



**THE SCALENE REPORT:**

**The Muscle in Your Neck  
That Causes Knots in Your Back  
And Carpal Tunnel Syndrome**

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## The Scalene Report: The Muscle in Your Neck That Causes Knots in Your Back and Carpal Tunnel Syndrome

### Introduction

The scalene muscles are a commonly overlooked cause of Carpal Tunnel Syndrome and other hand, arm and upper body pain. If you haven't had relief from conventional medical treatment or massage therapy, this report is for you!

### Is your neck causing your pain?

Do you have "knots" in your upper back between your shoulder blade and spine or pain in your hand, wrist and arm?

There are muscles in your neck which cause pain in your hands, wrists and arms and also cause knots or spasms in your back. Even though the areas are not close together, the same muscles cause their pain. They are the scalene muscles.

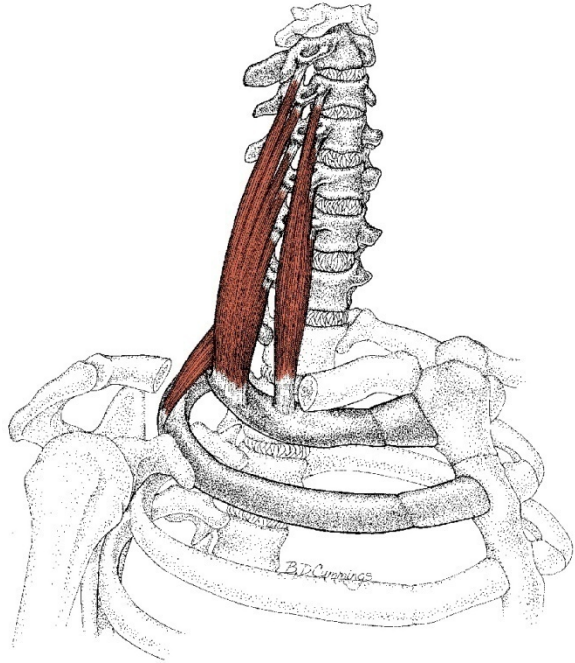
Pain, tingling, numbness, knots and other types of discomfort are symptoms. A symptom has a *cause*. Symptoms happen for a *reason*. Sometimes the cause is the scalene muscles.

This cause of both carpal tunnel symptoms and knots is quite common but *almost always* overlooked. It's possible to have both pain symptoms caused by the same muscle!

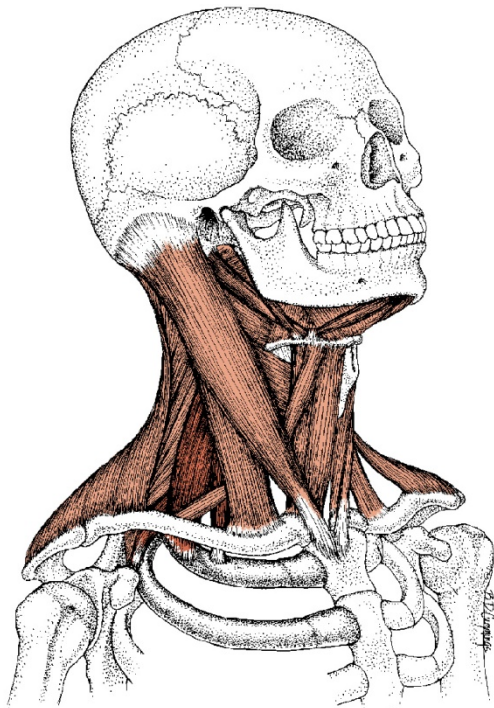
If your sleep is often disturbed by pain in your shoulder, that's a clue the scalene muscles may be involved. Sleeping sometimes allows the scalene muscles to shorten and become tighter if your shoulders creep up to your neck in your sleep. This will cause symptoms.

### About the scalene muscles

The scalenes are on the sides of your neck. There is a set of muscles on each side of your neck, left and right. They attach to your neck bones and your ribs.



This illustration (above) shows the right side of a neck with ribs and the right shoulder. These muscles are set deeply so they are not visible from the front. They are tucked behind the Sternocleidomastoid muscles or SCM (below.)



The illustration (above) shows the SCM muscles on the right side of your neck. The SCM's are very visible from the front. They attach to the upper part of your breastbone and collarbone and behind your ear, on your skull. They are responsible for head and neck pain but not for Carpal Tunnel Syndrome or knots in your back. If you compare the 2 illustrations, you can see the scalenes tucked behind the SCM.

### **How can you find your scalene muscles?**

Try this. Look in the mirror, and grimace, or make your neck muscles pop out like a "muscle man." Two will be prominent, one on each side. Those will be the SCM muscles. They attach to your collarbone at the notch in the middle, and to the base of your skull behind your ears. They look like a "V", going from the collarbone "notch" to your skull behind your ears.

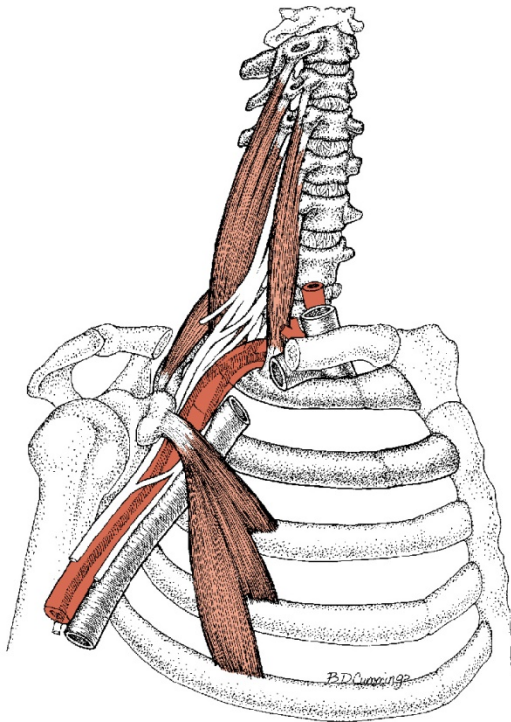
Directly behind the SCM's are the scalenes. There is a set of three (in most people) which are very close to each other, on the left side and on the right side of your neck.

The primary purpose of the scalene muscles is to help with breathing. The muscles lift your ribs so you can inhale.

When the scalene muscles get tight, or aggravated, they can develop "trigger points." Remember, trigger points are hyper-irritable, or really crabby, areas of soft tissue or muscle which "fire" or cause pain in other areas, sometimes quite a distance away.

If you have a therapeutic massage to work out your knotty back problem or carpal tunnel symptoms, and it *doesn't* help, then the problem isn't in your back or arm. The *cause* of your pain is somewhere else. The knot in your back or pain in your hand, arm and wrist is just a *symptom*--other muscles are causing it.

The problem—the *cause*--is in your scalene muscles.



In this illustration, you can see the median nerve (white and stringy here, like spaghetti) coming from your spine and the radial nerve (behind what looks like a red tube; the “tube” is an artery). The ulnar nerve is the skinny white “piece of spaghetti” in front of the radial nerve. The large white “tube” in front of the nerves is a vein. The collarbone is cut away (so you can see more clearly) but the nerves and blood vessels pass *behind* the collarbone. You can see the possibility for pressure on the nerves and blood vessels.

The three muscles that attach to ribs in the illustration are your pectoral muscles. As you see, if those chest muscles are tight, they can also get in the act and cause pressure on your nerves and blood vessels.

If you get a well-trained massage therapist to work on your neck muscles and release the trigger points that are causing your carpal tunnel syndrome or the knots in your back, your pain will go away. (But with carpal tunnel symptoms, there may also be other muscles or issues that also need to be taken care of and there may be additional postural or muscular causes for the knots in your back.)

If you suspect this may be causing your carpal tunnel symptoms or "knotty" back, you can also release the scalenes yourself. To “release” a muscle means to normalize it, to get rid of areas of spasm or tightness, and to increase the circulation of blood and other fluids.

## Trigger points

Trigger points are hyper-irritable places in your muscles or other soft tissues (not bones) that refer, or “trigger,” pain elsewhere. Sometimes the referred pain is quite some distance from the trigger point.

## What causes scalene trigger points?

The scalene muscles can respond unfavorably to certain activities. These movements may cause trigger points to develop and trigger points will then cause symptoms like that knot in your back or carpal tunnel issues.

The following activities can cause or perpetuate scalene trigger points.

- Trauma such as falling or a car accident
- Heavy or hard pulling or lifting
- Handling a heavy animal which might pull on you
- Competitive swimming or playing tug-of-war
- Certain musical instruments or carrying large, awkward items
- Hard coughing spells or overuse of the respiratory muscles with hard breathing
- Asthma, bronchitis, emphysema, allergies or pneumonia which cause difficult breathing or coughing
- A short leg or half of your pelvis
- Scoliosis
- Shorter than average upper arms
- Limping

Scalene trigger points can also be activated by trigger points in the SCM's. A “stiff neck” caused by the muscles that lift your shoulder blades can also involve the scalenes.

## How to release your scalene muscles:

Press **gently** into the side of your neck. Place your fingers in back of (behind) your SCM's. Using the pads of your fingertips, **explore** the muscles that run on the side of your spine, or neck bones.

If you feel hard, knobby things, those are probably the edges of your vertebrae, or neck bones. *If you feel a pulse, move off it.*

**Thoughtfully and carefully** explore the length of your neck from your jaw to your collarbone. If you run into a very tender area, **gently** hold pressure there for about 12 seconds. If it doesn't "release" or become less painful, move on. You



can come back to that tender area a few more times, after letting it rest for a few minutes, to see if it will release.

If an area refers (causes) pain into the area of the "knot" on your back, or into your carpal tunnel area, you have found the trigger point that is causing your pain! Good job!

Apply gentle pressure to the trigger point with your finger pads for about 12 seconds and see if it lessens. You can repeat as needed.

As you explore the muscles on the sides of your neck, you may be surprised by all of the sensations you feel. Many of your upper body muscles refer, or cause sensations, into your head, back and arms, and even into your carpal tunnel area.

Don't be afraid to explore. It's *your* body. And, if you want to correct the postural cause that created trigger points in your scalene muscles in the first place, go to [SimpleStrengthening.com](http://SimpleStrengthening.com) and read the articles. They will help you do just that!

So, the manual (by hand) scalene release technique is simple.

- Locate areas on the side of your neck behind your SCM's, and on the inside of your collarbone, which are tender. This is where the muscles and muscle attachments (tendons) are.
- Press gently, but deeply enough so that you experience tenderness, and hold for 12 seconds.
- Move to the next tender spot and repeat. Yup. There's always more than one.
- Please note: TURN YOUR HEAD SLIGHTLY TO THE SIDE YOU WILL BE PRESSING AND TILT YOUR CHIN SLIGHTLY TOWARD YOUR COLLAR BONE ON THE SAME SIDE.

There may be a lot of tenderness and tender areas on both sides of your neck or only your symptom side. You may also discover spots on the back of your neck and head, and behind your ears. Press on as many as you can for 12 seconds each, but don't wear out your arms and fingers. You can always do just a few spots and do a few more later. You can also go back to a spot and "treat" it more times.

Muscles nearby the scalenes can also harbor trigger points and be tender and tight. It doesn't matter whether you know the names of the muscles you are

pressing on or feeling. If they are tender, they're probably tight, and tight muscles benefit from treatment.

Basically, you need to know this:

1. It's okay to touch your own neck. You are a good therapist.
2. If you feel your pulse, let go immediately. (Rarely happens.)
3. If it is tender, that is generally a good place to press.

When we massage or press on a tight muscle, it may feel a little sore or very tender. Usually the tighter it is the more tender it will be. When we press on a muscle, it gets aggravated or annoyed, so it sends more blood to the area. This creates the "release."

When more blood comes into a muscle, the muscle relaxes, because now it has more circulation. Relaxation and circulation increase are the goals of muscle work.

Use whichever hand and position is most comfortable for you to use. You may press your fingertips into the muscles of your neck on the same side or on the opposite side of your neck.

You may wrap your hand around the back of your neck, or over the front. Being flat on your back is good as it lets you relax and it often lets gravity take over some of the pressure from your fingers so you don't have to work so hard.

*Use a position which does not cause more aggravation of your symptoms.*

### **What symptoms are caused by scalene muscles?**

As you read this list, you may think: Whew! Those little muscles really can create pain in a wide area! Yes, they can. You may have only some of the symptoms, or you might have lots.

- Pain in the thumb,
- On the backside of first finger,
- On the back of the whole hand,
- On the back of the upper arm,
- On the spine side of the shoulder blade,
- Above the shoulder blade,
- On the deltoid or "cap muscle",
- On the outside of the lower arm,

- On the outside of the upper arm,
- On the chest between the armpit and breastbone.

Symptoms may also be called thoracic outlet syndrome (TOS). Thoracic outlet compression causes symptoms in the carpal tunnel area. (A “syndrome” is a collection of symptoms.) The “thoracic outlet” is that area where your nerves and blood vessel pass under your collarbone. TOS is caused by nerve compression while Carpal Tunnel Syndrome is caused by trigger points in the muscle. I’m not a doctor but I’m thinking it may be a fine line: Muscles can cause both the nerve compression and hold the trigger points. Release the muscles and everything can go back to where it’s supposed to be.

As you can see by the list, the scalene muscles affect a **lot** of the upper body. They may be responsible for many of your symptoms. *Nasty little dickens*, they can be!

These muscles are involved when you have a “forward head and shoulders” posture. That posture will aggravate your scalenes and cause them to become unhappy. Breathing difficulties like asthma will traction these muscles and cause them to become short and tight.

Since they are somewhat more difficult to treat, in my opinion, unless you recognize from the list that they may be a cause of your pain, you may wish to try to release other more surface muscles and do other therapies first. Some other muscles can also cause pain in the same areas as the scalenes.

There have been many instances of surgeons cutting the scalene muscles to try to stop referred pain in the arm and hand. This is a bad idea because:

1. It leaves the patient with a neck which is now missing a large muscle (and we need all of our muscles. That is why we have them.)
2. It leaves the patient with a visible disfigurement and scar.
3. And often it does NOT help with the symptoms. Patients still have the pain in most cases.

(Please remember: I am not a physician, nor a physical therapist. I am a massage therapist, with a lot of specialized, advanced training, who specializes in relieving soft tissue pain. I don’t give medical advice; I report.)

But the scalenes can be treated manually by hand or massage, or by stretching, and are important to treat if they are causing the knots in your back or your carpal tunnel symptoms.

## How do you know whether the scalenes are the cause?

In **Myofascial Pain & Dysfunction, The Trigger Point Manual**, Drs. Travell and Simons talk extensively about the role of the scalene muscles in carpal tunnel and similar symptoms. In order to determine whether the scalenes are causing your symptoms, they suggest the "Scalene-relief Test."

I like this test because, unlike many tests to diagnose problems, it doesn't make the symptom *worse* in order to get a positive result.

If the muscles at the front of your neck, between your neck and collar bone, feel tight when you try to press your fingers down into the area behind your collar bone that may be a clue that the scalenes are involved in your symptoms.

And, if you have *short upper arms* or *limited movement in your shoulder*, you may not be able to do the test. You **can** still release your scalene muscles, however.

Here's the test:

1. Put the backside of your painful lower arm across your forehead. Your elbow will be bent and out to the side. Your palm will be facing away from you, thumb down.
2. Lift or raise your arm and pull your shoulder **forward** to lift your collar bone off and away from the muscles and nerves that are behind it. Slide your hand in the direction your fingers are pointing. If you put the fingers from your other hand behind the collar bone on the side of the arm you are lifting and moving forward, you will feel more space there now.

If pain relief is going to occur, it will happen right away or within a few minutes.

If your pain goes away, it means your scalene muscles are causing your carpal tunnel symptoms. They are causing pressure on the nerves that come from your neck to your arm.

TIP: Look in "Categories" at <http://www.CarpalTunnelPainRelief.com> and find the "Videos" category. Scroll through the videos and you will find an article about the muscles in your neck and a short video about how to release the scalenes.

TIP: Get the "[Trigger Point Therapy Workbook](#)." It has easy directions and good pictures for releasing the scalenes and lots of other muscles that you can do **yourself**. This is not the set of expensive Trigger Point Manuals that I use, but it's a great self-help book for everyone.

### **What if the Scalene-relief Test *didn't* relieve your carpal tunnel symptoms?**

In that case, the scalene muscles are probably not involved. It may be that your symptoms are caused by cervical radiculopathy (pressure on the nerves by the bones of the neck.) It is also possible that other [trigger points](#) and muscles are causing your symptoms and this is where I'd look next.

Muscles can actually move the bones of the neck and sometimes that will cause pressure on a nerve. Other times, the bones might develop spurs which may press on nerves.

The easiest and least invasive things to try first are those that involve correcting posture or treatment or massage for the muscles.

### **Stretching treatment for your neck**

These neck muscles may be some of the most difficult to treat if it seems strange to press into your own neck or to let someone else press into your neck. Another option is stretching movements designed to help stretch these muscles.

Actually pressing into the muscles to warm and loosen them (manually releasing them) will give a *quicker* release than stretching. It always does. But stretching is sometimes the option of choice.

You can do self-stretch or have a massage therapist or physical therapist help you stretch. But here is what I strongly suggest whether you do-it-yourself or have someone else help you:

***Always, always go very s-l-o-w-l-y with stretches!***

Pay **close** attention to what is happening in your neck. Stop **immediately** if you feel any neryv sensation, or pain that feels inappropriate.

Necks are designed to move in certain ways:

1. The bones in the neck are designed to move so that we can lift our chin upward, and tilt our chin downward (saying "yes".)
2. The neck vertebrae (bones) also let us turn our head from side to side (saying "no".)
3. They glide over each other from side to side without aggravating anything (like an Egyptian dancer.)

But the vertebrae are **not** designed to bend so that your ear goes to your shoulder. Some people can do this more easily than others, but neck bones aren't built to tilt ear to shoulder.

If you have a crabby neck, and there is a good chance that you do, you want to be very careful not to let anyone do a movement that will make it even crabber. As you saw in the illustration, there are lots of nerves and blood vessels in your neck that can be compressed by an incorrect movement.

Also, if the SCM muscles are stretched, they may give you a headache. That is a pretty common response to stretching tight SCM's. That likely means they probably needed to be stretched, anyway, but there are other effective ways to treat them manually.

So, *pay very close* attention if you or someone else stretches your scalene muscles. Start gradually and slowly. They took a long time to get tight. They will take a while to get back to normal.

Sometimes a therapist will "pin" the top of your shoulder with their forearm, to stabilize it, and have you tilt your ear to your shoulder. Remember: You are in charge! *Always move slowly and thoughtfully.* Stop the move before any distress occurs.

I'm going to give you some self-stretch information, but first I want you to have some background.

Janet G. Travell MD (deceased) and David G. Simons MD have filled two large books with a ton of information about how muscles act and how and why we get into pain. If you love reading to gather useful medical information about your body, this set is for you. The two volumes were written as treatment manuals for doctors and therapists.

The book says people who have hyper-mobile joints (too loose; easily over stretched) should not use stretching over those joints. I suspect this will not be an issue with scalenes. But, if you have any question, please ask your doctor.

Here's a little story:

I met a dentist who was telling me about his various pains, and that of his patients. I gave him a lot of information about how to release various problem areas. When I referred to Travell's **Myofacial Pain and Dysfunction, the Trigger Point Manual**, he was amazed.

Why was the dentist amazed? Because, he actually *has* the set of books, but had forgotten about them! He also forgot, over the years, the ability that muscles

have to cause pain. He could hardly wait to get home and start reading up on the cause and treatment for problems he and his patients were having.

### **Self-Stretching Techniques**

Here are 3 self-stretch techniques recommended in Travell & Simons' **Myofascial Pain and Dysfunction, The Trigger Point Manual**, Vol. 1, second edition, with my simple translation.

Side-bending Neck Exercise is performed as you lie on your back. Each position passively stretches one of the three major scalene muscles. The exercise should always be done on both sides.

- Lie flat on your back.
- Tuck your hand under the buttock on the side you will be stretching. Keep your hand anchored there.
- Place your other hand over the top of your head to assist side-bending **away** from the muscle with the trigger points.
- You will be moving away from the side which has symptoms. You want to stretch the side with the pain.
- Turn your face toward the arm which is holding your head, and gently stretch.
- Turn your face toward the ceiling and stretch gently to your side, tilting in the direction of the arm which is holding your head..
- Turn your face toward the side with the pain, and stretch toward the arm which is holding your head.
- Concentrate the stretch in the directions which feel tightest. Hold each stretch for a slow count of six while inhaling and slowly exhaling to give the stretched muscles time to release.
- Between stretches, pause and breathe deeply with your lower chest and belly.

This exercise is more effective if performed after application of moist heat over the scalene muscles for 10-15 minutes. Heat helps muscles relax and a warmed muscle (whether by massage or application of heat) can stretch more easily.

The Scalene-cramp Test is another effective active scalene movement.

- Lie on your back.
- Turn your head as far as it can rotate to one side, and dip your chin down toward your shoulder.
- Return your head to neutral, and breathe deeply. Repeat in the opposite direction.

This alternately stretches and contracts the scalene muscles.

About four cycles are performed daily.

This is useful as a follow-up to the Side-bending Neck Exercise.

Gravity-assisted Release is performed while you lie on your side, with your most painful side up. Support your head with a pillow.

This is a gentle, effective, self-stretch for use at home.

- Look toward the ceiling and breathe in deeply with your lower chest and belly.
- Hold your breath and the position for 6 seconds.
- Slowly breathe out and let your cheek and neck sink back to the table.
- Repeat three times.
- Lie on your other side, and repeat if you need to stretch that side, also.

If one of these stretches feels particularly useful to you, I would suggest that's the one to use the most.

**TIP:** Remember, breathing correctly is *very* important. Shallow breathing, high in the chest, causes the scalenes to become tight and traction down. Practice breathing with your whole body, belly, lower chest and upper chest.



## Massage therapy

Trigger Point Therapy & Soft-tissue Release can be done by a skilled massage or muscular therapist or by you, yourself.

Trigger points from your scalene muscles can cause trigger points in your forearm so the muscles in your whole arm need to be treated by massage also if you're having carpal tunnel symptoms.

If you have knots in your back, most likely there are other upper body muscles involved that should also be addressed. Additionally, your posture will need to be assessed to see whether you are "tilting."

You may already have a reduction of strength due to your symptoms. If you can't do this yourself, [find a good therapist](#). Remember to ask them if they do this type of work ("scalene release.")

The appropriate massage therapist will:

1. Understand trigger points. A "trigger point" is not just a tight muscle or part of a muscle. A trigger point is a specific part or area of soft tissue that causes pain or symptoms elsewhere when it is pressed on (and even when it's not being pressed on!) If an area "won't" release, that generally means it CAN'T release.
2. *Not* work *only* where it hurts (you can ask them where they will work for your problem.) He or she will look for the cause and not just blast away on a knot that can't release.
3. Know how to treat the scalene muscles. This is advanced training although some massage schools teach it in their basic medical massage program. Listen closely when you interview your potential massage therapist to see whether his or her answers sound right or logical to you.
4. Understand the relationship between all of your muscles and your pain. All of your parts are attached and relate to each other.

Many, many massage therapists do only relaxation massage, which can be great... except that's not what you need most at this time. But, if you can afford the time and money for relaxation massage, it will help you feel better in other ways. Not only does massage feel good, it boosts your immune system, too.

## Conclusion of The Scalene Report

If you can't do large, full range-of-movement yet, definitely start doing as many small, new movements as you can to begin to regain full, free movement and

decrease your pain. Doing little movements helps your joints remember what they used to do. You used to use ALL of your 600+ muscles when you were a child. Now, most of use only the same 60 or so muscles every day. ☹ No wonder our bodies get unhappy and we get symptoms!

Here are a just a few movements:

- Roll your shoulders up and back,
- squeeze your shoulder blades toward your spine,
- lie on a swim noodle lengthwise under your spine (let gravity help you,)
- move your arms in ways which use all of your muscles—in all directions-- not just the same few movements you usually use.
- Do the cat and camel stretches. Get your spine moving.

Remember: ***Always move thoughtfully and pay attention to what your body is telling you.***

All of your body parts are attached to each other, and as one part begins to release, another may react in an unfavorable way. Perhaps new trigger points will show up, or the opposing (opposite) muscles may go into contraction.

By moving and treating **large** areas of our bodies, and **all sides** of our bodies, rather than just pinpointing treatment on areas of symptoms, we have a much better chance for recuperation.

And, that's a good thing.

**“Because You Deserve to Feel Better!”**

More information is always available at:

<http://www.SimplePainRelief.com>

<http://www.SimpleStrengthening.com> and

<http://www.CarpalTunnelPainRelief.com>