

# Ergonomics and Snow Shoveling

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SORE BACK?

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Occupational Health  
Clinics for Ontario  
Workers Inc



Centres de santé  
des travailleurs (ses)  
de l'Ontario Inc.

# SNOW, SNOW, SNOW



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# Background

- **As Canadians, we are accustomed to shoveling snow.**
- **For many of us:**
  - We shovel to get out of the driveway,
  - To keep our driveway clean and safe for pedestrians
- **But, for others:**
  - It is a job requirement



# Good and Bad News...

## GOOD NEWS

- **15 minutes of shoveling is considered moderate activity**
- **Good way to keep in shape and to burn extra calories**

## BAD NEWS

- **There has been an increase in both fatal and non-fatal heart attacks in recent years**
- **People continuously over-exert themselves and are becoming injured**



# Who should avoid shoveling?

- **Elderly People**
- **Anyone who has had a previous heart attack.**
- **People with a history of heart disease, high blood pressure or high cholesterol levels.**
- **Smokers.**
- **People leading a sedentary lifestyle.**
- **People with existing back problems.**



# Why not buy a snow blower?

- You do not necessarily have to run out and buy a snow blower.
- Not everyone who shovels snow is going to have a heart attack or get injured.
- Snow shoveling can be good exercise when performed correctly and with safety in mind.



# Prior to Shoveling

- **Avoid caffeine and nicotine**
  - Stimulants that place extra stress on the heart (increase heart rate and cause blood vessels to constrict).
- **Avoid eating large meals**
  - Places extra demands on the digestive system (stomach cramps).
- **Drink plenty of water**
  - Dehydration is as much of a problem in the winter as it is in summer.



# Prior to Shoveling

- **Dress warmly**
  - The nose, ears, hands and feet need extra attention in cold weather. Wear a turtleneck, sweater, toque, scarf, face protection, wool socks and waterproof boots.
  - Place a scarf or other face protection over the nose and mouth to avoid breathing cold air.
  - Dress in layers so you can remove a layer as needed.
- **Wear proper footwear**
  - Boots with slip-resistant soles can help to minimize the risk of slips and falls.



# Prior to Shoveling

- **Warm-up for 5 to 10 minutes to get the joints moving and increase blood circulation.**
  - **Aerobic - march on the spot, climb stairs, or go for a quick walk around the block.**
  - **Stretch - gently stretch the back, arms, shoulders, and legs.**
- **Be weary of your back – it is very vulnerable when you first wake up.**
  - **Back muscles stiffen while you sleep. Avoid exerting yourself shortly after getting out of bed.**



# Picking the Right Snow Shovel

**The most important features of a shovel include:**

- **Weight**
- **Length**
- **Handle Type**
- **Blade Size & Shape**



# Ergonomic Designs



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# Shoveling Rate

- **What is the recommended rate for shoveling?**
  - **CCOHS recommends a rate of 15 scoops per minute.**
  - **Shoveling should not last longer than 15 minutes followed by a 2-3 minute break.**



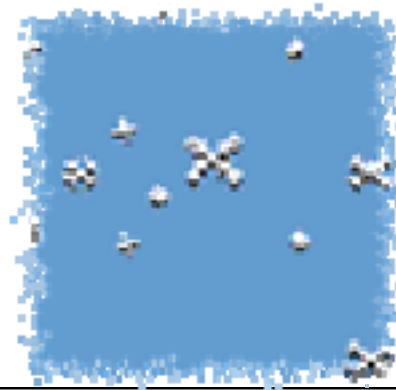
# Shoveling Weight

- **What is the recommended weight to be lifted?**
  - **High rate of shoveling (15 scoops/min), total weight per shovel should not exceed 5-7 kg (10-15 lbs)**
  - **Lower rate of shoveling, maximum of 11 kg (approx. 24 lbs).**



# Throwing Height & Distance

- **The throwing height should not exceed 1.3 meters (approximately 4 feet).**
- **Optimal throwing distance should be no further than 1 meter (approximately 3 feet). The load should be reduced if the task requires a longer and/or higher throw.**



# Shoveling Technique

- **Regular Snow Shovel**
- **Ergonomic Snow Shovel**
- **Snow Scoop**



# Helpful Hints

- **Clear snow early and often.**
  - During a large snowfall, shovel frequently. **DO NOT** wait for all of the snow to fall before shoveling.
  - Fresh snow is fluffy, light, and easier to move than heavily packed or wet snow.
- **Pace yourself.**
  - Start out slowly and take breaks often – **DO NOT** rush to clear all of the snow at once.
  - Try pushing and lifting during large snowfalls in small layers (i.e. shovel an inch or two, rest, and repeat).



# Helpful Hints

- **Watch your footing.**
  - Stand with your feet hip width apart for balance and keep the shovel close to your body.
  - Avoid throwing snow too far when it is slippery.
- **Push, rather than lift.**
  - Push snow with a wide blade shovel.
  - When you have to lift, use a small blade shovel.
- **Use your legs.**
  - Half fill the shovel, bend with knees, keep back straight and lift with legs.
  - Walk to where you want to place the snow.



# Helpful Hints

- **Avoid awkward throwing postures.**
  - **DO NOT** throw snow over your shoulder or to the side.
  - If you need to move the snow to one side, reposition your feet to face the direction the snow will be moved.
  - Do not reach back to push snow (i.e. walking backwards while pushing or lifting snow).
- **Watch for ice.**
  - Look out for ice patches and uneven surfaces under the snow or on the ground that can cause you to slip and fall (black ice).
  - Take smaller steps in icy conditions.
  - Wear boots that have slip-resistant soles. Anti-slipping cleats or footwear could be used by those who are prone to falling.



- **Ask for help.**
  - Ask someone to help you if shoveling snow is a huge job.
- **Listen to your body.**
  - If you feel tightness or pain in your chest, stop right away and call your doctor.
  - If you become sore after shoveling, take a hot bath, get a massage, or take a pain reliever. If you still do not feel well, see your doctor.



# Helpful Hints

- **See what you are shoveling.**
  - Do not let a hat or scarf block your vision.
  - Make sure your glasses are not foggy.
- **Think ahead of time.**
  - Try to throw snow far, early in the winter.
  - Avoid pushing all of your snow to the end of the driveway. Make a path down the middle of the driveway and push all of the snow to the sides.
  - Keep the snow banks the same height all the way down the driveway.



# Helpful Hints

- **Snow Plow**

- Try and shovel the snow as soon as you see the snowplow pass by.
- The sooner you shovel the slush, snow and ice from the snowplow, the easier it is.
- If you wait, the pile of snow will turn to hard packed ice and will be harder to move.
- This snow is heavy, so lift half-filled shovels and walk to where you want to place it.



# Take Home Message

- **Shoveling snow can be both problematic and enjoyable.**
- **The risk of injury and illness can be prevented through proper equipment selection, taking appropriate precautions, and utilizing appropriate shoveling techniques.**



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"I'D LIKE TO HELP YOU BUT I'M ERGONOMICALLY CHALLENGED!"

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# Special Thanks

## A & J Home Hardware

469 Bouchard Street, Sudbury ON



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# Thank you for your attention

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**If you have any questions about ergonomics or any other occupational health concern contact OHCOW at:**

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