this component with intelligence and intention. Working with myofascial restrictions in no way necessitates a large shift in your present practice and, since the skills are incrementally learned, acquisition of myofascial skills does not require a quantum leap in learning or in expensive training. Learning to work with fascia as part of any bodywork specialty, from general relaxation massage to specialized therapeutic work, can be the key to distinguishing yourself as a professional with exceptional skills.

As beneficial as myofascial release work has been for me in dealing with my personal issues and as much as I enjoy performing the work, both as a Rolfer and in general bodywork, I must say that the frequent feedback from students is one of my biggest gratifications.

One of the largest rewards of teaching this work is the frequent feedback from students who report a dramatic transformation of their entire practice when they altered their intention to stretching and releasing fascial restrictions. Long-time regular clients immediately comment on the lasting benefits and feelings of change in their bodies. Word of mouth referrals increase dramatically, and as practices evolve into solving problems, the work becomes more interesting and rewarding.

## TRAINING REQUIREMENTS

There is no single path to competence in this area of work. It is relatively obvious, however, that the student wishing to pursue such work needs to look toward gaining a functional knowledge of how the human body moves, skills of palpation, skills of assessment based on the former two skills, and the kinesthetic skills of applied pressure and neurologic facilitation to evoke change. The authors also are strongly in agreement that this is not a matter of all or nothing. The ability to work effectively is a repeating interactive process of learning, practicing, and gaining clinical experience. Whatever the gain from

training, it comes not from passive learning, but from the opportunity to actively observe how those with substantial experience organize information from multiple senses and translate that into effective benefit for clients.

In the authors' experience, many massage practitioners have expressed hesitancy or trepidation about moving their relaxation-based massage into a more therapeutic deep tissue practice working with fascia. Some fear that the nurturing aspects that their clients love will be lost and that regular clients will not be happy to have their relationship altered away from the massage they are accustomed to. In reality,