

Ergonomics

Shovelling - Snow

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Why is snow shovelling an occupational hazard?

As Canadians, we've been digging with that same snow shovel just as we do every year. But have we ever really given this chore much thought? Whether you're shovelling at work or at home, there are some things you should consider.

Timing and attitude

Often the need for shovelling snow arises unexpectedly and interferes with what we had originally planned to do. Consequently we face this unwanted chore unprepared and, more important, in a hurry to get it over with as fast as possible. If we are not careful, we could experience cold exposure, fatigue, muscular strains and more serious injury, particularly to the lower back. Where possible, it is more practical to shovel early and often. Fresh dry snow is lighter and therefore more manageable than wet, heavily packed, or partly melted snow.

What should you know before you start shovelling?

First of all, you should keep in mind that shovelling snow involves strenuous effort.

In general, if you load a shovel (weighing over 1 kg) with 5 kg of snow (just about the average) every 5 seconds, you will move a load of over 70 kg in one minute. Repeat for 15 minutes and you will have shovelled 1,000 kg of snow. Such effort is obviously not for everyone. This effort is hard on the heart and back. Use of a snow blower may be another option, but these machines require some effort as well.

As with any exercise, talk to your doctor. If you are physically fit, do some warm-ups before you start shovelling. Flexing and stretching exercises will loosen up the muscles and prepare them for the job ahead.

Next, check your clothing. Are you dressed appropriately? Wear several layers of warm lightweight clothing that is hinder free and comfortable to move in. The inner layer should be breathable or thermal underwear that allows perspiration to escape from the skin surface. Make sure your head, (especially your ears), feet and hands are well covered. However, do not let your hat or scarf block your vision - you have to see what you are shovelling. Boots should be water-resistant and high-cut, and should provide good traction. Gloves should be light and flexible and give you a good grip. If it is really cold, wear something over your mouth. Use a work/rest schedule if the temperatures are low or if it is windy.

For more information about working in the cold, you can visit the "Cold Environments" publications in OSH Answers - [General Information](#), [Health Effects and First Aid](#), and [Working in the Cold](#).

Any shovel will do, right?

What about that shovel? Is it a **snow** shovel? Any other kind of shovel will make the job much harder.

The important features of a shovel include:

- Weight: should be light weight but sturdy - about 1.5 kg (a little over 3 lbs).
 - Length: the handle reach the user's chest to reduce the amount of forward bending.
 - Shaft type: shafts with a bend (versus a straight style) may be easier on your lower back when used correctly.
 - Handle type: typically have a "D" shaped handle. Be sure the handle type does not force the wrist into awkward positions.
 - Blade size/shape: choose the style that best matches the exact task. For example, a large push-style shovel will move large amounts of snow, but may result in lifting too much weight. A smaller blade shovel (25 to 35 cm or about 10-14 in) should be used for lifting and throwing snow. The smaller blade will decrease the weight that is lifted and decrease the risk of injury.
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How should you shovel?

Work at a steady pace. Shovelling is going to make you sweat and, if you stop, you could get a chill.

Push the snow rather than lift it. If you must throw it, take only as much snow as you can easily lift and turn your feet to the direction you're throwing - don't twist at the waist. Do not throw snow over your shoulder or to the side.

Pace yourself. Shovelling snow is strenuous activity comparable to weightlifting while walking on uneven and unstable ground and wearing heavy-duty clothing. Take frequent breaks and drink some warm non-alcoholic fluids.

Where can you get more information about shovelling?

For more information about shovelling in general including what to consider when selecting a shovel, and the rate (how fast) you should shovel, please see the OSH Answers document [Shovelling](#).

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