



Slips, trips and falls – an old theme that still hurts.

By Dr. Delia Roberts

It's a good bet that you've had the safety talk on slips, trips and falls before – several times. So why does this injury category continue to rank as one of the highest in forestry? And not just for small strains, a simple slip and a resulting fall can lead to very serious consequences when working around machines and out on the block.

Environmental Factors

When we try to break down the causes of an injury, we can look at both environment and individual factors. Environmental, or external factors, include some things that we can change (wearing good boots with ankle support and soles that are appropriate for the conditions, or keeping your worksite free of unused equipment and loose debris that can trip you up) and some things that we can't change (sleet and snow, steep slopes and uneven surfaces). There are a lot of good resources available from the BCFSC and other safety organizations to make you more aware of these environmental factors. If you need help identifying and dealing with these kinds of hazards, there are some useful links at the end of this article to help you get started.

Human Factors

Instead let's look at the factors that are related to your behavior, your physical capacity, and the decisions that you make. The first thing that is worth your attention is – your attention. Your brain is the central point of control, and governs everything that we think, see, or do – so making sure it's performing at its best is key to everything else. To do this:

1. Get Enough Rest

If you are sleep deprived your brain will not be able to process information as fast and your decisions will not be as clear and logical as they would be if you were well rested. You won't easily recognize the hazards that are in front of you or be able to adapt your plan to changing conditions, the



very things that contribute to the kinds of errors that cause slips, trips and falls.

No one can say exactly how much rest you need to function at your best, and life has a way of keeping us from getting to bed on time. But what you can do, is realize how much of an impact sleep loss has on your ability to perform well. At the very least, if you keep this in mind on the days when you are tired, you need to make it a priority to get enough rest, for yourself and your family. After all, they are the ones that suffer if you get hurt.

2. Eat Small Amounts Every Few Hours and Avoid Sugars

Your brain and reflexes rely on blood sugar for their primary fuel (so does your immune system). When you eat something sweet, blood sugar rises very quickly and you'll release the hormone insulin to move the excess sugar into storage. This causes a rebound low about two hours later. Research with fallers, equipment operators, truck drivers and tree planters has shown that when blood sugar fluctuates a lot, reflexes are slowed, information processing has more errors, and decision making is impaired. You won't see the risks clearly and you won't find your way to a decision to lower the risk. It doesn't take much imagination to understand how a reaction time that is half a second slower can make the difference between life or death on the block or highway.

Eating to stabilize your blood sugar is easy once you get the hang of it. You can eat small snacks of complex carbohydrates with some protein and a bit of fat every 3 hours or so. And stay away from sweets and juices/soft drinks unless you are engaged in hard physical work (tree planting, manual tree falling, hiking across the block). For more on how to eat to stabilize your blood sugar, see the links below.

3. Drink Enough Fluids

Dehydration can sneak up on you when your fluid intake is limited. It may be due to the fact that you have to carry your water in your pack, or you don't drink because you don't want to exit your machine to empty your bladder, or in hot temperatures you sweat heavily, or in cold dry air where a lot of fluid is lost due to breathing. Always carry a water bottle; cool plain water is ideal for replacing fluid losses.

You can easily make sure you are getting enough water by checking your body weight just before and just after work. Your clothing should be the same (not wet or muddy), with empty pockets and empty bladder. Any weight loss over the day is mostly water. Keeping in mind that 1 kg or 2.2 lbs. equals a litre of fluid, try monitoring your weight to get an idea of your fluid losses. The best way to keep the fluid in your body is to drink small amounts (about half a cup), regularly throughout the day. The amount of fluid you need is highly variable (anywhere from one – eight litres) so pay attention to a dry mouth and thirst.

4. Neutral Spine and Activated Core Posture

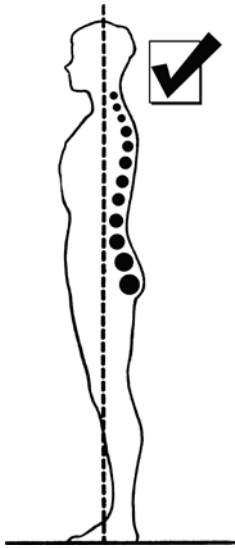
In neutral posture the forces created when you move or lift an object are transferred through your skeleton, and the contracting muscles support your joints. This is a powerful and balanced stance but unfortunately there are all kinds of signals that interfere with our ability to sense our posture and how our joints are aligned. Sitting, driving, working with your arms in front of your body, carrying a load and previous injuries, all disrupt this natural position.

Take the time to reset your posture regularly; stand tall to find a neutral spine with your pelvis underneath you and then

Continued on page 18...



Continued from page 17..



practice activating your core muscles. Once you have the sequence down, it takes only seconds for your body to reset your reflexes and find a more balanced position as you move.

The more balanced your posture, the more likely you'll be able to keep your body over your feet while stepping over slash, walking on variable surfaces, and climbing in and out of machines. But if your starting position has your hips well in front of your shoulders, you are already half-way to a fall before you even start. For step-by-step instructions on how to find a neutral posture, see the links below.

5. Keep your Muscles and Joints Functioning

Muscles only stay strong if you use them. For those forestry jobs where you spend most of your time behind the wheel or in a machine and then hike across a block or throw a set of wrappers this creates a problem. If your day-to-day activity doesn't load the muscles that you need to do the physical parts of your job, you'll have to do the work somewhere else if you want to stay fit enough to be able to do your job safely and at a high level. There are lots of great exercise programs out there that can keep you strong and reduce your risk of injury. But make sure you choose one that you enjoy, one that fits into your daily schedule in a realistic manner, and get advice from a professional to choose exercises that best serve your needs.

Strong muscles will help you avoid slips, trips and falls by providing the extra power you need to lift your foot over an obstacle, step up fully onto your machine and take that extra step needed to carry your body where it needs to go. It will also help your health, from managing excess weight, to sleeping better, to decreased risk of diseases. Staying fit and strong does take some time and effort, but it's well worth it.

6. Prepare and Practice

Reflexes by nature are not something we think about. When you step on a slippery patch of ground, or catch your foot on a tree branch, there isn't time to decide which muscle needs to contract and which one needs to relax. Your body makes the adjustment automatically when a muscle suddenly lengthens or the pressure inside a joint suddenly builds. If the system is working, the right muscle contracts at the right time to pull you back to centre with your weight over your feet – but this only works well if the nerves have the fuel they need and your posture knows where that balanced upright position is. Just as with neutral posture, this is a sequence that needs to be practiced to stay sharp. Research with thousands of athletes in different sports shows that when a few balance and agility exercises are included in the warm up, the rate of knee, ankle and shoulder injuries goes way down. Stop the exercises and it goes back up.

Because you are teaching your reflexes how to restore your balance, it's critical that you do these exercises with good form.

- Always start with your spine in neutral, your pelvis underneath you and your core activated. Concentrate on activating your glutes as shown in the link below to the knee maintenance article.
- Walk or march in place a few steps to make sure that you can hold neutral/activation as your legs move. These steps alone will improve your balance and agility.
- Now take a big step forward into a lunge position – making sure to keep your posture, core and glutes activated – and return to centre. Repeat on the other side and then to each side.
- Gradually add some force (take two steps forward and then stop suddenly with all your weight on the forward foot), or

complexity to the movement (step up onto your machine), all the while concentrating on making sure that your posture and muscle activation are in top form.

Add a few of these practice movements into your pre-work routine and you'll find yourself focused and balanced throughout your day. You can fit them in anytime you have a few moments of wait-time and a safe place to stand. Do them with your family, it will help your kids at their sports activities, and reduce joint pain for adults.

In the end, it's still very important to stay vigilant for external factors that can cause slips, and trips, use your PPE and 3 Point Contact procedures – but tuning up your brain, reflexes, muscles and joints will improve your chances of avoiding a fall by a factor of ten. It's well worth the bit of effort it takes!

More on slips, trips and falls

www.bcforestsafesafe.org/files/Slips_Feb%202011.pdf

www.bcforestsafesafe.org/injury_prevention_slips_trips_and_falls

www.worksafeforlife.ca/Home/Injury-Prevention/Protecting-your-Body/Slips-Trips-Falls

www.workplacesafetynorth.ca/sites/default/files/uploads/Every-Worker-Fall-2011.pdf

What and when to eat to stabilize blood sugar

www.bcforestsafesafe.org/files/BCForestSafetyNewsLetter_2014October.pdf

http://bcforestsafesafe.org/files/ps_FallerFoodChart.pdf

www.bcforestsafesafe.org/files/ForestSafetyNewsletter_2017October.pdf

www.bcforestsafesafe.org/files/fsn_2018Oct_HealthandWellnessPg14-15.pdf

How to find and hold neutral posture

www.bcforestsafesafe.org/files/BCForestSafetyNewsLetter_2015February.pdf

Knee preparation

www.bcforestsafesafe.org/files/fsn_2018Dec_HealthandWellnessPg18-19.pdf