Injury Prevention: Overexertion
Introduction:

This is the second in a series of four injury prevention campaigns that will focus on the most common types of injuries in the forest industry. An important part of any safety program is a focus on the high risk activities that may result in major injuries. However, to have a successful and well-rounded program, attention must also be paid to those less severe injuries that occur more frequently.

Overexertion injuries fit this description. A strained back or sprained ankle is not a life threatening injury but they do happen often and can keep you away from work for long periods of time. Think about how many people you know that have bad backs or an injured knee. It doesn’t take long to realize that these injuries are very common and deserve some attention to reduce their occurrence. If you have ever experienced a severe sprain or back strain; you realize that these injuries can reduce your mobility, prevent you from working and decrease your overall quality of life.

When we move into the hot summer season, it is time to start thinking about heat stress injuries. Injuries such as heat cramps, heat exhaustion and heat stroke will also be discussed in this resource package.

Definition of Overexertion Injuries:

Overexertion injuries are commonly referred to strains and sprains and include injuries to the major joints and back. Back strains are the most common type of overexertion injury.

Truck drivers, fallers and tree planters are three groups in our industry that experience a high overexertion injury rate. If we look at all the types of injuries experienced by log truck drivers, back strain is the most frequent. Fallers see a lot of knee problems, back strains and neck issues from constantly looking up. Tree planters and silviculture workers often experience strains and sprains due to the repetitive nature of their work. Graphs showing injury rates for each of these occupations are presented later on in this resource package.
Overexertion injuries can occur in deceptively simple ways:

- Lifting a heavy object and twisting = back strain
- Jumping down off a log = knee sprain
- Stepping into a hole = sprained ankle
- Not being acclimatized to a sudden heat wave = heat exhaustion

The goal of this injury prevention package is to describe types of overexertion injuries, create understanding on how they occur, and provide resources for companies to use to in their safety programs and ultimately reduce the occurrence of these types of injuries.

**How to Use this Tool:**

Develop a training program targeted at reducing overexertion injuries.

Use the Powerpoint presentation at your next meeting to increase worker’s awareness about overexertion injuries.

Develop an internal safety memo or bulletin for your workplace.

Provide a topic and background information for a safety meeting, crew talk or tailgate meeting. The injury rate graphs should get a good conversation going amongst your group.

Put the poster up (see image on introduction page) in the scale shack to increase driver’s awareness of back injuries. Contact the Council to order the free posters.
Use the pieces of information that are most useful to you:

- Use the Heat Stress injury information if you work during the hot summer months.
- Focus your efforts on one of the high risk jobs in your business like truck driving, tree falling or planting. Use the information in the graphs to look at the types of injuries that are most common.
- If your company doesn’t have one of those 3 high risk occupations, do an inspection of your workplace to identify those jobs that are physically demanding and can lead to sprains and strains.

**Suggested Practice:**

- Look at your company’s close call and incident records. Have there been reported overexertion injuries or close calls? If so, look for common factors in the incidents and develop some corrective actions to reduce the occurrence. If these types of overexertion injuries have not been reported, do a little more research. Are they not reported because they didn’t occur or were they just not reported?

- If your company has challenges with incident reporting, use this overexertion information as a starting point to engage workers in a conversation about it. Many workers don’t report the minor strains and sprains because they don’t understand the importance of the information, don’t have the time, or can’t be bothered. Having a conversation about the high frequency of overexertion injuries and the consequences of leaving them untreated may lead to better incident reporting.

- Challenge your first aiders with a drill that focuses on treating strains, sprains and heat stress injuries. Make the drill as realistic as possible in order to discover any weaknesses in your Emergency Response Plans.

- Not sure how this information applies to your company? Contact the BC Forest Safety Council and we can help you.

**Innovative Applications**

If you have developed an innovative way to get the message out to your workers we would love to know! The Council shares Innovation Alerts to help companies improve their safety management system, to subscribe check out this link:

http://www.bcforestsafe.org/newsroom/newsletters.html
Overexertion

Injury Prevention webinar
Introduction

• Here’s what we are going to discuss:
  • BC Forest Safety Council’s Injury Prevention Campaigns
  • Introduction to Overexertion Injuries
  • Forest Industry Examples
  • How to use this information in your company
Injury Prevention Packages
What are Injury Prevention packages?

- Information on frequent injuries that occur in the forest industry.

- Four packages in 2012
  - Slips, Trips and Falls
  - Overexertion
  - Struck by
  - Fall from Height

- Prevention tools.
What is Overexertion

- Class participation time – show of hands please.

- How many of you have had the following type of injuries?
What is Overexertion

- Sprained Ankle
- Strained Back
- Heat Exhaustion/Heat Stroke
- Threw out shoulder
- Sprained wrist

All examples of overexertion injuries
Overexertion Defined

- Strains, sprains or tears.
- Also added heat exhaustion/heat stroke.
Overexertion Stats

- The graphs in this presentation contain info from:
  - WorkSafeBC statistics
  - 2001 to 2010 time period
  - Top 3 occupations for injury claims
  - Fallers, drivers and tree planters
Overexertion – by Body Part
Industry Examples
Example - Faller
Chain of Events

• “Rather than being the main instigators of an accident, operators tend to be the inheritors of system defects created by poor design, incorrect installation, faulty maintenance and bad management decisions. Their part is usually that of adding the final garnish to a lethal brew whose ingredients have already been long in the cooking.”

• James Reason, Human Error, 1990
Poor fitness and flexibility

Stiff from weekend hockey

Rough drive to block – jars back

Time Pressure – need to finish block today

Poor weather – cold and rainy

Poor block – slashy and difficult to move around

No warm up before beginning work

Jumps down to next log instead of walking around

Hard landing – injures back
Faller Stats

- Knee
- Face & Ears
- Back
- Wrist, Fingers & Hand
- Other Lower Extremity
- Ankle, Toe & Feet
- Shoulders
- Chest
- Other
- Other Upper Extremity

- Other Strains
- Fractures
- Laceration
- Contusion
- Back Strain
- Back Strain
- Hearing Loss
- Tendinitis, Tenosynovitis
- Dislocation
- Abrasion
Back Injury Advice

• How do I return to work if I have a back injury or back pain?
• The longer you stay off work due to a back injury or back pain, the less likely you are to return, so it's important to get back to work as soon as possible.
• Talk to your employer about your situation and discuss how you can modify any work activities that stress your back.
Example – Log Truck Driver
End of long season - fatigue

Family problems – mind not at work

Minor shoulder injury earlier in season

Not getting any younger!

Time Pressure – cycle
time concerns

Forgot gloves – poor grip

Major shoulder injury while throwing wrapper

No warm up - zero to sixty
### Truck Driver Stats

- **Back**: 260 injuries
- **Other**: 120 injuries
- **Shoulders**: 50 injuries
- **Wrist, Fingers & Hand**: 20 injuries
- **Ankle, Toe & Feet**: 15 injuries
- **Knee**: 10 injuries
- **Chest**: 5 injuries
- **Face & Ears**: 3 injuries
- **Other Head**: 2 injuries
- **Other Lower Extremity**: 1 injury

**Injuries by Type**:
- **Back Strain**: 260 injuries
- **Fractures**: 120 injuries
- **Contusion**: 50 injuries
- **Concussion**: 20 injuries
- **Laceration**: 15 injuries
- **Hearing Loss**: 10 injuries
- **Dislocation**: 5 injuries
- **Multiple Injuries**: 2 injuries
- **Tendinitis, Tenosynovitis**: 1 injury

**Note**: The chart illustrates the frequency of injuries among truck drivers, with the **Back** area experiencing the highest number of injuries. The **Other** category also has a notable number of injuries. The chart provides a visual representation of the types of injuries, emphasizing the importance of injury prevention and safety measures in the trucking industry.
Example – Tree Planter
Poor fitness

$1^{st}$ hot day of season – not acclimatized

Didn’t pack enough water

Supervisor busy running trees – doesn’t notice worker

Attitude – doesn’t want to complain

Poor clothing choices – wants to work on tan

Planter not working with a buddy

Heat Exhaustion
Heat Stress Injuries

- Heat Cramps, Heath Exhaustion, Heat Stroke
- Heat Sources: Environment and Activity
- Heat Releases: Increased Bloodflow and Sweating
Key points to prevent heat stress

1. Learn to recognize the signs and symptoms of heat stress in yourself and co-workers. Avoid working alone.

2. Acclimatize your body (gradually expose yourself to heat and work).

3. Drink plenty of water (one glass every 20 minutes). Avoid caffeine, alcohol, and drugs.


5. Take rest breaks in a cool or well-ventilated area. Take more breaks during the hottest part of the day or when doing hard physical work. Allow your body to cool down before beginning again.

6. Schedule work to minimize heat exposure. Do the hardest physical work during the coolest part of the day.

Source: Preventing Heat Stress at Work - WorkSafeBC
Tree Planter Stats

- Wrist, Fingers & Hand
- Knee
- Back
- Ankle, Toe & Feet
- Other Upper Extremity
- Shoulders
- Other Lower Extremity
- Chest
- Eye
- Elbow

- Other Strains
- Tendinitis, Tenosynovitis
- Back Strain
- Laceration
- Contusion
- Fractures
- Bursitis & Related
- Poisoning
- Dislocation

BC Forest Safety Council
Unsafe is Unacceptable
How to Use this Information
Tools

• Powerpoint presentation
• Crew Talks
• Poster
• Resource Package
BCFSC Assistance

• Help is available to integrate injury prevention campaigns into your operations
Contact Information

Gerard Messier
messier@bcforestsafe.org
250-739-5177

Check out the forum:
http://forum.bcforestsafe.org/
Crew Talk

Overexertion Injuries – Strains and Sprains

Date of Crew Talk: __________________________

Description:

Overexertion injuries and in particular back and muscle strains, are a very common type of injury in the forest industry. Physically demanding jobs such as falling or tree planting can easily cause muscle strains. Walking through the forest puts workers at risk for knee and ankle sprains due to the rough terrain. Truck drivers and equipment operators are jarred by rough roads and terrain which can lead to back strains.

General First Aid Procedures:

Think of the acronym RICE when treating strains and sprains.

Rest
Ice
Compression
Elevation

Rest the injured body part and use ice, compression and elevation to help control the swelling. Seek first aid or medical attention as soon as possible to start the rehabilitation process.

It is important to incorporate some movement of the sprained joint or strained muscles in the rehabilitation. Movement encourages blood flow and increased healing of the injury. Follow the advice of your doctor.

Contributing Factors:

Wrong tool for the job
Improper lifting or movement
Jarring from inside vehicle or machine
Lack of warm up
Poor physical fitness
Aging workforce
Recommended Preventative Actions:

Ask for help with physically difficult or awkward jobs. Get advice from an experienced co-worker, they may have a better way of doing the job.

Warm up your muscles before exerting yourself

Keep yourself in good shape and seek medical attention for any injuries (minor strains often get more serious if left untreated)

Use appropriate PPE (for example: footwear with good tread and gloves that improve grip)

Walk around obstacles if possible. Scrambling over obstacles can put you at risk.

Jumping down off of heights puts lots of stress on your joints. Walk or climb down.

Use 3 point contact. Strain injuries often occur when you lose your balance and try to recover.

Discussion/Follow-up Actions:

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Attendees:

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Crew Talk

Heat Stress Injuries

Date of Crew Talk: __________________________

Description:

Heat stress injuries occur when the internal temperature of the body rises above the normal range of 36 to 38 degrees C. This often happens when the air temperature or humidity is high and the body cannot effectively get rid of the heat by sweating.

There are 3 types of heat stress injuries to be aware of:

1) Heat Cramps - are muscle cramps caused by losing too much salt through sweating.

2) Heat Exhaustion - is caused by depletion of both water and salt, due to sweating during prolonged periods of exertion. Fluid replacement has not been sufficient to match losses.

3) Heat Stroke - occurs when the body’s mechanisms for heat dissipation are overwhelmed and fail. Heat stroke is a life threatening condition in which the body’s core temperature rises above 41 degrees C. At this temperature, sweating stops and body is unable to get rid of excess heat, causing the body temperature to continue to rise.

General First Aid Procedures:

1) Heat Cramps
   - Move worker to cooler environment (shade if possible)
   - Cool worker with water or by fanning
   - Provide appropriate fluids to rehydrate worker (only if they are fully awake and aware)
   - Water and sports drinks are appropriate (alcohol and caffeinated drinks are not recommended)

2) Heat Exhaustion
   - Same as above, however if the workers condition doesn’t improve after 30 minutes, transport them to medical aid.

3) Heat Stroke
   - This is a life threatening injury and the worker must be transported to medical aid as soon as possible. The following procedures should be done while transporting the worker.
   - Maintain airway, breathing and circulation as required (ABC’s)
- Lay worker down, in the recovery position if throwing up is a concern
- Remove out clothing and apply cold water onto the worker. Fanning will help with the cooling process.
- Provide appropriate fluids if awake and aware.

This picture describes how to tell the difference between heat exhaustion and heat stroke.

### Potential heat stress situations:

- Working in the cab of a machine with no air conditioning
- Physically demanding jobs like tree falling
- Tree planting - lots of sun exposure and hard physical work
- Wildfire fighting – heat from the environment and high intensity work

### Contributing Factors:

**Primary factors contributing to heat stress**

<table>
<thead>
<tr>
<th>Environment</th>
<th>Worker</th>
<th>Work</th>
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<tbody>
<tr>
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<td>Acclimatization</td>
<td>Workload</td>
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<td>Clothing</td>
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<td>Radiant heat (e.g., sun, kiln)</td>
<td>Medical conditions</td>
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Source: WorkSafeBC – Preventing Heat Stress Injuries at Work
Recommended Preventative Actions:

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