

## Scalene Salvation



Vivian had pain in the back of her right shoulder blade and episodes of ache in the right forearm. The symptoms had been present for over a year but only recently began to limit her ability to work and exercise. For the last two months she had been experiencing numbness in her right hand. Vivian worked in a child day care center and looked after infants and toddlers. The pain had become so strong that she was unable to lift the children with her right arm. Treatment with anti-inflammatory and muscle relaxer medications had not helped. Imaging studies of her neck and shoulder were normal. Vivian arrived at our clinic in urgent need of some relief.

Upon initial evaluation, Vivian had normal neck and right shoulder range of motion. No pain was recreated with repeated movement. When we asked Vivian to turn her head to the right and lower her chin, the pain in her right shoulder blade was produced. Palpation of muscles on the right side of her neck recreated pain in the forearm. Cradling a twelve pound sandbag in her right arm brought on the numbness in her right hand. Vivian's problem was over activity and trigger points in neck muscle called the scalenes.

### Anatomy

The scalenes are a series of three muscles that travel from the sides of your cervical vertebrae down to the first, second, and sometimes third rib. They lie below the superficial muscle of the neck and take some skill to palpate. When these muscles become irritated they refer pain into the shoulder blade and down the arm. The primary drivers of scalene irritation are forward flexed cervical posture, inappropriate respiration patterns, repetitive single-side work activity, and weakness in the deep cervical stabilizers.

### Posture

The sustained head down posture is part of our plugged in, hyper connected lifestyle. Until Apple

comes out with the iPhone 28 retinal chip implant, we will continue to treat younger and younger patients with neck pain. This prolonged aberrant posture permits the scalenes to become tight and painful.

### Breathing

Many people do not breathe properly and this overloads the scalene muscles. They hold the abdominal muscles tight and use the accessory respiratory muscles that travel from the cervical spine to the rib cage to inhale and exhale. Watch a baby breathe- the abdomen expands when they inhale and sinks back when they exhale. That is normal respiration. During inhalation, the diaphragm contracts and presses downward to expand the lungs and draw in air. The abdominal muscles relax and the belly distends. Many people keep the abdominal muscles in a constant state of contraction. This inhibits lung filling and forces us to use the accessory muscles of respiration (scalene muscles) to pull in air.

### Asymmetrical Activity

Repetitive asymmetrical tasks create scalene muscle problems. Occupations and recreational activities that keep the head turned, load one arm, or tug on one side of the spine can lead to overuse of the scalene muscles. I have treated baseball players, tennis players, machinists, and musicians with severe scalene muscle problems on one side of their neck.

### Weak Cervical Stabilizers

Physical therapists divide the neck muscles into two groups: the deep cervical muscles and the global cervical muscles. The deep cervical muscles run adjacent to the cervical vertebrae and function to hold these blocks of bone in a stable position. They cross one or two vertebrae and continually work at low levels to hold you upright with the head balanced over the torso. Deep cervical muscles limit damaging shear stress-- lateral / rotation sliding.

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When you suffer an injury to the cervical spine, it is the deep cervical muscles that are traumatized and become dysfunctional. Many chronic neck pain patients have very limited endurance and control of the deep cervical muscles. The scalenes are global cervical muscles that cross many cervical vertebral segments. They are dynamic muscles that move the neck, head, and shoulders. When global muscles contract, they produce a compressive force on the cervical spine.

### Scalene-Cramp Test

A simple do-it-yourself test to evaluate if your scalene muscles are causing the pain problems is the scalene-cramp test. Sit up straight and turn the head toward the affected side. Flex the neck and tuck the chin into the hollow just behind the clavicle. Hold for ten seconds. This position maximally shortens the scalene muscles and aggravates trigger points. Pain in the shoulder blade, arm, or hand is a positive test.

### Bad News: Scalene Muscles and Neurovascular Compression

The nerves, arteries, and veins that travel down the arm pass between the scalene muscles. The space between the scalene muscles is fairly small and some people have an anatomical layout that makes any tightening of the scalene muscles a problem. Compression of the large nerves and blood vessels that pass between the scalenes can create pain, numbness, swelling, and pins and needles in the arm. Neurovascular compression needs to be treated in physical therapy.

Following are three of the scalene muscle recovery drills we use in physical therapy. Watch the attached video for a demonstration.

### Scalene Stretch

Lay supine with as little pillow as necessary. Place the right hand under your right hip. Tip the head and keep the nose pointed straight ahead. Place the left hand over the top and onto the right side of the head. Gently pull the head to the left with the left hand. Do not get too aggressive- less is more. Try to avoid pushing down on the top of the head. Hold the low level stretch for five to ten seconds and then release. Perform the same stretch with the nose turned to the right and then to the left.

### Respiration Restoration

Lay on a firm mattress or the floor. Bend the knees or elevate the legs on pillows if it makes you feel more relaxed. Place one hand on your belly and one hand on your chest. Relax your upper body and neck as much as possible. Inhale slowly for six counts, and as you inhale, your abdomen should expand outward.



You should feel the hand on your belly rise. Hold the inhalation for a count of four and then exhale in a controlled fashion for a count of six. You

should feel the hand on your abdomen lower as the abdomen falls. The hand on your chest should stay still during the entire process. The feedback from the hands helps you monitor proper respiratory control. Initially, you may only be able to perform two or three of these long steady breaths in a row. Rest as necessary and work up to a total of thirty, full abdominal breaths.

### Cervical Stabilizer Retraining

Lay supine on a firm surface. We use a treatment table or exercise mat in the clinic. Depending on your level of mobility you may require a folded towel under the back of your head. Gently tuck the chin and retract the cervical spine. Hold the retraction and lift the back of the head ¼ inch off the table. Hold that lifted position for 5 seconds. Lower back down, rest for ten seconds and repeat another 5 second hold. Perform five repetitions and gradually increase the duration of the hold. These sets and repetitions are only suggestions. Many patients can only hold the head lifted for two seconds and fatigue after three repetitions.

Posture correction and modification of Vivian's work activity immediately reduced her pain symptoms. She started on daily scalene muscle stretches and worked on strengthening her cervical stabilizers. After four sessions of manual therapy, the pain had resolved and the scalene-cramp test no longer created pain. Vivian was able to return to all work duties and has remained symptom-free.

*-Michael S. O'Hara, P.T., OCS, CSCS*

See Mike's video for explanation and demonstration of the exercises in this article.



[https://youtu.be/fVLF\\_k-dBHg](https://youtu.be/fVLF_k-dBHg)

## Defying the Odds

### *Using Exercise to Fight Osteoporosis after Age 50*

Ten million people in the United States suffer from osteoporosis. An additional 18 million are at risk for developing it. 34 million are at risk for developing osteopenia, or low bone mass. These ailments lead to higher incidents of fractures which can then lead to lack of physical activity and a quick decline in health and fitness in individuals.

When it comes to preventing osteoporosis, our diet plays a vital role in providing the needed nutrients to build and maintain strong bones. It should be noted that over half of our bone mass is accumulated during adolescence (12.5 years for girls, and 14 years for boys) with peak bone mass being achieved in our mid 20's, according to the medical community. Many doctors tell their older patients that it is nearly impossible beyond the age of 50 to increase bone density and are quick to recommend various supplements, and often-times, medication.

Here at Fenton Fitness, we have seen our clients repeatedly defy the odds and demonstrate that they are still capable of increasing bone density well beyond the age of 50 when the appropriate training and nutrition programs are implemented. Following are several success stories from members who have incorporated strength training into their programs to fight the good fight against osteoporosis:

**Carol Cornillie**, age 59, member since 2014, two time breast cancer survivor

#### **FFAC routine:**

4 days/week —Semi-Private Training 1-2x/week plus Team Training classes



"My bone density increased overall! This is really great considering the medication I have to take. WOW! I am forever a fan of Fenton Fitness!"

Carol was prescribed a 5 year maintenance drug after her last

round of chemo. Because it reduces the level of estrogen in the body, she was told to expect a marked decrease in bone density. Already at risk due to her tall,

lean body type, Carol had some real concerns. She was working out 4 days a week at the gym, but she wanted to increase her resistance training and worked with Jeff to make proper nutrition choices. Her latest Bone Mineral Analysis reported good news: a 5.7% increase in the lumbar spine and a 2.5% increase in her femurs.

**Jan Como**, age 81 in October, member since 2009, breast cancer survivor

#### **FFAC routine:**



3 days/week in Program Design

Jan's bone mineral density test reported an improvement of 2.6% per year. While her latest report did show her right hip to be in osteopenic range, she continues to either maintain or increase

bone density in other areas of her body.

"Coming to Fenton Fitness on a consistent basis, eating healthy, and taking my vitamins (especially calcium) is paying off!" said Jan. "You have to do the exercise. It has to become a habit as much as brushing and flossing your teeth. I feel proud of my accomplishments. I'm doing exactly what I need to do by coming to Fenton Fitness and sticking to my program."

*To find out how Fenton Fitness can help you prevent osteoporosis, contact us at 810-750-0351 or email [jeff@fentonfitness.com](mailto:jeff@fentonfitness.com).*

## Partner Challenge



Remember the buddy system? Evidence shows that partnering up to get in shape can make your workouts more fun, keep you motivated, and boost workout intensity. Grab your friend, spouse, co-worker, son, or daughter and try our Partner Challenge and put some friendly competition into your workouts.

You and your partner will complete 12 weeks of training. We'll track your performance on several key factors. The partner with the most overall improvement wins—bragging rights and gift certificates to local businesses. The top three performers win free training packages.

### Included:

- 24 Semi-Private Training Sessions (must be done together)
- 6 Body composition checks with nutritional adjustments
- 12 weeks of unlimited access to Team Training workouts
- A personalized program to follow on your own

### Cost:

\$799.00 per pair (current Semi-Private members pay only \$399.00)

### How It Works:

- You and your partner follow your training program
- We track body fat percentage, lean mass, fat mass, and waist circumference
- We also track your performance on sled push, push ups, pull ups, and goblet split squats
- The partner with the best overall performance wins a gift certificate to a local business
- Overall winners get the following: **1st place:** 30 days of unlimited Semi-Private training  
**2nd place:** 4 Semi-Private training sessions (once per week for four consecutive weeks)  
**3rd place:** 6 weeks of nutrition coaching

# Black Friday Sale!

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**Friday, November 24th  
5:30am-8:00pm**

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All training services including annual membership upgrades

**Buy one, get one free**

30 day trial membership (\$59.00 savings, \$400 value)

**10% off**

Winter Golf Training Program or Partner Challenge