

# How to prevent musculoskeletal injuries



## A guide for forest workers

**Northwest Forest Worker Center  
(Centro de los Trabajadores Forestales del Noroeste)**



## **About this training guide**

### **Introduction for the community health worker**

This guide is your tool for teaching forest workers and their families about the risk of developing musculoskeletal injuries from forest work, and at the same time, teach them about the actions that the worker can take to prevent them. The information has been developed for Oregon workers, but it is useful, to a large degree, for forest workers throughout the country. In order to teach this session, hold the guide in a manner which allows the workers to see the illustrations or images. Visible to you will be the instructions about what you should say and do during the workshop session.

### **The instructions for the community health worker are in red.**

The answers are in a shaded box.

Allow the participants a chance to respond with what they know and then add any missing information and clarify any inaccuracies as needed.

### **Learning objectives for this workshop**

By the end of the training, the participants will know what they can do to reduce their risk of developing a musculoskeletal injury from their work, and they will also know what rights they have in this area and the options which are open to them. The workers will know:

- how to recognize the risk factors for the development of musculoskeletal injuries;
- that every worker has the right to improve their work practices in order to avoid exposure to the risk factors that lead to musculoskeletal injuries;
- how to recognize the first symptoms of a musculoskeletal injury;
- the right of a worker to present a formal complaint to a government entity without suffering retaliation;
- that the worker is not alone.

### **Necessary materials for this training session**

You will need white paper and pens or pencils (in case the participants want to take notes).

### **Length of the session**

The total length of this training session is approximately 2 hours. These are the main activities with an estimate of how long each one will take.

Welcome, pre-test questions and introduction	15 minutes
Description of musculoskeletal injuries	10 minutes
How to differentiate between muscle soreness and a musculoskeletal injury	10 minutes
Risk factors: what are they for forest work?	40 minutes
If you need help or support, ask for it. You're not alone!!	10 minutes
Your right to file a complaint	10 minutes
Review	10 minutes
Conclusions & Evaluation	15 minutes

# Protect yourself from musculoskeletal injuries



**An occupational safety and health guide developed by  
the Northwest Forest Worker Center**

This training guide was developed by the Northwest Forest Worker Center in 2019 through funding from the Oregon Occupational Health & Safety Division, Department of Consumer and Business Services.

**Welcome the participants, including the family members, and introduce yourself. Explain to them that while the focus of the training is going to be on the things that forest workers can do to keep themselves safe, we also know that the family is an important resource and a source of support to help them stay safe.**

**Say the following:** Today we are going to talk about how to prevent musculoskeletal injuries while doing forest work. I am going to give you a lot of information, but I will also ask you questions about your experiences. We will begin with introductions. **Ask the participants to introduce themselves, or do an icebreaker activity that encourages the participants to relax and begin to get to know each other.**

**Say the following:** Forest work, including planting trees, piling brush, thinning with a chainsaw, and fighting forest fires, all require physical force, movements repeated hundreds or thousands of times each day, and a fast work pace. In order to get the job done, the worker often has to put his body in an uncomfortable position, exposing himself to higher risks and to more fatigue. Furthermore, since the worker is in the out-of-doors, he is affected by the weather, by the steepness of the terrain, and the degree to which his footing is across unstable ground. These factors combined mean that the forest worker is at a high level of risk of developing injuries which affect his spinal column, neck, waist, knees, shoulders, arms, wrists, and hands. These injuries, which begin as a pain felt during the hours that the worker is engaged in the task, and become worse until the pain is felt throughout the hours that the worker is resting, are known as musculoskeletal injuries, and they can affect the worker in the short or long term. It is important to realize that these injuries do not just affect the worker, but rather, affect his whole family in terms of his income and relationships with his loved ones. Today we are going to talk about some of these injuries and the actions that the worker can take to prevent them.

(Now explain that you know how dangerous forest work can be because your husband (or other family member) is a forest worker. Then give an example of someone in your family or a friend that has suffered a musculoskeletal injury.)

**Ask:** How many of you have felt or have known someone who has felt pain in their knees, lower back, fingers, or hands, while doing forest work?

**Choose someone who raised their hand and ask them to share their experience. Ask them if they have ever had a pain that lasted for several days, and if so, what happened. Ask the questions that you need to in order to get the person to tell the story, but make sure the sharing is brief. When they finish sharing, thank them for sharing their experience.**

**Say the following:** Before we begin, I would like to ask you some questions about whether or not you have suffered a musculoskeletal injury. This is not a quiz. It is just going to help us know how well we are doing with our trainings. **Ask the “pre-test” questions for this unit.**



# Protect yourself from musculoskeletal injuries



**Say the following:** Now we are going to talk about pain which is common in forest work.

**Ask:** Which forest work activities cause the worker to feel pain like this?

Ask them which photos represent the parts of the body that ache from planting trees. Continue in the same way, asking about which photos correspond to brush piling, chainsaw work, fighting forest fires, and other common jobs in the forest services industry.

Based on the information that has been shared, draw out the conclusion from the participants, that this pain is not due to blows to the body part nor due to open wounds. For example, if they have shared that walking in steep areas makes the knees ache, repeat this detail and ask them, what causes the pain?

**Ask:** These pains are caused by blows or wounds, or what exactly?

Cause of the pain: Musculoskeletal injuries in forest work involve pain that is not due to wounds or blows to the skin. They are pains caused by the use and wear and tear on the body from doing the work.

# ¿Which forest work activities cause pain in these areas?

1:



2:



3:



4:



5:



6:



**Ask:** What is a musculoskeletal disorder? Does anyone know?

**Allow someone to respond.**

**Say:** Musculoskeletal disorders are injuries that affect the soft tissues of the locomotor system of bones, ligaments, muscles, tendons, nerves and joints, and blood vessels. These injuries can appear in any body region although they are located more frequently in:

The back  
The shoulders  
The elbows  
The wrists  
The knees  
The feet  
The legs

**Ask:** Can you name some examples of musculoskeletal disorders?

**Allow the workers to respond.**

**Some examples:**

- Lumbago:  
Pain and inflammation in the lower part of the back.
- Herniated disk:  
Displacement of intervertebral discs and compression of nerve roots.
- Tendonitis of the wrist:  
Inflammation of the muscles and tendons that provide stability to the shoulder.
- Cervicalgia:  
Pain and inflammation of the muscles and tendons located in the back of the neck.
- Rotator cuff:  
Inflammation of the muscles and tendons that provide stability to the shoulder.



# What is a musculoskeletal injury?



## Possible symptoms in the affected part of the body

**Say the following:** These are some examples of the symptoms of a musculoskeletal injury.

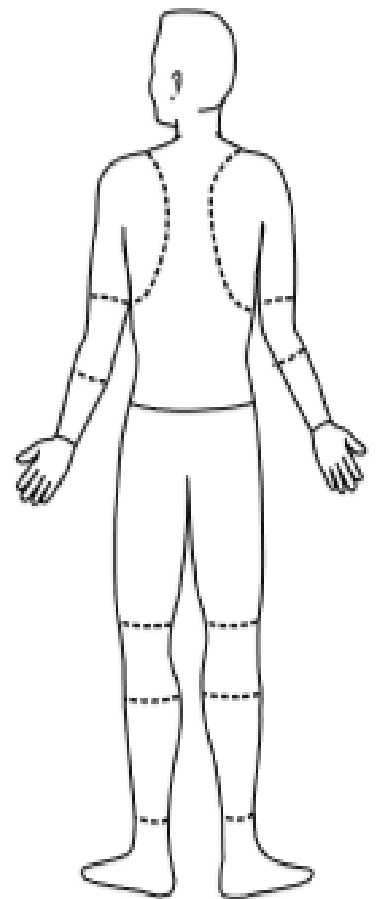
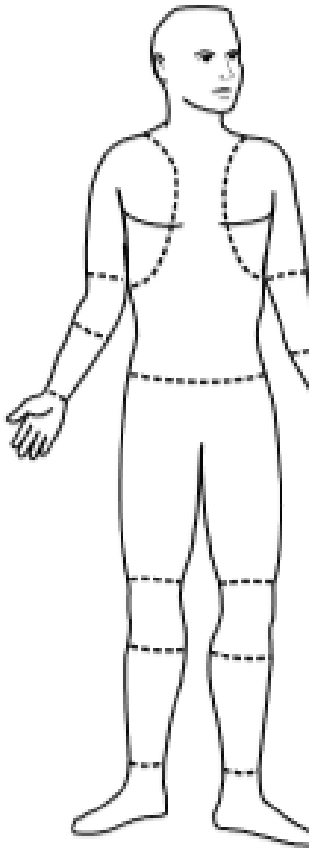
Point to the images and name the symptoms.

- Pain
- Body part falls asleep
- Loss of color, oftentimes in the tips of the fingers and toes
- Weakness- not having the same strength as before
- Inflammation
- Burning sensation
- Rigidity
- Tingling
- Muscle cramps

**EXERCISE:** Give the participants a copy of the body map. Ask them to color in the areas where they feel pain which could be due to a musculoskeletal injury.

# Symptoms in the affected body part

- Pain
- Body part goes to sleep
- Weakness
- Inflammation
- Burning sensation
- Loss of color in the affected part (fingers)
- Rigidity
- Tingling
- Muscle cramps
- Fingers or toes go to sleep



# Muscle fatigue vs. musculoskeletal injuries

**Say:** Let's compare muscle fatigue and musculoskeletal injuries. What is the difference?

## Muscle fatigue

- Temporary pain
- Appears and disappears

## Musculoskeletal injury

- Progressive, worsens in three stages
  - a. Pain while at work that may get better or worsen at night and on weekends, depending on your other activities (for example, sports, another job, etc.). This stage can last months. Your body needs to recover from intense physical exertion. If the body does not have time to recover you are more likely to suffer an injury that does not go away quickly or easily.
  - b. Pain and fatigue that begin early in the shift and that continue during the worker's resting hours in the evening. The worker can be woken up by their pain. Workers often take pills for the pain or drink energy drinks, and continue working even though they are in pain.
  - c. Pain, fatigue, and weakness that interrupt the worker's labor and that continue even when the worker is resting. The pain can make everyday tasks difficult or impossible to do. This stage can continue for months or years and it is possible that the worker can develop a temporary or permanent disability.

# Muscle fatigue vs. musculoskeletal injury





**Say:** Now we will show you a list of list of risk factors for contracting a musculoskeletal disorder.

# **What are the most common causes of these injuries?**

- \*Repetitive movements**
- \*Heavy lifting**
- \*Poor body positioning**
- \*Accelerated work pace**
- \*Long shifts and long work weeks**
- \*Impact and vibration**
- \*Lack of warming up**

## **Repetitive movements**

**Say:** Each job requires the worker to carry out a series of repetitive actions which can be repeated many times over the course of a long shift.

### **Ask the following questions:**

What is one of the jobs that you do which is very repetitive?

Which of the repetitive movements that you do cause you the most discomfort in your work?

Which parts of the body can be affected by repetitive movements?

### **Make sure the following points are clear:**

- Many of the activities in forest work involve repetitive movements, because of this, the worker should make sure that they are doing the movements with the best body position possible and that they are taking their breaks in order to give their body a chance to recover.
- Tree planting: being bent over for hours on end is one of the factors that can cause a musculoskeletal injury in the lower back and shoulders.
- Cutting trees: holding one's arms and legs in the same position for hours is a factor that can cause musculoskeletal injuries as well.
- Piling brush: is another factor that can cause a musculoskeletal injury.
- Steep areas: can cause these injuries in knees and ankles.

# Repetitive Movements



## Heavy lifting

**Ask:** What are some of the heavy things that you lift in forest work?

**Allow the workers to respond. Make sure that the following points are clear:**

- Lifting heavy objects involves various risks. If you do it without the proper body positioning, you can injure your back.
- When lifting something heavy, lift with the legs, keeping the back straight.
- Avoid twisting while lifting.
- Lifting heavy objects several times a day fatigues the muscles, increasing the risk for the back as the day wears on.
- It is important that crew members take the risks involved in heavy lifting seriously and not take unnecessary risks by competing to see who can carry more.

**Demonstrate correct way to lift something from the ground.**



# Heavy lifting



## Carrying Heavy Loads

**Ask:** Have you ever thought that the load you were carrying was too heavy? Why did you think that?

**Allow the workers to respond. Make sure that the following points are clear:**

- While heavy lifting is dangerous, sustaining the weight and carrying a heavy load also poses risks.
- For tree planters, it is important that the planter has bags that are the right size.
- Sometimes the worker can reduce what they are carrying by organizing their work better. For example, tree planters can bag up more often, or leave half of the trees that one needs to plant at the halfway point. If the area is very steep, the worker can then begin to plant upwards from below or vice versa until arriving where he left the first load of trees.
- It is important that members of a crew recognize the toll that carrying heavy loads can have on the worker and do not take unnecessary risks by competing to see who can carry more.

# Carrying heavy loads



## Poor body positioning

**Ask:** What is the difference between these two photos? Which is better? Why?

**Allow the workers to respond. Make sure that the following points are clear:**

- Poor body positioning refers to using positions of the body that gradually cause injuries to the musculoskeletal system. When someone refers to the correct way of lifting a weight without hurting one's back, they are talking about how to avoid poor body positions.
- In forest work, there are various activities that involve work where it is very easy for a worker to adopt poor body positioning without realizing it.
- Adopting awkward or static postures in combination with exerting force can cause musculoskeletal disorders.

**Ask:** What do you think of the sawyer's body posture?

**Allow the workers to respond. Make sure that the following points are clear:**

- The position of the saw is wrong because the saw is distant from the body. It must be close. The way the worker is holding it in the photo, puts a lot of strain on the lower back.
- Holding the saw close to the body causes stress in the body approximately equal to the weight of the chainsaw. When the arms are extended, the force on the lower back can exceed 600 pounds, depending on the chainsaw weight.
- The chainsaw should be started on the ground or between your legs. Drop-starting the saw puts too much strain on the arms, spine, and wrist, which can cause musculoskeletal disorders.

**Ask:** Have you received training from your employer or crew boss about the best body positions to use in doing each of the forest work activities?

**Say:** You have the right to receive training on how to do your job in a Safe and healthy way.

**Demonstrate correct body positioning for the following:**

- Use a chainsaw
- Plant trees
- Etc.



# Poor body positioning

1.



2. ???





## Accelerated work pace

**Ask:** Have you ever had to work at a very quick pace? Why were you asked to work so quickly?

**Allow the workers to respond. Make sure that the following points are clear:**

- Accelerated work pace refers to the pressure that the worker feels to work quickly.
- A fast work pace can cause accidents. In addition, it can accelerate the rate at which the worker develops musculoskeletal injuries.
- The crew boss may demand a fast work pace. Nevertheless, it is important to always work at a rate that can be sustained throughout the shift.
- A fast work pace can also be the product of competition among co-workers or a desire to not be left behind.
- A fast work pace is no reason for a worker to jump from trunk to trunk or from one side of a draw/ bank to another. A branch can whip back and hit the worker, and the impact of jumping can damage the knees over time.

# Accelerated work pace



## Long shifts and long work weeks

**Ask:** How long was the longest shift you have worked?

**Allow the workers to respond. Make sure the following points are clear:**

- Long shifts do not just leave the worker feeling tired by the end of the day, they also contribute to the development of musculoskeletal injuries.
- Long shifts mean that the worker is doing the activity that is causing damage to their body for many hours each day. Long shifts do not leave enough time for the body to recover.
- We often cannot control the length of the shift. But, the key point is that rest is very important to allow your body to recover.
- In addition, doing different tasks during the day as much as possible may decrease the risks of developing a musculoskeletal disorder.



# Long shifts and long work weeks



## Impact and vibration of the tools

**Ask:** Has the impact or vibration of any of the tools you use ever affected you? Please tell us about it.

**Allow the workers to respond. Make sure that the following points are clear:**

### IMPACT

- Tools like the hoedad and the shovel radiate the jolt from hitting the ground, roots, and rocks, up to the body of the worker.
- If workers absorb these impacts repeatedly, they can develop musculoskeletal injuries in the hands, wrists, elbows, and shoulders.
- In order to reduce the impact, the worker should loosen his grip on the handle of the tool as it makes contact with the ground, without allowing it to escape from his hand. It is also important that the worker uses a tool that is the correct size for his hand so he does not have to use a tighter grip than he would normally to just to ensure that the tool does not slide out of his hand.
- The worker should wrap the handles of tools that jolt the body with tape that absorbs vibrations or wear gloves that absorb vibrations.

### VIBRATION

- Tools like the chainsaw and electric auger produce vibration that is transmitted to the worker's body and can produce musculoskeletal injuries to the spinal column, shoulders, and upper extremities.
- Use gloves that absorb vibrations.
- The way to prevent vibration-caused damage to the body is by spending fewer hours exposed to the vibration. Many sawyers limit the time they are operate the chainsaw to 6 hours. Those who use the chainsaw for 8 hours should find opportunities to rest - for example, while filling the saw with fuel, or while changing the chain.
- In other industries where there are jobs involving vibration, workers are rotated between different work activities so that none of them is exposed to too much vibration.



# Impact and vibration of tools



## Right to visit a doctor

### IMPORTANT POINTS:

- All of the forest labor contractors in Oregon are required by the state to have insurance which covers the medical expenses of on-the-job accidents and injuries.
- You should see a doctor if you believe that you are developing a musculoskeletal injury because you could be doing permanent harm.
- It does not matter if you are here on a visa, if you have documents allowing you to work legally in the U.S. or not, if you have medical insurance, or if it was your fault that you got hurt, all of the workers in Oregon are covered by workers comp, the laws that regulate compensation for injured workers. When you are visiting a doctor about an injury or accident that took place at work, you should receive services without being the one responsible for paying the bill, because that is why your employer pays for workers comp insurance.
- It is common for employers or crew bosses to tell the worker to say that the injury did not happen at work, promising that the company will pay all of the expenses, but often, though the employer follows through at first, the injured worker runs the risk that the employer will refuse to pay. This could mean that you have to pay all of the medical bills, or that you are not able to receive all of the medical attention that you need in order to heal.
- You have the right to choose an interpreter at the hospital or clinic. By state law in Oregon, a representative of your employer cannot interpret during any visit to the clinic or hospital.
- You have the right to report your accident, injury or musculoskeletal disorder and receive workers' compensation benefits regardless of immigration status. By law, your employer must record accidents on a form provided by OSHA and assist you with a claim for workers' compensation benefits.

# Right to visit a doctor



## **The worker is not alone**

### **IMPORTANT POINTS:**

- You are not alone. There are state agencies, doctors, lawyers, and so forth who can help you ensure that your labor rights are not being violated.
- The Northwest Forest Worker Center is here to provide you with information, orientation, and help connecting with the services that you need if you are experiencing a workplace injury or illness, wage theft, or other labor problems.

# The worker is not alone



Northwest Forest Worker  
Center



Ombudsman's Office for  
Injured Workers

**Say:** You have the right to file a complaint against your company to the Occupational Safety and Health Administration (OSHA) or other government agencies for unsafe or unhealthy working conditions in your workplace or for environmental problems.

You are not allowed to be transferred, denied raises, have your hours reduced, be fired, or otherwise be punished for filing a complaint.

If you have been disciplined or discriminated against for exercising your rights, you should file a complaint with OSHA within 30 days.

You can file a complaint by telephone, through email, or online.

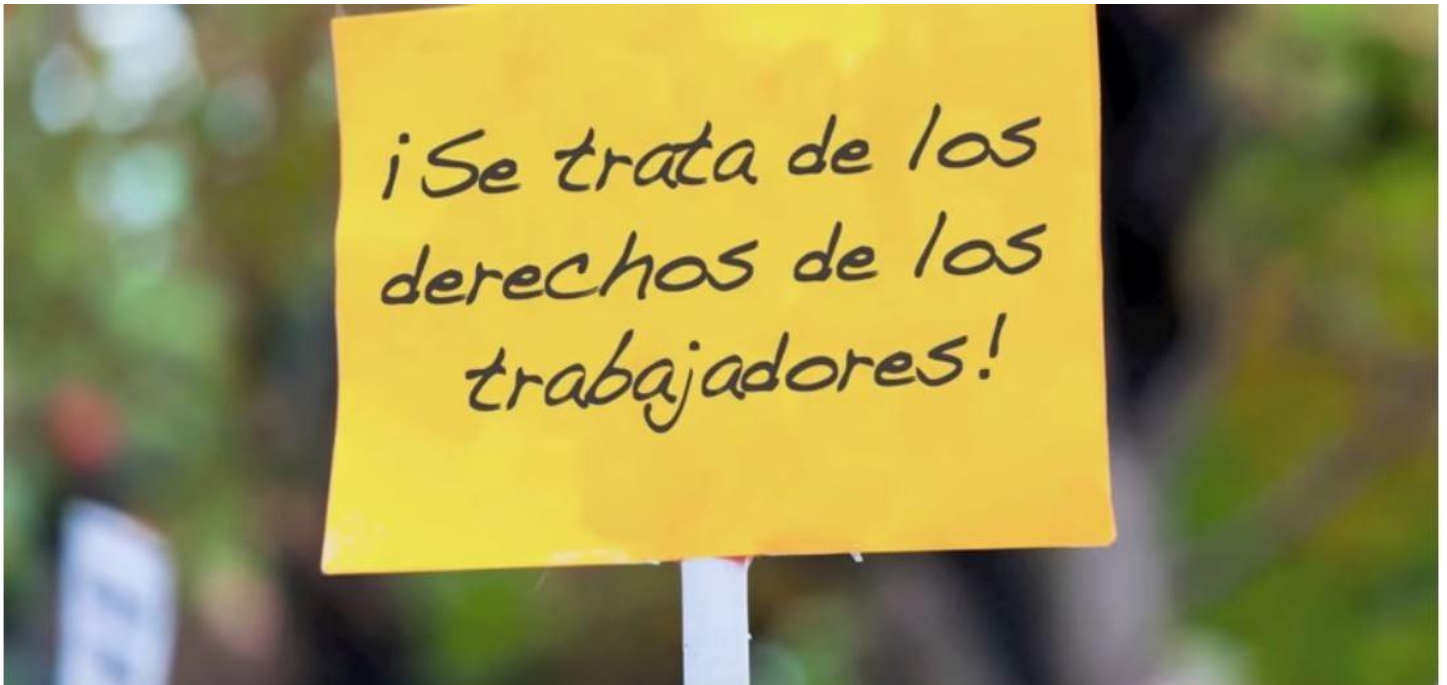
The number for OSHA is 1-800-321-OSHA (6742)

The number for the OSHA office in Medford is 1-541-776-6030

In your complaint you should include information about the manner in which your employer retaliated against you for reporting unsafe or unhealthy working conditions.



# Your right to file a complaint



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- Not sleeping well: Tom Baker, Diario Córdoba, [https://www.diariocordoba.com/noticias/sociedad/mas-mitad-espanoles-no-duerme-bien\\_1288442.html](https://www.diariocordoba.com/noticias/sociedad/mas-mitad-espanoles-no-duerme-bien_1288442.html)

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