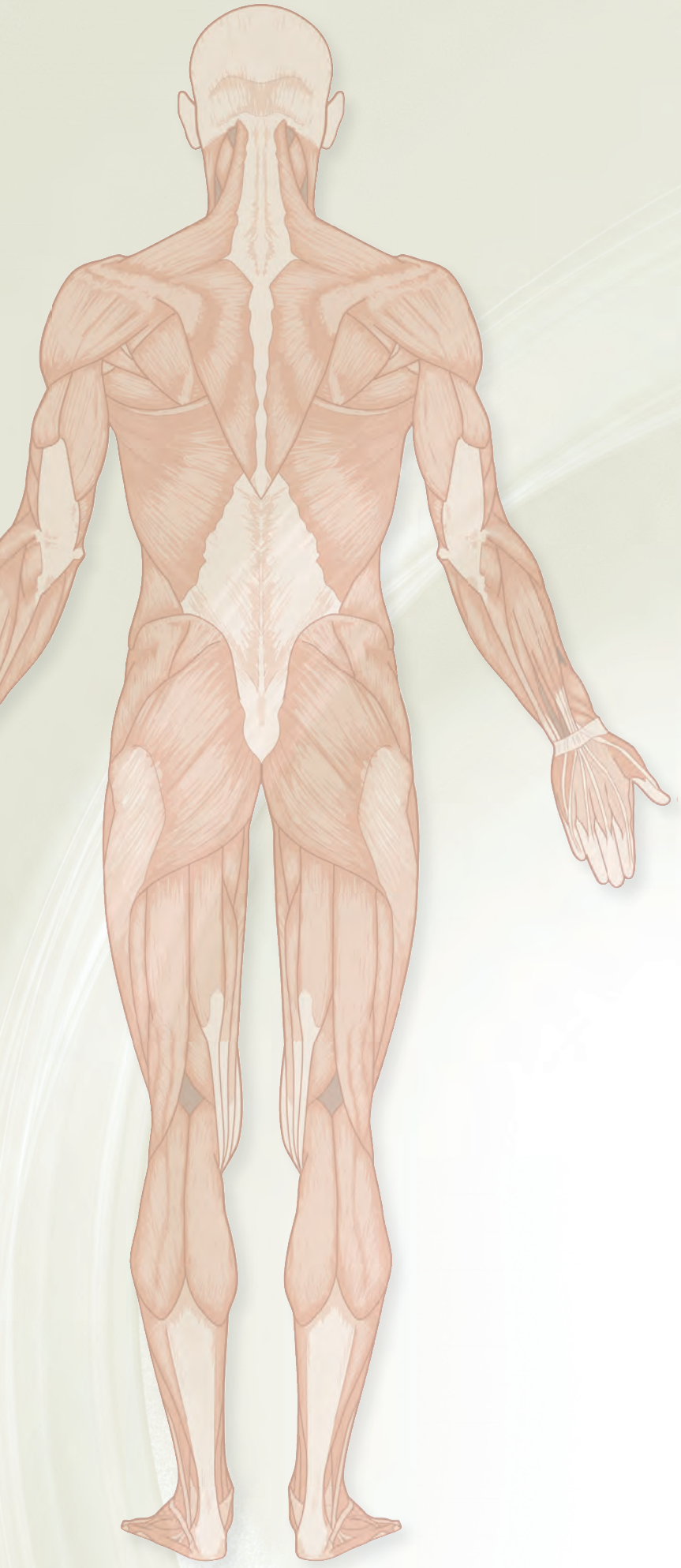
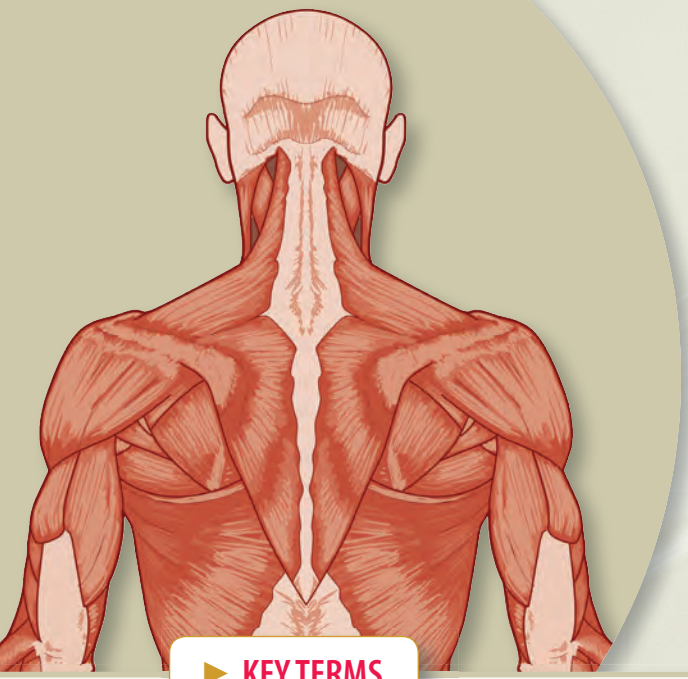


PART I

Neuromuscular Therapy Basics



INTRODUCTION TO NEUROMUSCULAR THERAPY 1

▶ KEY TERMS

Acute: of recent onset

Chronic: of long standing

Concentric strain: a condition in which a muscle is chronically shortened because of overuse or postural dysfunction; its opposing muscle will most likely be eccentrically strained, or overstretched

Etiology: the cause of disease

Hypertonicity: excess muscular tonus

Ischemia: local and temporary deficiency of blood supply

Noxious: harmful or painful

Postural and biomechanical dysfunction: abnormal function of the body because of poor posture and poor biomechanics

Range of motion: the amount of movement of a joint

Trigger point: an area of hypersensitivity that when compressed creates referral sensation at a distance from that area

Trigger point referral: the sensation felt at a distance from a trigger point

Neuromuscular therapy is a comprehensive and advanced system of soft tissue manipulation that specializes in working with chronic myofascial pain and pain syndromes. On the basis of neurological laws, this therapy works toward bringing the body's central nervous system into homeostatic balance with the musculoskeletal system using various Swedish massage strokes, such as effleurage, pétrissage, and deep transverse friction, along with trigger point release.

Neuromuscular therapy techniques, along with a thorough structural evaluation, are needed to understand and treat the causative factors involved in ***acute,*** *or of rapid onset, and* ***chronic,*** *or long-lasting, myofascial pain and dysfunction. Specifically, neuromuscular therapy is used to deactivate trigger points in muscle, tendon, and ligaments. It is also used to lengthen chronically shortened muscles and balance muscle groups, especially when working with people suffering from postural dysfunction or distortion, such as internal rotation of a shoulder girdle or scoliosis.*

Thus, being trained in this therapy will allow a massage therapist to specialize in working with chronic myofascial pain and pain syndromes and take an active role in helping people overcome injuries and postural dysfunction. If we can balance each area of the body, we can help people change their posture and gait. This work may also be used to enhance the function of joints, muscles, and general biomechanics of the body while speeding healing by the facilitation of release of endorphins, the body's natural painkillers.

Neuromuscular therapy has many broad applications in today's health care setting. It is used to treat people who suffer from acute or chronic pain stemming from various injuries, such as those related to the following:

- *Sports injuries, such as strains and sprains*
- *Automobile injuries, such as whiplash*
- *Repetitive strain injuries, such as epicondylitis, carpal tunnel syndrome, etc.*
- *Accumulative trauma injuries, such as temporomandibular joint dysfunction*
- *Skeletal problems, such as spinal disc herniation*

There are, of course, many more uses for this technique. There are only a few contraindications, however. The most common

include large bruises, phlebitis, varicose veins, open wounds, and skin infections.

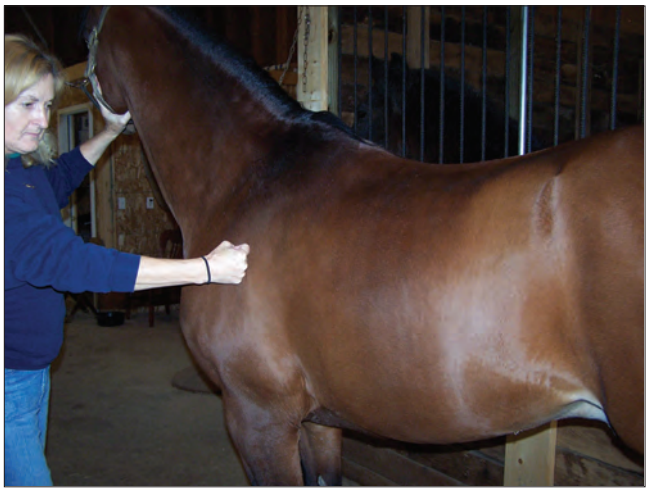
In addition to massage therapists, many other health care professionals use neuromuscular therapy today. These include chiropractors, physiatrists, nurses, physical therapists, occupational therapists, osteopaths, and dentists.

The purpose of this chapter is to introduce you to neuromuscular therapy and provide you with foundational information you will need to become an effective practitioner of this modality. Specifically, we will consider how neuromuscular therapy works, what the key components of a session are, a brief history of the modality, goals and therapeutic intent, knowledge and tools required, and how to effectively relate to clients.

HOW IT WORKS

In neuromuscular therapy, therapists first assess the body's soft tissues to locate chronically shortened muscles and trigger points, using effleurage, pétrissage, and friction. Once the areas in question are identified, more specific techniques are used.

Lengthening techniques such as myofascial release, deep effleurage, muscle stripping, and passive stretching are performed to help break the **concentric strain,** or chronically, pathologically shortened muscles. A concentric contraction occurs in a muscle when both ends of the muscle are brought closer together, shortening the muscle during the active phase of muscle contraction. Trigger point pressure or a pincer technique is used to deactivate the trigger points formed in the soft tissues (Fig. 1-1). Once a client is able, practitioners add active stretching to the treatment schedule. This helps the client to increase **range of motion,** or the amount of movement in any given joint, that has been compromised by pain and discomfort.



• **FIGURE 1-1** Horse receiving neuromuscular therapy. Even horses have trigger points that can be effectively deactivated using neuromuscular therapy.

By lengthening chronically shortened muscles, this therapy helps clients recover their range of motion. By deactivating trigger points, it relieves clients of the pain and other sensation brought about by the trigger points.

Not only does neuromuscular therapy treat pain and sensation that is local to trigger points, but it also treats pain that is "referred" to parts of the body distant from the actual site of the trigger point. This type of pain is known as **referred pain.**

Skeletal muscle makes up approximately 50% of the body's weight and can develop trigger points that produce sensations such as varying degrees of pain, itching, tickling, and thermal sensation (hot or cold). It is daily activity that causes the most wear and tear on the muscle tissue in our bodies. If the client is experiencing pain as the sensation of **referral from trigger points,** it could be extreme pain.

COMPONENTS OF THE TECHNIQUE

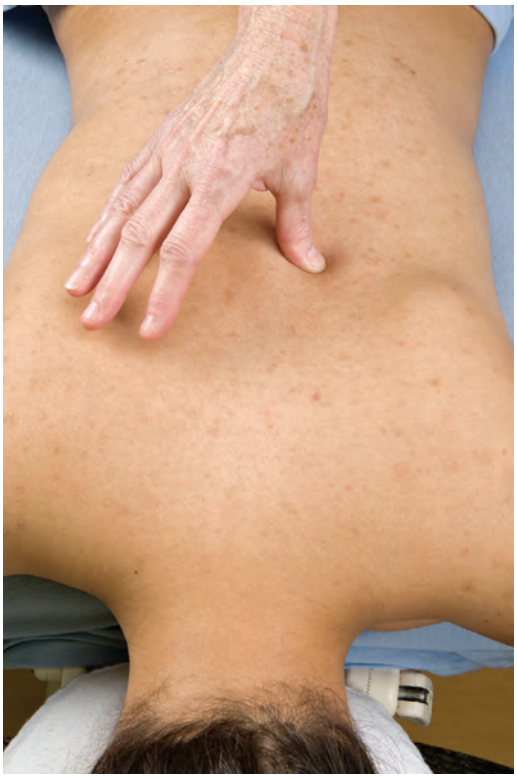
The technique approach in this text is an integration of several different approaches that produce optimum therapeutic impact when working with chronic myofascial pain. The following is the list of the components of this approach:

- Health history intake, evaluation, and assessment skills
- Soft tissue assessment and treatment
- Trigger point therapy (Fig. 1-2)
- Myofascial release and other lengthening techniques
- Passive stretches, muscle energy technique, and active stretching
- Postural stress analysis
- Identifying and reducing perpetuating factors
- Client management and follow-up

These components will be discussed in greater detail throughout the book.

HISTORY

There have been many people involved with the origins of neuromuscular therapy. Most agree that the first to discover and develop this technique was a European named Stanley Lief, who was trained in osteopathy and naturopathy. Lief established a famous natural healing resort, Champneys, in Hertfordshire, England, in 1925. Along with Boris Chaitow, his cousin, Lief studied with teachers such as Dewanchand Varma and Bernard MacFadden to become competent with the concepts of assessment and treatment of soft tissue dysfunction. Lief and Chaitow, also trained in osteopathy and naturopathy, began using these methods of assessment and soft tissue manipulation on the patients coming to the



• **FIGURE 1-2** Pressure to a trigger point.

healing resort. They spent the years between the late 1930s and early 1940s testing and developing these theories and techniques. The techniques they used then very closely resemble the techniques we use today. Lief's idea of neuromuscular therapy (called "neuromuscular techniques" in Europe) incorporated a holistic approach to healing by using nutrition, psychology, hydrotherapy, and soft tissue manipulation.[1] Lief's methods eventually became incorporated into the training system at the British College of Naturopathy and Osteopathy.

Since then, several other osteopaths and naturopaths, such as Peter Lief, Brian Youngs, Terry Moule, and Leon Chaitow, have further developed this work. Osteopaths and chiropractors have included the use of some of the techniques used with neuromuscular therapy to manipulate soft tissue. It has been this use of techniques that has helped to develop this work. Neuromuscular therapy is consequently now being taught in osteopathic and sports massage institutions in Great Britain.

Within a few years of neuromuscular therapy emerging in Europe, Americans Raymond Nimmo and James Vannerson published a newsletter called the *Receptor Tonus Techniques*. In this publication, they described their experiences with noxious nodules. These noxious nodules are what we now call trigger points. According to Travell and Simons, "It now appears that the most reliable diagnostic criterion of trigger points on examination of the muscle is the presence of exquisite tenderness at a nodule in a palpable taut band." Over the course of several decades, neuromuscular therapy as a distinct system began to develop, supported by the writings of Janet Travell and David Simons.

In the late 1970s, a student of Nimmo, Paul St. John, began teaching his system of this technique. He has traveled the United States training massage therapists and challenging the massage industry to become competent in the study of anatomy and kinesiology. Judith (Walker) DeLany began teaching with St. John in the mid-1980s and has gone on to develop her own version of this modality, teaching it across the United States.

St. John has recently upgraded his teaching program and renamed it as "Neurosomatics." Specifically, his program applies Travell and Simons' information about radiography to determine core body asymmetry and shoe reconstruction to help correctly realign posture.

European and American versions of neuromuscular therapy are very similar in theory but different in the hands-on techniques. Both versions agree on the need to incorporate a home-care program encouraging clients' commitment and participation in their healing process. A primary focus for both versions is to understand the formation, the cause of disease, or **etiology,** and treatment of trigger points, locating the source of referral, any perpetuating factors, and reducing and or eliminating them. One of the goals of this method of soft tissue manipulation is to promote the person to independence.

Janet Travell and David Simons published a two-volume set of textbooks for the medical professions, called *Myofascial Pain and Dysfunction: The Trigger Point Manual*, that has impacted the medical, dental, and massage communities. This is the first definitive exposition on myofascial trigger points, making these coauthors true pioneers in the understanding of trigger points and myofascial pain.

Before treating pain, Dr. Travell taught clinical pharmacology at Cornell University and was a heart specialist in New York in the mid-1950s. Interestingly, her father, Dr. Willard Travell of New York City, had specialized in the study of pain, and particularly the pain of muscle spasms. Later, she served as President John F. Kennedy's personal physician, treating his chronic back problems. She became a specialist in treating muscle pain and, in general, pain management.

Janet Travell published more than 40 papers on myofascial trigger points between the years 1942 and 1990. David Simons has long experience as a research scientist and worked as an aerospace physician. After hearing a lecture by Janet Travell, he was intrigued by her work. When he retired from the Air Force, he began an apprenticeship with her. They worked together for 20 years before producing *The*

Trigger Point Manual. The first volume of *The Trigger Point Manual* was published in 1983.

GOALS AND THERAPEUTIC INTENT

As with any type or style of bodywork, the therapist's intent is important. With the proper intent, the therapist's energy may actually help make the work more dynamic. This, along with choosing the correct approach for the area of the body being worked, should be given serious consideration.

Historically, neuromuscular therapy involves a thorough and systematic examination of the muscles and other soft tissues to isolate and identify "**noxious**" (harmful or painful) points and then treat these tissues with various methods. An essential theoretical component to the approach is that the practitioner is working directly and therapeutically with the neuromuscular system, function of which is adversely affected in the establishment of chronic myofascial pain.

The goals and therapeutic intent of neuromuscular therapy are as follows:

- Identify and isolate tissue irregularities related to chronic myofascial pain, perhaps mapping these on a body chart for future reference
- Restore local tissue circulation and reduce **ischemia**—local and temporary deficiency of blood supply—so that the tissues there will begin to heal
- Reduce **hypertonicity**—excess muscular tonus—and spasm to regain integrity
- Reduce soft tissue pain
- Reduce and eliminate noxious or excessive nerve stimulation and normalize reflex activity of the neuromuscular system
- Reduce and eliminate trigger points
- Restore normal range of motion to affected muscles
- Release related adhesions or fascial binding and lengthen chronically shortened muscles, fascia, and other soft tissue
- Identify and reduce or eliminate the perpetuating factors that continue to aggravate the trigger points and chronic pain patterns

KNOWLEDGE AND TOOLS REQUIRED

Neuromuscular therapy is an advanced form of soft tissue therapy that requires skills and integration of several techniques. The following principles are essential to your success of this work.

Anatomy

A precise and thorough knowledge of musculoskeletal anatomy is necessary to confidently and effectively use neuromuscular therapy techniques. When using neuromuscular therapy techniques, the therapist works directly on muscle bellies, origins, and insertions. It is important to know this information along with fiber direction of each muscle in both theory and practice. That is, the therapist should not only be able to cite attachments but should also find them on the body and palpate them. The therapist must also have an understanding of nerve reflexes and nerve physiology to be effective when using neuromuscular therapy, as the nervous system plays a central role in producing and perpetuating chronic pain.

> "If you really want to utilize your intuition, know your anatomy!"
>
> —*Paul St. John*

Along with anatomic precision comes a much more comprehensive style of bodywork that invites one's intuition to come into play. To be able to use intuition, there must be a core body of knowledge to draw on. A neuromuscular therapist armed with precise anatomical and kinesiological knowledge, along with an understanding of the theory and practice of neuromuscular therapy, will be able to use any intuitional responses he comes across when reading over a client's health history form and assessment information and/or when actually working with the client's soft tissues. Without the core body of knowledge, the intuition has no way of producing information.

This is a fascinating subject that takes interest or passion, study, practical use, and time to master. You are encouraged to continue to study anatomy through all available means. Being able to palpate and work at an exact attachment site of any muscle is crucial to the success of this work.

Analysis and Kinesiology

The therapist also needs to develop an overall orientation to stress and trigger points with respect to the interrelatedness of the body's structure and position. An understanding of structural kinesiology is a must here. Body reading, postural stress analysis, and an examination of the client's everyday use of his or her body must become a part of a therapist's repertoire to reduce and eliminate structurally based soft tissue problems.

Tools

Besides being armed with knowledge, you also must have the proper tools with which to practice neuromuscular therapy.

As with many forms of massage, an effective lubricant is needed. Small amounts of lubrication—using gel, oil, lotion, or cream—are required at certain times during each session to mildly reduce friction to the skin. It is important, however, to use only as much lubrication as necessary to be able to properly engage the tissues, such as when performing effleurage, as

FIGURE 1-3 T-Bar pressure bar. Pressure bars are wooden tools with rubber or plastic tips that can be used to apply pressure into the tissues.

a small amount of drag against the skin is required for this. Most nerve endings are at the level of skin. If you do not use a small amount of friction against the skin when treating an area, you will miss the opportunity to treat tissue and bone directly below that area. Certain techniques, however, are performed on dry skin to increase effectiveness. For example, when using any myofascial release techniques during a session, begin with them so they can be done before lubricating for best effectiveness.

In addition, pressure bars can be an invaluable asset in performing this modality. Pressure bars are wooden tools with rubber or plastic tips that can be used to apply pressure into the tissues. One such tool, a T-Bar with a beveled rubber tip, is used in routines presented in this book (Fig. 1-3). Pressure bars are particularly useful to reduce strain on the thumbs in doing extensive amounts of therapy, such as six to eight sessions per day. When using a pressure bar, be sure to hold it in a stable manner. With enough practice, the pressure bar will become a natural extension of the hand.

Another tool, called "Thumby," may be used to apply effleurage, friction, and trigger point pressure. It is also an excellent tool for a client to use at home for trigger point work. This is a device made of silicone and, like a pressure bar, can help reduce the strain on hands and thumbs, in particular.

RELATING TO THE CLIENT

Another critical consideration when performing neuromuscular therapy is how you relate to the client. Discussed below are how to avoid fostering dependency in your client and how to promote his or her participation and provide support. Also discussed is how to effectively communicate with the client during therapy.

Dependency, Participation, and Support

As a massage therapist, you should feel privileged to serve each client and be a part of his or her support system in life. However, you should be careful to not become part of a dependency system.

A dependant client is not a healthy client, as he is looking for a therapist, nurse, doctor, physical therapist, and so forth, to "fix" his problem. This is a client who feels "less than" the person he is dependant on. This places the therapist, in this situation, in a "greater than" position in the client's mind. The client then has expectations that the therapist will fix his problem, and his own responsibility ends there. We want the client to feel responsible for his recovery rather than expecting us to do it all for him.

For a client to recover and stay healthy, he must take on some responsibility and understand that the therapist is only one of the tools he is choosing to use to recover. Now the responsibility of recovery is his.

To avoid this dependency system, encourage your clients from the very first session to participate in the therapy and assist you in understanding their conditions.

Client–Therapist Communication

To succeed in this vital work and to encourage participation from the client, you must establish effective, two-way communication with the client. Specifically, during the first session, communicate with the client to determine the extent of ischemia in tissues, find the location and referred zones of trigger points, and determine the ability of the tissues to release spasms and respond to the therapy. This communication can be accomplished by asking the client the following three questions and listening carefully to his or her responses.

1. **Where is it tender or sensitive to my touch?** Tissues that are in a hypercontracted state are more tender than that of healthy, flexible tissues. In questioning the client about this, be careful not to use words that may have a negative connotation, such as "painful" or "hurting." Use more positive terms when referring to tissues, such as "tender" or "sensitive," so that the client does not associate your work with causing pain. Furthermore, many therapists ask their clients to rate their discomfort on a scale from 1 to 10, with 10 being the greatest discomfort. Having this information will not only let you know what your client is experiencing at the moment but also how effective the treatment is later, when you again ask them to rate their discomfort.
2. **Do you feel any referred sensations to other parts of your body?** Explain to the client what "referred" means and that these sensations might include tingling, burning, numbness, pain, or thermal sensations.

It is important for the client to know that a referral sensation may be something other than pain. Without that knowledge, a client might not relate to the therapist certain sensations that may be coming from trigger points and the work you are doing with them. Often when discussing trigger points, therapists, teachers, and authors call the referral sensation a referral pain only. When this is the case, some may not understand that pain is only one of several sensations that can occur because of trigger points.

3. **Do you feel a release or decrease in discomfort as I press on this area?** Ask this question as you are pressing and holding a trigger point for 10 or more seconds. If you are using the numbered scale, as described above, have the client rate the level of discomfort from moment to moment to indicate any changes. Some therapists, however, find this method distracting to clients—possibly causing them to focus more on the discomfort itself than on the release—and simply ask clients to let them know when the discomfort changes or lessens. Try both systems to see which works best for you.

PRECAUTIONS

Precautions must always be taken when working with a client. This helps us keep our work safe for the client to receive. Some precautions are very general and are used with any massage work, whereas others are quite specific to an area. These precautions include, but are not limited to, things such as being sure the client does not have an unstable heart condition, untreated high blood pressure, brittle diabetes (especially when working on legs), varicosities, bruises, phlebitis, broken bones, inflammation, and sunburn. Fears of being injured during bodywork need to be considered, along with restricted range of motion, very recent surgery, an upcoming sports event within the next 5 days, or degenerative arthritis, pregnancy, and disc herniation.

Precautions regarding the performance of this work include being sure that the referral patterns, pain, and trigger points you are treating actually lend themselves to neuromuscular therapy. A client demonstrating signs of swelling, discoloration, or neurological symptoms should be referred to the appropriate health care provider.

CHAPTER SUMMARY

In this chapter, we have looked at some of the basics of neuromuscular therapy, including a brief explanation of how it works, its components, and its history. We have also considered the goals of this modality and the importance of therapeutic intent when performing it. Finally, we have learned the essential knowledge and tools required for this therapy and how to relate effectively with clients. However, it is important to note that you need more than this information to administer a neuromuscular therapy session; you need to use critical thinking in applying this information. You may then ensure a treatment session that will produce the most effective results possible in the shortest amount of time necessary.

▶ REVIEW QUESTIONS

Short Answer Questions

1. Describe neuromuscular therapy.
2. List at least three of the goals and therapeutic intents of neuromuscular therapy.
3. Regarding the approach for neuromuscular therapy, list at least three of the components of performing this modality.
4. Name three techniques that are used to help locate chronically shortened muscles and trigger points.
5. Neuromuscular therapy is a specialized technique. Which systems of the body does it tend to balance?

Multiple Choice Questions

6. What is necessary to apply neuromuscular therapy effectively and with confidence?
   A. Palpatory artistry and good luck
   B. Precise and thorough knowledge of anatomy
   C. A medical degree
   D. Really strong hands
7. Who are known as the pioneers of trigger point therapy and myofascial pain?
   A. Raymond Nimmo and James Vannerson
   B. Stanley Lief and Boris Chaitow
   C. Peter Lief and Leon Chaitow
   D. Janet Travell and David Simons
8. In communicating with clients, many therapists like to use which of the following to evaluate the client's discomfort level and the effectiveness of trigger point release?
   A. A verbal discomfort scale from 1 to 10
   B. A stethoscope
   C. A medical reflex hammer
   D. Needles
9. When establishing communication with the client, what three areas are important to discuss with the client?
   A. Codependency, delinquency, and stress levels
   B. The extent of ischemia, location of trigger points and referrals, and whether the tissues are releasing/responding to the work
   C. Good jokes, problems with coworkers, and family issues
   D. All of the above
10. Which types of injuries may be treated using neuromuscular therapy?
    A. Acute trauma and infections
    B. Repetitive strain and automobile accident injuries
    C. Organ failure and accumulative trauma
    D. Inflammation and open wounds

True/False

11. The techniques we use to assess and locate chronically shortened muscles and trigger points are effleurage, pétrissage, and friction.
12. Paul St. John was the first person to discover and develop neuromuscular therapy in Europe.
13. The term acute usually refers to an injury of recent onset.
14. We use very small amounts of lubrication when treating with neuromuscular therapy so that we can use friction to more effectively stimulate the nerve endings in skin.
15. It is not necessary to have an understanding of structural kinesiology when using neuromuscular therapy.

Matching

a. Pressure bars
b. Postural dysfunction
c. Concentric contraction
d. Range of motion
e. Referral sensation
f. Eccentric contraction

16. What one feels at a distance from an active trigger point?
17. Internal rotation of a shoulder girdle and scoliosis are examples of what?
18. Name a wooden tool with various rubber or plastic tips.
19. A type of contraction in which the muscle shortens in response to tension.
20. Name the term used for the available movement at a given joint?

REFERENCE

1. Chaitow L. *Modern Neuromuscular Techniques*. Philadelphia: Elsevier, 1996.