MUSCLE STRAINS & SPRAINS

Facilitator’s Guide

Preventive Stretching
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Course Overview

Strains and sprains result in millions of dollars each year in workers’ compensation costs, lost productivity, and employee absenteeism.

While strains and sprains are not life threatening, they are fairly common injuries that can have a cumulative effect on your bottom line.

They can also have a significant impact on your employees’ quality of life. While these types of injuries may seem mild and are usually temporary, their long-term effects are not. Because of this, strain and sprain injuries can become chronic or recurrent.

The Strains & Sprains program will teach your employees to:

• Understand what strains & sprains are
• Identify their causes and risk factors
• Use preventive measures to reduce their chances of suffering a strain & sprain injury.
Training Materials

Collect all necessary materials and supplies before training begins. Here are some suggested materials and supplies.

- A training location that is free of distractions, has good lighting and a comfortable temperature.
- Desks and chairs arranged so that everyone will be able to see the viewing screen, the facilitator, and each other.
- The video, a VCR, and a TV with a remote. Make sure the video is rewound.
- An employee handbook and pen/pencil for each trainee. Each handbook includes a quiz at the back which can be used to test comprehension and document training.
- Other supplies and equipment you may need – blackboard, chalk, paper, handouts, transparencies, overhead projector, markers, notepads, etc.
- Additional information, such as a copy of the regulation or other reference tools.

Preparation

A successful presentation requires preparation and planning. Give yourself plenty of days before the training session to get organized.

- Locate and schedule the training site as soon as possible.
- Notify trainees of the training date and time, the training schedule, and proper dress.
- Obtain all necessary equipment and supplies.
- Make sure you know how to operate the TV, VCR, and other equipment. Check that it is working properly and replace or repair any damaged equipment.
- Preview the videotape. Note any key points you want to expand on in your training.
- Review all training materials, including the facilitator guide, handouts, or any other reference materials.
- Prepare your presentation, including a lesson plan or outline of the training. Include the training goals and objectives. Some presentation guidelines are included on the next page. A sample lesson plan has been included on page 1-d of this facilitator guide.
- A day or so before conducting the training session, you may want to have participants take the quiz as a pre-test. The results of this test can help you to determine weak areas to focus on during the training session.
In today’s busy work climate, it can be difficult to find the time needed for training. Because of this, it is important that when you do schedule training sessions you are organized and well prepared to use your time efficiently. Whether you use Summit’s suggested Lesson Plan or not, it is important to have a lesson plan prepared that you can implement with relative ease. This ensures that time spent in training is productive and beneficial for everyone.

Organize Training Time Efficiently.

How you present the training course can have a great impact on learning. By following these simple presentation guidelines and keeping your objectives in mind, you can effectively and efficiently get the most out of your training session.
Six-Step Lesson Plan

The key to a successful training program is being well organized and knowledgeable about your subject. As a qualified trainer, your job is to effectively communicate a lot of information in an organized manner. By preparing a lesson plan, you can ensure that each minute of the training session is productive.

1. Introduce Yourself & the Training Topic

Research proves that audience retention is higher when programs are given a brief introduction before viewing them. Prepare an introduction which identifies: reasons for the training, training objectives, desired outcomes, and how the training will be beneficial.

2. Provide an Overview of the Training Session

• Topics covered in training
• When a Q&A period will be conducted
• Any training activities (demonstrations, group activities, etc.)
• When the quiz will be given
4. Discussion Topics and Exercises

You may wish to include discussion topics and exercises in your training session. Some key points or exercises to include might be:

- Identify types of movements, job tasks or activities that place excessive force or stress on the body.
- Then identify better ways to perform the task and/or types of mechanical assistance to make the job easier.
- Have your audience share stories of injuries. Talk about how the injuries could have been prevented.
- Demonstrate stretching exercises employees can perform specific to their job tasks to prevent strains and sprains. Have them follow along with you.

5. Questions and Answers

Provide for a Q&A session to answer any questions. It may be necessary to review some of the material when providing answers. The employee handbook, equipment manuals and other reference tools can be helpful.

6. Testing

Each employee handbook includes a quiz at the back which can be used to test comprehension and document employee training. Answers to the quiz are provided on a separate page.
## Frequently Asked Questions

### What are strains and sprains?

A strain, often called a “pulled muscle” or a “charley horse,” occurs when a muscle or muscle tendon is overstretched or torn. Strains are not as serious as sprains.

A sprain occurs when a ligament is overstretched or torn. Ankles, wrists, knees, and fingers are common targets of sprains.

### What are the symptoms?

Symptoms common to both strains and sprains include pain, swelling, inflammation, bruising, and a loss of normal function.

The severity of symptoms depend on the degree of injury. Other symptoms of strains include muscle spasm, cramping, and muscle weakness.

### What causes strains & sprains?

A strain often happens when you don’t warm up the muscles and tendons before physical activity or when you move your body the wrong way. They are usually caused by overstretching or overuse of muscles and tendons.

A sprain occurs when a joint is knocked out of position and the supporting ligaments become overstretched and torn. This can happen during sudden twisting, tremendous force and pressure, a blow to the body, or a fall.

### How serious are strain & sprain injuries?

While they aren’t life threatening, they can affect your quality of life.

It is important to know that injured it heals by forming scar tissue. Because this is not as flexible or strong as the original tissue, the injury could re-occur or become chronic.

### What can I do to prevent injury?

Prevention begins by avoiding the risk factors that can increase your risk. These include movements that cause excessive force, repetition, awkward posture, or inadequate rest. Other factors to avoid include: poor physical condition, being overweight, bad nutrition, lack of sleep, not getting enough exercise, and not warming up before and after physical activity.
A surprising number of workers suffer from strain and sprain injuries each year. While they are not life threatening, the pain and discomfort can affect the quality of your life and ability to do your job.

Misusing or not properly preparing your body for physical activity can lead to painful and disabling strains and sprains.

A strain or sprain can limit the activities you perform, increase your stress, and adversely affect your happiness.

Good physical fitness and proper stretching can help you avoid strains and sprains. Not only do you feel better, but you are able to respond more effectively to physical activity.

Good nutrition, physical fitness and proper rest are key elements in the prevention of strains and sprains.
Strains and sprains are injuries that affect muscles, tendons and ligaments.

**Type of Injury**

A **strain**, often called a “pulled muscle” or a “charley horse,” occurs when a muscle or muscle tendon is overstretched or torn. The tendons connect muscles to bones. Strains are not as serious as sprains.

A **sprain** occurs when a ligament is overstretched or torn. Ligaments connect bone to bone, and stabilize and support the body’s joints. Ankles, wrists, knees, and fingers are common targets of sprains.
Symptoms  Symptoms common to both strains and sprains include pain, swelling, inflammation, bruising, and a loss of normal function. The severity of symptoms depend on the degree of injury.

Other symptoms of strains include muscle spasm, cramping, and muscle weakness.

Victims of sprains will often feel a tear or pop in the joint when the injury occurs.

It is important to know that when a tendon or ligament is injured it heals by forming scar tissue.

Because this is not as flexible or strong as the original tissue, the injury could re-occur or become chronic.

KEY POINT

Once a tendon or ligament has been injured, it is weaker and more susceptible to re-injury.
Certain activities and physical factors can increase your risk of suffering strain and sprain injuries.

**Common Causes**

A **strain** often happens when you don’t warm up the muscles and tendons before physical activity or when you move your body the wrong way. They are usually caused by overstretching or overuse of muscles and tendons.

The injury can range from a small tear in the muscle to a complete separation of the muscle tendon. A common cause of back strains is lifting without bending at the knees.

A **sprain** occurs when a joint is knocked out of position and the supporting ligaments become overstretched and torn. This can happen during sudden twisting, tremendous force and pressure, a blow to the body, or a fall.

The injury can range from an overstretched to a ruptured ligament. A common sprain injury occurs when the ankle is twisted.
Activities that can contribute to strains and sprains include those that contain one or more of the following types of movements or postures:

- excessive force
- repetitive movement
- poor or awkward posture
- inadequate rest.

While certain types of movements and activities can cause sprains and strains, other risk factors that can contribute to your chances of being injured include:

- poor physical condition
- exceeding your limits
- being overweight
- having a history of strains and sprains
- not warming up before physical activity.
When a strain or sprain does happen, the proper treatment can minimize the pain and speed recovery. The treatment required will depend on the severity of the injury.

Treat Injuries with R.I.C.E.  
Mild strains and sprains can be treated by following the R.I.C.E. formula:
- **Rest** the injury.
- **Apply Ice** packs immediately for 10-15 minutes every hour or so. Use ice packs for the first 2-3 days after the injury.
- **Compress** the injury by wrapping it in an elastic bandage.
- **Elevate** the injured part so it is higher than your heart.

Severe strains and sprains require medical treatment. You should see a medical professional immediately if you experience severe pain or swelling, numbness, or inability to walk or use the injured body part.

**KEY POINT**

A strain or sprain that is severe should be treated by a medical professional.
Your body requires proper care and maintenance to perform at its best. This includes good nutrition, good physical fitness and plenty of rest.

Good physical fitness and regular exercise will not only make you feel better, but it also prevents strains and sprains. Muscles that are weak and out of shape tend to injure more easily when subjected to strain.
Stronger muscles do a better job of supporting the body to prevent strain and sprain injuries.

Eating a well-balanced diet gives your muscles the nutrition they need to grow and stay strong. Get plenty of rest each night. Allow muscles to rest between exertions during strenuous activity. This prevents fatigue and overstretching.

Posture Any form of movement places some stress on the body. The posture that puts the least amount of stress on the body is called the neutral position. This includes:

- Arms below shoulder level
- Forearms a natural extension of the wrist
- The back maintained in its natural “S” shape
The right equipment and clothing can not only help prevent injury, but can make your task or activity easier. This includes:

- wearing properly fitting shoes that provide adequate support
- using mechanical assistance whenever possible
- selecting the proper tool to eliminate the need for excessive force.
Stretches

One of the most effective measures to prevent strains and sprains is stretching. Stretching should be done as a warm-up before performing strenuous tasks and as a cool-down after strenuous activity to prevent muscle cramps. Stretching can be done anytime and any place, but it is best to do after a brief walk that increases blood circulation.

- Relax before each stretch.
- Breathe in a slow, normal rhythm.
- Don’t hold your breath during the stretch.
- Avoid bouncing. This tightens the muscles and can have an adverse effect.
- There should be no pain with the stretch.
- Hold each stretch for a count of 10.
- Maintain proper body alignment and posture while stretching.
- When both feet are on the floor, keep your weight evenly distributed and your knees relaxed—not locked.
- If support is recommended, use a wall, doorway or other stable item.
Stretches

Stretching before and after physical activity prevents injuries. The following 11 stretches can be performed as a daily warm-up or at the completion of a task for the affected muscle group.

Arms Stretch
Overhead

Stand with your feet shoulder width apart and weight evenly distributed. Keep your knees relaxed and your body in proper alignment. With the palm of your right hand facing upward, bring your right arm up straight over your head and slightly back. After a count of ten, switch to your left hand. Remember to breathe during the stretch and always look forward. Interlace your fingers and repeat this motion with both arms.
Arms Stretch to Front  Stand with your feet shoulder width apart, weight evenly distributed, and knees relaxed. Interlace your fingers in front of you with the palms facing out and arms at shoulder height parallel to the floor. Press your palms forward and hold for a count of ten. Repeat the stretch with your palms facing in and move your chin toward your chest while rounding your back.

Arms Lift From Behind  Stand with your knees relaxed and the back in its natural “S” shape. Interlace your fingers behind your back. Slowly try to lift your arms so they are parallel to the floor. Lower your chin if it allows you to stretch more. Hold for a count of ten.
Head Tilt  Stand with your feet shoulder width apart. Slowly bend your neck to bring the right ear toward your shoulder. Do not try to move the shoulder to meet the ear. Hold for a count of ten, and then raise the head to the neutral position. Repeat this on the left side.

Back of Arms  Stand with your feet shoulder width apart, weight evenly distributed, and knees relaxed. Bring your arms up and bend them at the elbow behind your head. Grab your left elbow with your right hand. Gently pull the elbow downward until you feel a slight tension. The head should be slightly forward. Hold for a count of ten. Switch arms and repeat.
Lean Back

Stand with your feet slightly wider than shoulder width apart, weight evenly distributed, and the knees relaxed. Place your palms on your lower back, just above the hips, with your fingers pointing downward. While keeping your chin parallel to the floor, lean backwards from the lower back until you feel a slight tension. Hold for a count of ten. Remember to breathe during this stretch.

Trunk Rotator

Stand with your back about a foot away from the wall, your feet shoulder width apart, weight evenly distributed, and knees relaxed. Slowly twist at the waist until you feel tension in the lower back. Place your palms on the wall behind you at chest height, and hold for a count of ten. Do not move your feet. The head and shoulders should stay aligned at all times. Return to the front, and repeat the stretch on the other side.
Stretches (continued)

**Side Lean**

Stand with your left side to the wall, feet shoulder width apart, weight evenly distributed, and knees relaxed. Place your left hand on the wall at about waist height. Reach overhead with your right arm and touch the wall. Hold for a count of ten. Repeat with the other side.

**Chest Stretch**

While facing the wall, place your left hand on the wall at about shoulder height. Turn your body away from the wall until you feel a slight tension in the chest. Your back should be to the wall now. Keep your head and shoulders aligned. Hold for a count of ten and repeat with the other arm.

This stretch can also be performed with both arms at the same time in a doorway or with two stationary objects. Make sure your feet remain directly under your hips and shoulders.
**Wall Walk**  Stand facing the wall at arms width with your feet shoulder width apart, weight evenly distributed, and knees relaxed. Place the palms of your hands on the wall and slowly walk them down until you feel slight tension in the lower back and back of the thighs. Hold for a count of ten. Slowly walk the hands back up so you are in a standing position.

This stretch can also be done by placing one leg on an elevated surface (such as a chair) while keeping the other knee slightly bent. Hold for a count of ten. Repeat with the other leg.
Stand next to a stable object. Hold the top of your left foot, between the ankle and toes, with your right hand. Use your left hand to hold onto a stable object, such as a post or wall, for support. Gently pull the heel toward your buttocks and hold for a count of ten. Repeat with the other foot.

**Thigh Stretch**

While standing, place your left foot slightly in front of the right with the heel down and toes pointing up. Hold for a count of ten. Repeat with the right foot.

**Lower Leg Stretch**

While standing, place your left foot slightly in front of the right with the heel down and toes pointing up. Hold for a count of ten. Repeat with the right foot.
To review your knowledge of Strains & Sprains, answer the questions below.

1. A sprain occurs when a _________ is overstretched or pulled.
   A. muscle
   B. tendon
   C. ligament

2. A strain is more serious than a sprain.
   A. True    B. False

3. Which of the following are symptoms of strains and sprains? Select all that apply.
   A. Pain
   B. Swelling
   C. Inflammation
   D. Bruising
   E. Loss of normal function

4. When an injured tendon or ligament heals, it is not as strong or flexible as it used to be.
   A. True    B. False

5. Which of the following are risk factors that can contribute to injury? Select all that apply.
   A. Using excessive force
   B. Proper posture
   C. Poor physical condition
   D. Not warming up before activity
   E. Repetitive movement

6. For mild strains and sprains, you should apply ice for 10-15 minutes every hour for the first 2 to 3 days after the injury.
   A. True    B. False
7. What can you do to prevent strains and sprains? Select all that apply.
   A. Eat right and get plenty of exercise & rest
   B. Use proper posture
   C. Bend at the waist when picking up objects
   D. Use the right tools and equipment
   E. Stretch

8. Proper posture includes keeping the arms below shoulder level, the forearms a natural extension of the wrist, and the back...
   A. as straight as possible.
   B. maintained in its natural “S” shape.
   C. None of the above

9. You should only stretch before physical activity.
   A. True     B. False

10. You should hold each stretch for a count of 10 and avoid bouncing.
    A. True     B. False
1. C ligament
2. B False
3. A Pain
   B Swelling
   C Inflammation
   D Bruising
   E Loss of normal function
4. A True
5. A Using excessive force
   C Poor physical condition
   D Not warming up before activity
   E Repetitive movement
6. A True
7. A Eat right and get plenty of exercise & rest
   B Use proper posture
   D Use the right tools and equipment
   E Stretch
8. B maintained in its natural “S” shape.
9. B False
10. A True