

# Fundamentals of Clinical Orthopedic Massage

By Joseph E. Muscolino, DC

## Fundamentals

It might seem that the world of continuing professional education (CPE) for clinical orthopedic massage offers a dizzying array of treatment technique options. But when we look a little closer, we see that most of these techniques are variations of a few fundamental treatment approaches. The four fundamental treatment approaches that form the foundation of most every treatment technique in the world of CPE are hydrotherapy, soft tissue manipulation strokes, stretching, and joint mobilization. Following is a brief overview of these fundamental components of clinical orthopedic massage.

## Hydrotherapy

The term hydrotherapy literally means water therapy (hydro means water), and was named because water is used to apply hot and/or cold therapy to the client. Although water is not the only means of transferring heat and cold, the term hydrotherapy is generally used as a blanket term for all techniques that involve hot and cold. Cold hydrotherapy (also known as cryotherapy) usually involves the use of ice or ice packs and has anti-inflammatory and analgesic effects (Figure 1). Ice is an anti-inflammatory that decreases swelling because it



Figure 1. A cryocup® is an excellent way to apply cold therapy (cryotherapy).

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causes vasoconstriction of local arteries; and it is an analgesic that decreases pain because it can numb pain receptors in the region of application. Heat hydrotherapy acts to relax and loosen musculature and other soft tissues where it is applied. Heat accomplishes this both by relaxing nervous system control of muscle tone and by loosening fascial tissues.

There are a number of options when it comes to hydrotherapy application for orthopedic work. Cold can be used to numb a region before deep tissue work is done. By lessening sensitivity, the client will likely allow deeper pressure to be used than otherwise might have been comfortable or possible. Cold can also be used after deep tissue work to decrease swelling that might already have been present, or to prevent swelling from occurring that might result from the deep pressure. Although heat can be used to “soften” taut tissues before engaging in deep tissue work, it is especially valuable to use heat before stretching or joint mobilization is performed.

## Soft Tissue Manipulation

The second fundamental treatment technique approach is soft tissue manipulation. Soft tissue manipulation is a broad term that can be used to incorporate most all

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Figure 2. The table needs to be low when applying deep pressure to the client's back.

types of hands-on massage strokes. These include cross-fiber, compression, and deep stroking, to name a few. The benefits of each stroke vary depending upon the condition being treated and the individual preferences of the client receiving the work. What is common to all these strokes is the introduction of pressure into the client. Although deep pressure is not always the appropriate or

best treatment option for every condition or every client, it is an extremely valuable tool for the clinical orthopedic massage therapist. When called for, it is critically important that we can generate deep pressure without excessive effort. Fundamental to this is the quality of our body mechanics.

There are many aspects to optimal body mechanics; however it is likely that the most important one is generating pressure from our core (trunk and pelvis). To accomplish this, our core must be positioned behind and in line with the stroke.

When we are standing and pressing into the “top” surface of the client (the body surface that is oriented toward the ceiling), we need to place our trunk over the client; this requires the height of the table to be low so

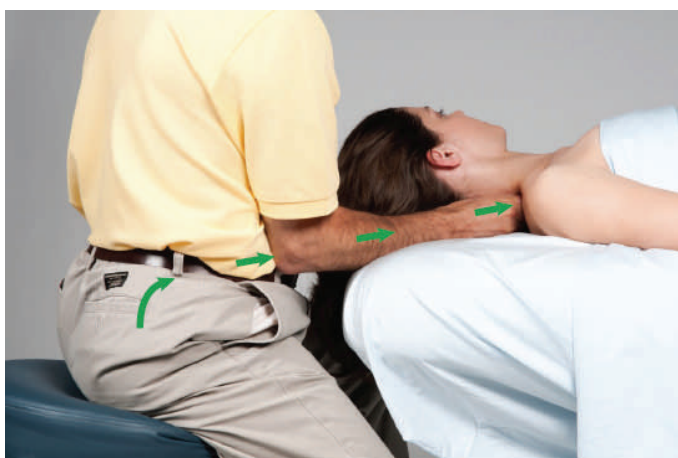


Figure 3. Placing the elbow inside the anterior superior iliac spine (ASIS) allows for pressure generated from the core to translate through the forearm and into the client.

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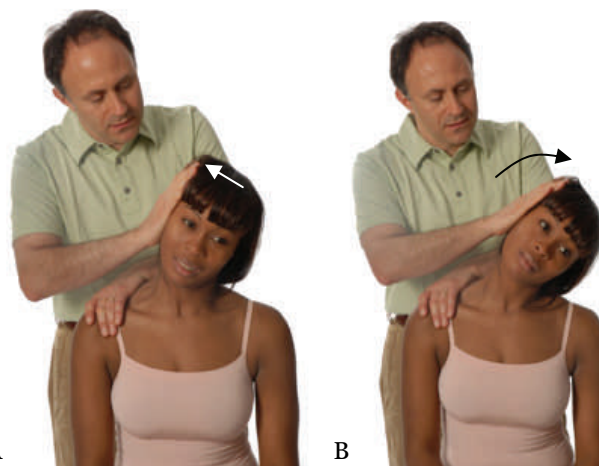


Figure 4. The sequence of steps for contract relax (CR) stretching protocol for the right lateral flexor functional group of the neck. A, The client contracts the target musculature against resistance by the therapist. B, The client then relaxes and the therapist stretches the client into left lateral flexion. Further repetitions are usually initiated from the position of stretch attained at the end of the previous repetition.

that the client is literally under us (Figure 2). A good guideline is to have the top of the table at the height of our knee. Of course, if we are using our elbow or forearm as a contact, the table can and should be higher. Electric lift tables are not only convenient, they are extremely valuable because they allow us to optimize the table height by simply pressing on a foot pedal. This allows for optimal quality of work throughout the session, which translates into therapeutic success.

When we are seated and working the supine client's neck, positioning our core behind the stroke involves laterally rotating the arm at the glenohumeral joint and placing our elbow inside our anterior superior iliac spine (ASIS). We then generate pressure by leaning in from our core. This core pressure translates through our forearm, hand, and then into the client (Figure 3).

## Stretching

The third fundamental approach of orthopedic work is stretching. When appropriately applied, stretching is a critically important aspect of our orthopedic massage session. Because it is most effective when the client's tissues are already warmed up, stretching is best performed after heat and/or massage are done. Logistically, this means that stretching is usually incorporated into the treatment toward the end of the session. There are a number of different stretching protocols that can be done. Common to all stretching techniques is that soft tissues are lengthened. This can aid in relaxing muscle tone and breaking up soft tissue fascial adhesions.

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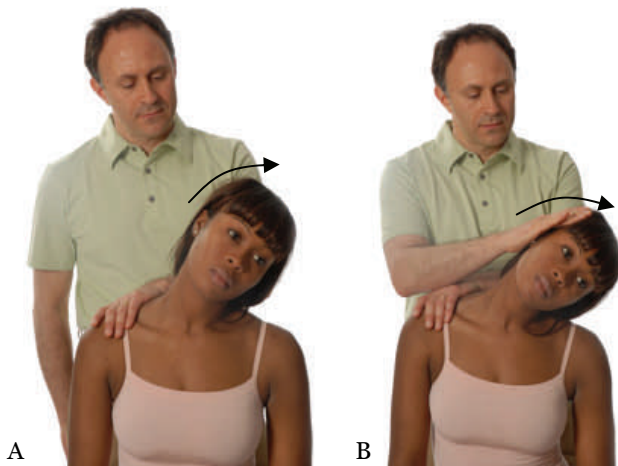


Figure 5. The sequence of steps for agonist contract (AC) stretching protocol for the right lateral flexor functional group of the neck. A, The client actively moves into left lateral flexion. B, The client relaxes and the therapist stretches the client farther into left lateral flexion. Further repetitions begin from the same starting position.

In addition to the physical lengthening component of stretching, advanced stretching techniques utilize an additional component; they add a neurologic inhibition that relaxes muscle tone. The generally accepted basis for contract relax (CR) stretching (also known as post-isometric relaxation [PIR] stretching or proprioceptive neuromuscular facilitation [PNF] stretching) is inhibition of musculature due to the Golgi tendon organ reflex. Agonist contract (AC) stretching (the basis of Aaron Mattes' active isolated stretching [AIS] technique) is based upon the reciprocal inhibition reflex (Figures 4 and 5).

## Joint Mobilization

The fourth fundamental treatment approach of clinical orthopedic massage therapy is joint mobilization. Joint mobilization is rarely utilized by massage therapists. This is unfortunate because when appropriately applied, especially to the spine, it is such a powerful and effective treatment tool. In essence, joint mobilization can be looked at as a very specific and focused form of pin and stretch technique. Using the neck as an example, we pin (stabilize) one vertebra, and then we move the vertebra above (along with the rest of the cervical spine above and the head) relative to it. This directs the stretch to the specific segmental joint level that is located between them (Figure 6). Joint mobilization is extremely important because no other stretching protocol can target a specific joint level of the spine. All other stretching techniques (including neural inhibition stretches) apply their stretching force across the entire region of the spine where they are being employed. Consequently, if one joint level is tight (hypomobile), then adjacent joint levels usually compensate by increasing their motion

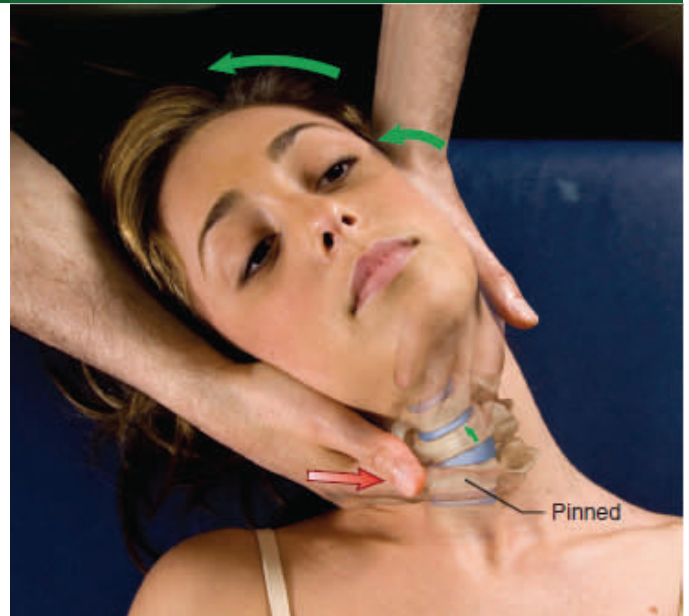


Figure 6. Joint mobilization of the neck. One vertebra is pinned and the superior vertebra is moved relative to it. No thrust is ever applied with joint mobilization!

**“Because joint mobilization is so precise and has such powerful effects, it is especially important to attend hands-on workshops when first learning this skill.”**

(becoming hypermobile). Because these hypermobile levels increase their motion, the tight joint level can avoid being stretched.

Joint mobilization stretching is very specific so we use only a very small range of motion to apply the stretching force; and we apply the mobilization stretch for only a second or less. It is critically important to point out that no thrust is introduced during joint mobilization. Doing so would constitute a high velocity joint manipulation that is not within the scope of massage therapy. Joint mobilization is always applied slowly and evenly.

## Putting It All Together

Competent clinical orthopedic massage therapy involves many things. First, it requires that we possess assessment skills and the critical thinking necessary to apply them to form an accurate assessment of the client. Next, we must have a tool box of treatment techniques that we can use to treat the client; along with the critical thinking needed to choose among these treatment tools. As a rule, our treatment should always be specific and tai-

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**“The addition of these tools to your therapeutic tool box will increase not only your therapeutic success, but the success of your practice as well!”**

lored to the client who is on the table; treatment should never be applied in a cookbook manner. However, it is generally wise to follow the following guidelines: When we are looking to loosen taut soft tissues (including tight musculature) with orthopedic work, use a combination of heat, massage, stretching, and joint mobilization. Further, the best order to apply these techniques is heat and/or massage first, followed by stretching and then joint mobilization.

## Acquiring New Skills

If you do not currently utilize stretching (especially advanced stretching techniques) and joint mobilization, you may want to consider adding them to your practice. However, as with all new techniques, it is best to become proficient with them before trying them out on your clients. Although these techniques can be learned from books, journal articles, and video, in-person hands-on workshops with personal attention by a skilled instructor is recommended for advanced stretching techniques. Because joint mobilization is so precise and has such powerful effects, it is especially important to attend hands-on workshops when first learning this skill. The addition of these tools to your therapeutic tool box will increase not only your therapeutic success, but the success of your practice as well!

For more information on effective body mechanics for deep pressure, see *Work Smarter, Not Harder* at <http://learnmuscles.com/final%20CEcourse%20WIo6.pdf>.

For more information on advanced stretching techniques, see *Stretch Your Way to Better Health* at <http://learnmuscles.com/stretch%20your%20way%20to%20better%20health-%20FA06.pdf>.

See also *Advanced Stretching: Using Neural Inhibition to Enhance the Stretch, Parts 1 and 2* at [http://learnmuscles.com/MT\\_09\\_2010\\_Advanced\\_Stretching\\_1.pdf](http://learnmuscles.com/MT_09_2010_Advanced_Stretching_1.pdf) and [http://learnmuscles.com/MT\\_11\\_2010\\_Advanced\\_Stretching\\_2.pdf](http://learnmuscles.com/MT_11_2010_Advanced_Stretching_2.pdf).

For more information on joint mobilization of the spine, see *Joint Mobilization of the Neck* at <http://learnmuscles.com/originals/body%20mechanics%20FA07.pdf>, *Joint Mobilization of the Thoracic Region*

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at [http://learnmuscles.com/Jt%20Mob%20of%20Thor%20Region%20-%20MTJWIo9\\_BodyMechanics.pdf](http://learnmuscles.com/Jt%20Mob%20of%20Thor%20Region%20-%20MTJWIo9_BodyMechanics.pdf), and *Joint Mobilization of the Low Back* at <http://learnmuscles.com/joint%20mobilization%20of%20the%20low%20back%20-%20WI%2009.pdf>.

All articles cited can be found on the Articles page of the author's website: [www.learnmuscles.com](http://www.learnmuscles.com).

## Figure credits

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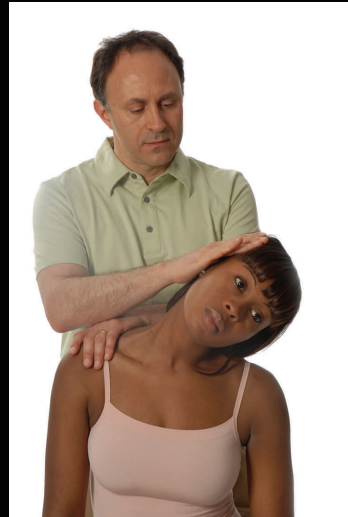
## About the author

Dr. Joe Muscolino has been a massage therapy educator for 25 years. He is the author of eight major publications with Mosby of Elsevier, including *The Muscle and Bone Palpation Manual, with Trigger Points, Referral Patterns, and Stretching*. He is also the author of *body mechanics*, a column article in *mtj* (*massage therapy journal*), as well as an upcoming book on advanced neck treatment techniques for the manual therapist (publishing Fall of 2011, Lippincott Williams Wilkins publisher). He runs numerous continuing education workshops for therapists and instructors, including a Certification series on *Clinical Orthopedic Massage Therapy* (COMT). And he has a private chiropractic practice in Fairfield, CT., USA. For more information, visit his website at [www.learnmuscles.com](http://www.learnmuscles.com).



# Deep Tissue Massage, Stretching & Joint Mobilization

Sydney, Hobart & Brisbane —  
July 2011



**Approved AAMT CPE & AMT CEU**

## Intermediate & Advanced Techniques for the Neck

Sydney: 2-3 July 2011, Hobart: 9-10 July 2011, Brisbane: 12-13 July 2011

The first day will cover body mechanics for deep tissue work and stretching for the neck, including: How to use your core to easily perform deep work to the neck, How to safely massage the musculature of the anterior neck, and How to perform multiplane stretching of the neck.

The second day covers Advanced Stretching Techniques and Joint Mobilization. Dr. Muscolino will describe and demonstrate: How and why CR (also known as PNF), AC, and CRAC stretching techniques work and advanced safe joint mobilization techniques.

## Intermediate & Advanced Techniques for the Low Back & Pelvis

Sydney: 4-5 July 2011

This workshop is structured similarly to the neck workshop. The first day will cover body mechanics for deep tissue work and stretching for the lower back & pelvis. The second day will focus on advanced stretching and how to safely perform joint mobilization.

## Deep Tissue Massage, Stretching & Joint Mobilization

The focus of these workshops is to learn how to work clinically utilizing deep pressure, basic and advanced stretching, and joint mobilization techniques; and to do so more efficiently by working from the core with less effort so you do not hurt yourself. In effect, how to work smarter instead of harder!

Working clinically and efficiently can be done simply by learning a few basic guidelines of proper technique that Dr. Joe Muscolino will show you. An invaluable workshop for anyone who does sports, clinical, and/or rehab. work!

### Dr. Joe Muscolino

Dr. Joe Muscolino is a licensed chiropractic physician and has been a massage therapy educator for 25 years, with extensive experience in teaching kinesiology and musculoskeletal assessment and technique classes.

Dr. Muscolino has authored 8 major publications with Mosby of Elsevier Science, including the best selling *The Muscle and Bone Palpation Manual, with Trigger Points, Referral Patterns, and Stretching*. He also writes the column article *body mechanics* for the AMTA's massage therapy journal.

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