

Patient Education

Cervicothoracic Myofascial Pain Syndrome

Definition

Dull pain or ache in the region of the neck and shoulders.

Distribution of Pain

- Pain is typically focused on the area between the neck and shoulder called the shawl region.
- Discomfort often extends down between the shoulder blades and is typically symmetrical between left and right side, but can be more focused on one side.
- Can frequently be accompanied by a heavy feeling in the arms and numbness and tingling in the hands and fingertips.

Aggravating factors

- Prolonged sedentary positions that including reaching forward and looking down repetitively or for a prolonged period of time (Computer work is a very common activity that creates this type of posture)
- Sleeping on either shoulder and arm with aggravation of the hand numbness and tingling
- Repetitive or prolonged overhead activities

Risk factors

- Sedentary work
- Sedentary lifestyle with lack of routine exercise
- Hobbies that promote forward head and shoulder posture, such as crocheting
- Stressful work
- Smoking
- Medical conditions such as diabetes, thyroid disorders, coronary artery disease, depression/anxiety, carpal tunnel syndrome

The Cause of Discomfort:

Neck and shawl pain

Figure 1.



The nature of our daily lives is such that we spend a majority of our time looking down and working with our arms in a lowered forward position. Figure 1.

With automation and computerization of our work places, we find ourselves having to hold this type of posture more frequently and for longer periods of time. Over time this creates a postural imbalance where the front muscles of the neck, chest, and shoulders become tight and overused and the back muscles of the neck, shoulders and upper back become overstretched and weak.

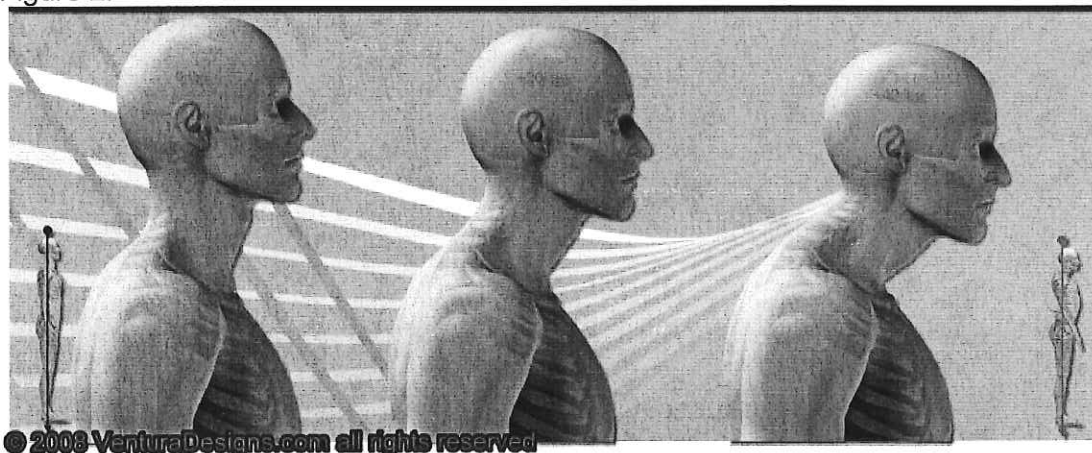
It is the nature of a weak muscle to become tense and painful. This in part happens because of decreased blood circulation in these weak and tense muscles. Poor blood circulation results in decreased delivery of oxygen and nutrients. All muscles in the body respond to lack of oxygen by becoming painful.

A good example of the body's response is chest pain that a person feels when he or she is having a heart attack, which is a sudden lack of oxygen to the heart muscle. The same response occurs in the skeletal muscles of the neck and shoulders with one big difference: it is not a sign of something dangerous or potential deadly as in the case of a heart attack.

Lack of blood flow to the muscles allows accumulation of toxins that are normally cleared by good circulation.

When this imbalance is allowed to continue for a prolonged period of time (typically more than a year), the muscle becomes very weak and irritable. It is tender to touch and has a very poor capacity for work (fatigues quickly with any sustained effort). The same imbalance also places the head forward of the shoulders. Physics dictate that the more forward the head position is the more the head weighs, and the more work it is for the muscles of the neck and shoulders to hold the head up. See figure 2.

Figure 2.



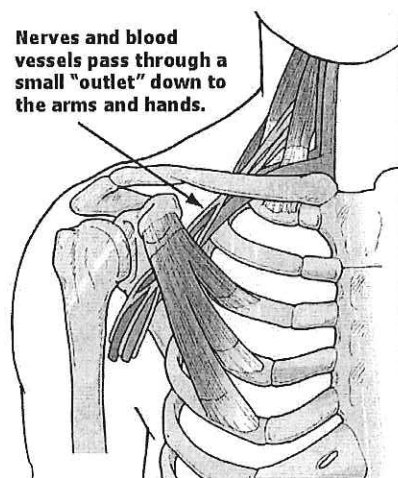
This creates more muscle fatigue, tension and discomfort.

Arm heaviness and hand numbness and tingling

Along with the muscle discomfort of the neck and shoulders, there is also frequently numbness of the hands and heaviness of the arms. The numbness is typically in all the fingers. This is different from other common conditions, Carpal Tunnel Syndrome where the numbness is in the thumb, index and middle fingers only, and a pinched neck nerve where the numbness is typically only in one or two fingers of the hand.

The entire hand numbness occurs because the nerves that come from the neck and travel down the arm, travel through a set of muscle tunnels collectively called the "thoracic outlet". (Figure 3)

Figure3



As shoulders and the head come forward, these muscle tunnels become smaller and the nerves that travel through them become compressed. This causes numbness and tingling in the hand and fingers.

Activities that create more compression of the thoracic outlet such as prolonged computer use, driving, or sleeping on the affected side, cause more nerve compression and more tingling.

The good news is that this type of nerve irritation is not dangerous, does not cause nerve damage and is completely reversible.

Treatment:

Postural alignment is key! The ultimate goal is to create head posture where the front of the ear is aligned with the top of the shoulder and shawl region. (Figure 4)

Figure 4.



This is accomplished through two main mechanisms: postural alignment and physical treatment of the weak and tight muscles.

1. Postural alignment:

Half an hour of the best exercise program can never compete with a full day of poor posture!

Awareness of proper positioning of the head, shoulders and arms is crucial in prevention and treatment of a Cervicothoracic Myofascial Pain Syndrome. Ergonomic computer alignment is a very important. (Please see the included, ergonomic computer station set up hand out).

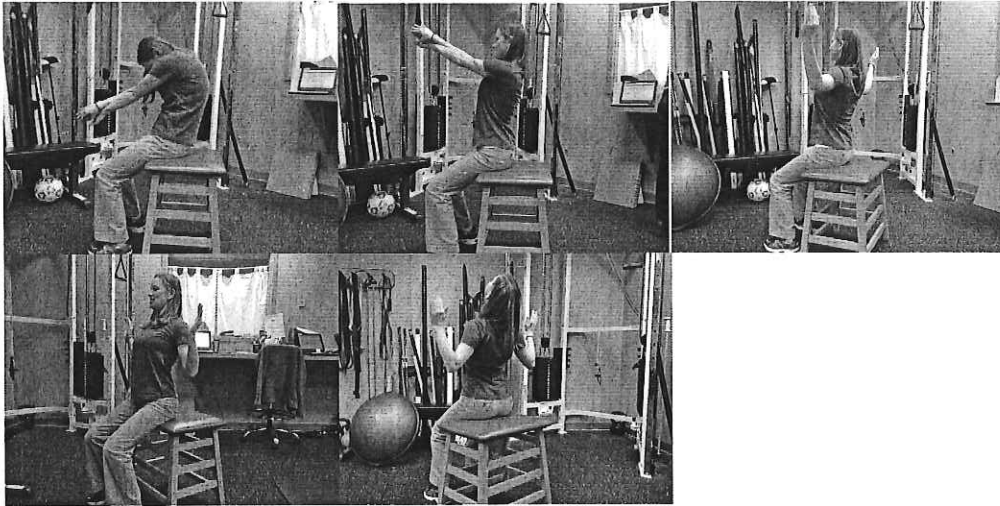
Proper positioning of the body during any task that promotes forward head and shoulder posture is critical. The tasks include driving and any work that requires one to lean forward. In general, a slight lean back with shoulders rolled down and back, neck long and head on top of the shoulders is desired. (Figure 4)

2. Physical treatment:

Stretching every twenty minutes during one's workday. One of the more helpful stretches is called "elbows to pockets."

This exercise is done in three phases. First the arms are drawn forward with the shoulders brought forward and upper back rounded. Then the arms are brought

chin high and then out to the sides. Lastly the arms are brought back and down into a wide "W" position with elbows aimed at the back pockets of one's pants.



Mobilization of the restricted neck, shoulder and back regions is frequently required and should be done by a well-trained physical therapist or a chiropractor. Your doctor will make a recommendation of which one would be more appropriate for you.

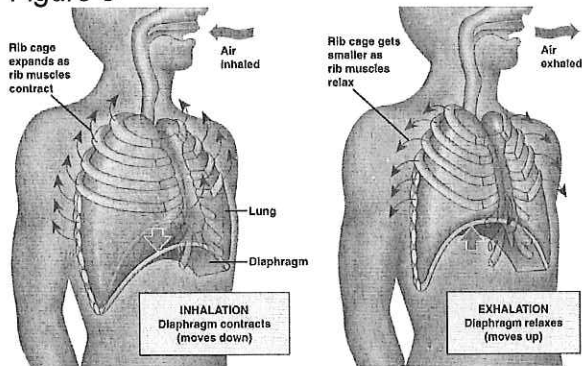
Strengthening of the over stretched and weak muscles of the upper back and neck is required, and should be learned initially through a comprehensive course of physical therapy.

Note: simply stretching the tight muscles will not lead to long term improvement because strong deep neck and shoulder blade muscles are required to balance the tight front chest and shoulder muscles

Diaphragmatic breathing is very important in preventing overuse of the neck and chest muscles. Most commonly the breathing is done through the chest and shoulders. We take about 20,000 breaths in 24 hours. If these breaths are done with the chest and shoulders, the shoulders are drawn up and neck is drawn forward. The same muscles that support the neck become overused.

Proper breathing is done through the belly with the diaphragm being depressed. This allows for the desired downward positioning of the shoulders. The depressed diaphragm assumes a dome shape and braces the trunk for better support of the upper body. (Figure 5)

Figure 5



Diaphragmatic breathing frequently requires training and instruction by a physical therapist or a yoga instructor and should be practiced daily for it to become a natural way of breathing. (Figure 6)

Figure 6



This type of breathing is considered part of the strengthening process because the diaphragm does become stronger through the proper type of breathing.

- Once the strengthening exercises are learned, they should be performed independently at least twice a week.
- A routine performance of strength based posture exercises can prevent many problems that arise from poor posture and can be compared to brushing ones teeth in prevention of cavities.

Exercise Recommendations:

At completion of a typical physical therapy program, we recommend transitioning to community-based exercise. Working with an experienced athletic trainer can be motivational and allow for continued progress.

Yoga is also very effective in improving postural positioning and postural muscle strength.

Overhead and shoulder height exercises such as Military Shoulder Press, Shoulder Shrugs, Side and Front Flies are not recommended due to their propensity to overuse already fatigued muscles.

Aerobic exercise is critical in improving the health of overused muscles. Aerobic exercise increases heart rate which in turn improves circulation and with it delivery of oxygen and nutrients and elimination of toxins. *(See discussion of causes of neck and shawl pain at beginning of the article).*

- Aerobic exercise should be done for forty-five minutes at least two days a week with four days a week being optimal.
 - Examples of aerobic exercise include brisk walking, elliptical machine use, jogging, cycling in an upright position.
 - Swimming is typically not recommended due to its tendency to overuse fatigued muscles and create more tightness in the chest and shoulders.

This article can be also found on our website www.buffspine.com under the Resources section.