



cervical traction

CERVICAL TRACTION IS ONE WAY TO HELP CLIENTS WHO ARE DEALING WITH NECK PROBLEMS

Any manual therapist in practice knows that neck problems are likely the most common conditions with which clients present. These problems are usually a combination of muscular hypertonicity and hypomobile joint dysfunction, which are like the proverbial chicken and egg. Tight muscles end up restricting joint motion, and restricted joint motion results in protective muscle splinting; in other words, tight muscles.

Rummaging through our tool chest of treatment techniques, there are many approaches that can be helpful. Most every massage therapist is well-equipped to address their clients' necks with Western-based Swedish strokes and hydrotherapy (hot and cold). Stretching is another valuable technique that many therapists employ, and a few therapists explore more specific joint mobilization stretching techniques. However, one extremely valuable treatment technique for the neck that can be used is traction.

Cervical Traction

Cervical traction is accomplished by pulling the client's head in a cephalad direction, in other words away from the trunk. This approach is clinically therapeutic for two reasons. First, it is a form of stretching that lengthens all

vertically oriented soft tissues of the neck. Second, it decreases the weight bearing compression forces upon the joint surfaces, intervertebral discs and intervertebral foramina of the cervical spine.

When we stretch the neck in the six cardinal plane ranges of motion (flexion, extension, both lateral flexions, and both rotations) or any combination thereof, we introduce a stretching and lengthening force into most every soft tissue of the neck. However, we also create a compression force on the opposite side of the spine. For example, if we stretch the client's neck into right lateral flexion, we do so by moving the neck into left lateral flexion, thereby causing compression to the left side.

Cervical traction achieves a desired stretch, and in fact optimally stretches and lengthens many of the smaller intrinsic tissues of the spine—such as the smaller, deeper muscles and ligaments, as well as the facet joint capsules—but it does so without causing any associated compression force. In fact, cervical traction actually decreases compression throughout the entire neck. This is important because the cervical spine is a weight-bearing structure that is under constant compression force due to the weight of the head whenever we are standing or sitting. Although we can alleviate this weight-bearing compression by lying down, cervical traction actually

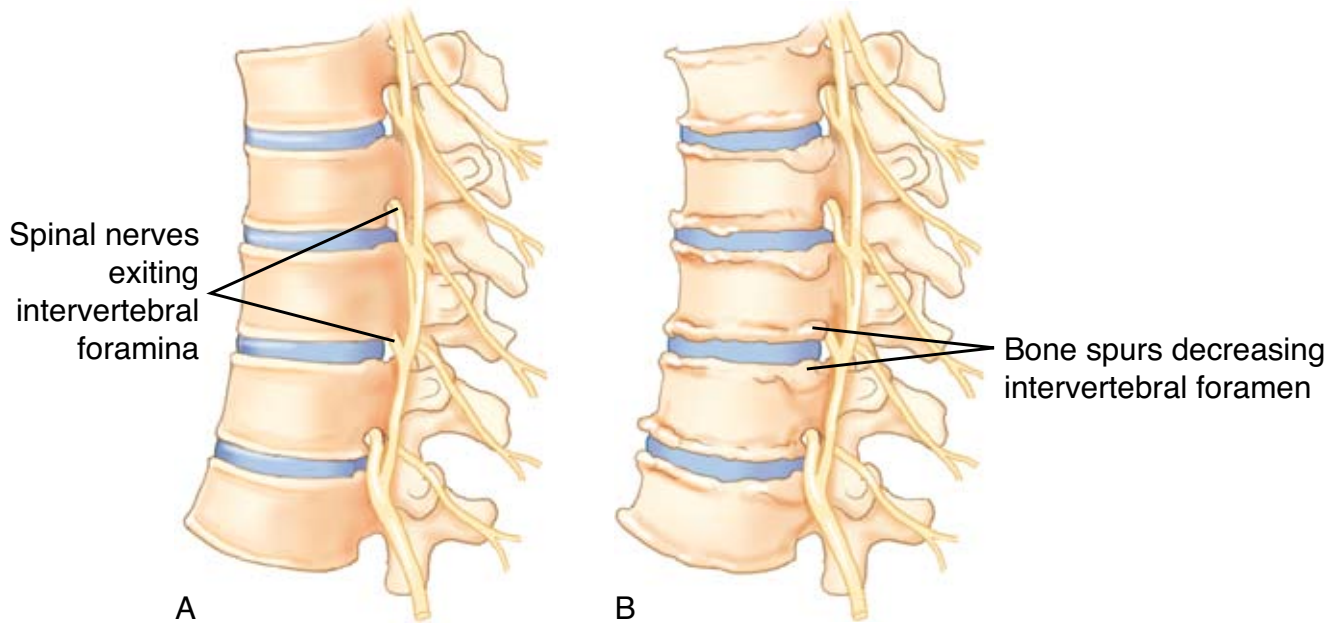


FIGURE 1: A, LATERAL VIEW OF THE VERTEBRAL COLUMN DEMONSTRATING SPINAL NERVES EXITING THROUGH THE INTERVERTEBRAL FORAMINA. B, BONE SPURS ARE SEEN ENCROACHING UPON AN INTERVERTEBRAL FORAMEN.

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reverses the compression force by creating a lengthening distraction force that opens up the joint spaces between the vertebrae.

Given that compression forces add to the physical forces that contribute to the progression of degenerative joint disease (DJD, also known as osteoarthritis [OA]) and intervertebral disc disease, including disc thinning, bulging and herniation, cervical traction can be helpful for clients who have these conditions.

Weight-bearing compression forces also push the vertebrae down into each other, resulting in a decrease in the size of the intervertebral foramina where the spinal nerves enter/exit the spinal cord. If an intervertebral foramen of the neck becomes too small, compression of the spinal nerve within it is possible, causing referral of symptoms into the same-sided upper extremity. This is even more likely if the size of the foramen is already decreased due to the presence of a pathologic disc or DJD bone spurs (Figure 1). For these reasons, cervical traction is not only allowable with clients who have DJD, pathologic disc disease, and upper extremity referral, it is often indicated as clinically therapeutic.

The Benefits

As a treatment technique, cervical traction has the advantage of generally being loved by clients. Clients who have chronic neck problems often express that they feel as if they want someone to “pull their head off their body” because of the constant compression they feel in their neck. Cervical traction creates this satisfying distraction force that they instinctively desire.

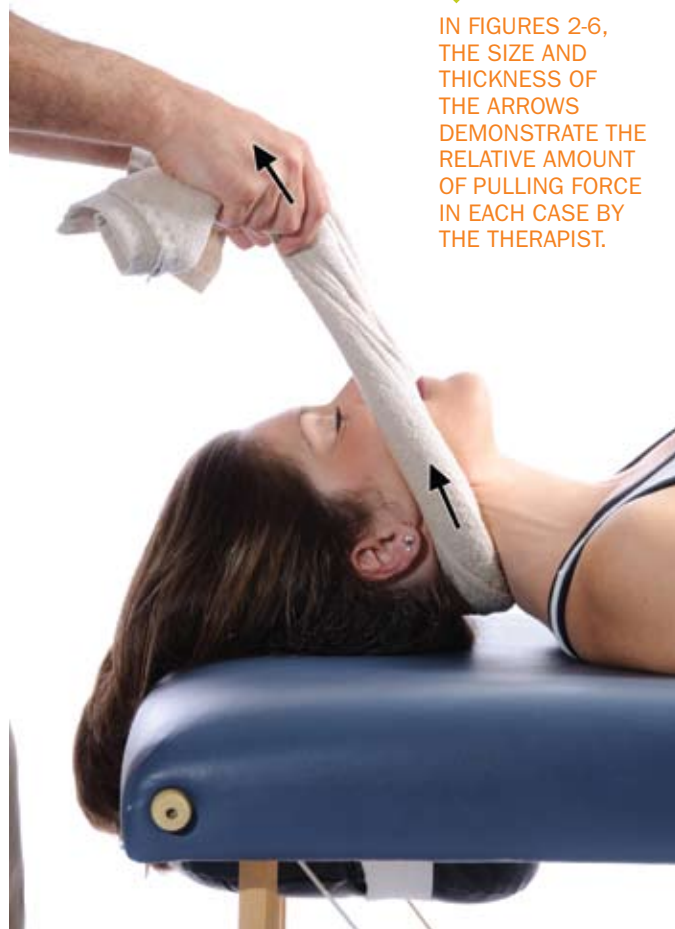
Introducing a cephalad distraction force also improves the posture of the neck by lengthening it upward. Many manual and movement disciplines speak of optimizing neck posture by imagining a string attaching from the top of the head to the ceiling above. Cervical traction literally creates this pulling force.

Take Care

Any therapy that has the power to do good also has the power to do harm if it is not performed and applied correctly. This is certainly true with cervical traction. Because it is a form of stretching, it must be performed slowly and gently, otherwise the muscle spindle stretch reflex may be triggered and result in muscular spasming



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IN FIGURES 2-6, THE SIZE AND THICKNESS OF THE ARROWS DEMONSTRATE THE RELATIVE AMOUNT OF PULLING FORCE IN EACH CASE BY THE THERAPIST.

FIGURE 2 [LEFT]: CERVICAL TRACTION WITH A TOWEL IS INITIATED BY GENTLY PULLING UPWARD TOWARD THE CEILING TO GRIP THE CLIENT'S SKIN. **FIGURE 3 [RIGHT]:** THE ANGLE OF PULL IS CHANGED TO BE MORE "CEPHALAD" TO GRIP UNDER THE RIDGE OF THE OCCIPUT.

in the region.

Furthermore, cervical traction places a potentially powerful stretch upon the intrinsic tissues of the joints, including the facet joint capsules. These are tissues richly innervated with positional and movement proprioceptors, and in many clients, these tissues have not been stretched for months or years. Therefore, if we suddenly ask the joint capsules and other intrinsic tissues to stretch more than they are comfortably able, we may irritate the proprioceptors located within them, causing them to fire inappropriately. If these inappropriate signals sent to the brain do not match the other proprioceptive signals from the eyes and inner ears, "proprioceptive confusion" may arise in the form of dizziness and possibly nausea.

For these reasons, when first introducing cervical traction into the care plan of a client, it is best to perform it extremely slowly and gently, and for a repetition time of five seconds or less. With ensuing visits, the inten-

sity and duration can gradually be increased, working toward two to three repetitions of 20–30 seconds each.

Applying Cervical Traction

There are two manual methods by which cervical traction can be performed. Therapists can use their hands to directly contact the client; however, this requires a great deal of effort and can be quite fatiguing for the therapist. Much easier is to use a towel to contact the client. This allows the therapist to stand up and work from the core by using body weight.

It's very important to use a towel that is the correct thickness. Too thick and it is difficult to grip the client's head; too thin and the material will dig into the client's tissues, causing discomfort. If available, an older threadbare bath-sized towel is optimal. Otherwise, a king-sized pillow case usually works fairly well.

Before beginning, if the client is wearing any earrings that are large or hanging down, ask the client to remove



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FIGURE 4A: THE THERAPIST IS IN A SAGITTALLY ORIENTED STANCE WITH ONE FOOT FORWARD AND THE OTHER IN BACK.

FIGURE 4B [INSET]: THE THERAPIST USES HIS CORE BY SHIFTING HIS WEIGHT FROM THE FRONT FOOT TO THE REAR FOOT TO INCREASE THE TRACTION FORCE.

them. Now, with the client supine and the towel placed under the neck, begin by gently lifting the towel straight up toward the ceiling to grip the client's skin (Figure 2). Then gently increase the pulling force and change the angle of pull on the towel to be more cephalad so that the towel grabs under the ridge of the occiput (Figure 3). To begin applying the traction force, it is important to have a "sagittal" stance with your feet (one foot forward and the other back) so that you can gradually shift your body weight from your front foot to your rear foot (Figure 4).

If you would like to increase the traction stretch force to one side of the client's neck, a component of lateral flexion to the opposite side can be added. This requires a graceful and careful change in the position of your feet to be more oriented in the frontal plane (Figure 5a). An anterior view of the client demonstrating how the towel is held away from the client's face and head so that their ears are not squeezed is seen in Figure 5b. Rotation can also be added by altering the line of pull upon the towel by increasing your pulling force on the "upper" side of

the towel (Figure 6).

Learning to perform cervical traction smoothly and efficiently might take time and practice, but the benefits to your clients are well worth it. The addition of this technique to your tool box of treatment approaches might prove to be the key to alleviating some of your more difficult and stubborn neck cases. ■



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FIGURE 5A [LEFT]: LATERAL FLEXION TO ONE SIDE CAN BE ADDED TO THE TRACTION STRETCH BY THE THERAPIST SHIFTING HIS BODY WEIGHT TO THE OPPOSITE SIDE.

FIGURE 5B [INSET]: IT IS IMPORTANT TO HOLD THE TOWEL SUFFICIENTLY AWAY FROM THE CLIENT SO AS TO NOT UNCOMFORTABLY SQUEEZE HER EARS.



FIGURE 6: ROTATION CAN BE ADDED TO THE TRACTION STRETCH BY INCREASING THE PULL ON ONE SIDE OF THE TOWEL.