

PREPARE FOR THE SEASON

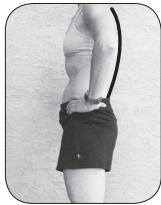
BEFORE THE SEASON STARTS, do these exercises 3x/day, 3x/week, for at least 6 weeks *before you get to camp!*

1 FIND NEUTRAL POSTURE

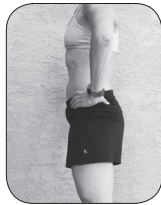
Find neutral posture and practice as frequently as you can (at least 10x/day). A neutral spine positions your pelvis, which affects how your knees move. *Keep the neutral position for all of the exercises that follow.*



Hip bones in front of pubis.



Hip bones behind pubis.



Neutral posture, reduces stress on muscles of the back and hips, knees and ankles

2 CONTROL YOUR KNEES all exercises 15-20 reps, 3x

CHAIR SQUAT WITH BAND



- Stand in front of a chair in neutral spine.
- Place elastic band around knees and gently press against it.
- Squat down as if to sit on the chair, keep a gentle pressure on the elastic band.
- Return to standing.

CRAB WALK



- Loop elastic band around both legs at calf or knee height.
- Engage core, bend knees and lean forward slightly.
- Walking sideways, reach one leg out to the side and repeat in one direction for 20 steps.
- Walk back to your start location using the other leg to lead.

LUNGE WALKS



- Step it out and make sure that your *knee doesn't move in front of your foot or wobble from side to side.*

ADDUCTION

- Attach elastic band to a solid object at ankle height.
- Stand sideways to the band and loop the free end around the ankle closest to the solid object.
- Keep neutral spine and move tethered foot closer to the anchor keeping the majority of weight on the free leg.
- Control return to start position –the return is the harder part of the exercise.



STEP-UPS Find a staircase or solid box - mid shin height.

- Place one foot on top of the stair, engage core and step straight up onto the object.
- Do not touch your foot down once you have stepped- up. Balance for 2-3 seconds, then slowly lower back down, leaving your other foot on top of the stair.
- Repeat 15-20 per side.

VMO

- Pretend you are skating in stocking feet on a slippery floor.
- Push down into the floor and out to the side.
- Keep your core activated.

3 BALANCE TRAINING

Stand on one foot for 1 min each side. To make it harder, close your eyes, or stand on a cushion to teach your muscles to respond quickly when there is a sudden load change.

4 AGILITY + REFLEX TRAINING

This exercise is **CRITICAL TO IMPROVE REFLEXES** that support your knee joints. *Concentrate on spine, pelvis and knee positioning control while you are moving.*

- Run 3 steps forward or on the diagonal and stop suddenly (10 stops on each side). The focus is on good spine and knee position during the stop.
- Soccer or haki sac dribbling drill. Play time!

5 STRENGTHENING

Thigh muscles, glutes, and hip flexors control pelvic position and stabilize the knee. Build strength with hill sprints, uphill cycling and jumping exercises. Step-ups, squats, lunges and hill climbers are also great choices. Check out [facebook.com/fittoplant](https://www.facebook.com/fittoplant) for some planting specific workouts.

MAINTAIN

1 WARM-UP: *Good form will 'wake up' control of knee movement if done properly before planting.*

- Sit with a neutral spine and activated core while travelling to the block.
- On the block, step one foot out into a forward lunge while concentrating on posture and knee position. Imagine that you are stepping out to make a new hole. Drive the back knee forward and up into a standing position, with the knee raised towards your chest. Hold for 2 seconds and then step out on the other side. Do 10 of these.

2 FOOT WEAR:

- Collapsing arches load the inside of your knee damaging ligament and cartilage. Keep the arches supported with a well fitting boot and/or insole, a must for gumboots and caulks.
- In the evening stretch and exercise your arches:
 - + Roll a hard object like a golf ball under your foot.
 - + Pull a towel across the floor by gathering it with your toes.

3 TECHNIQUE:

- Do NOT screef side to side, you WILL strain your ligaments. The slightest turn out of your foot can damage your knee, shovel screef instead.

4 PLANT AMBIDEXTROUS:

- Alternating feet the same way you switch up your hands shares the load between your knees and is good for your whole body. Use a shovel with 2 kickers, it has a bit more weight, but less knee stress.

5 REBALANCE:

- Your body is your responsibility! **Ice sore knees!**
- **Massage** the outside of your thigh (IT band) from hip to knee direction with a tennis ball to decrease the lateral pull on your kneecap. Also, massage your butt, by rolling on the ball. These muscles tighten and will 'derail' your kneecap so keep them limber to allow the kneecap to glide smoothly. **Do not massage bone.**
- Restore flexibility with gentle, PAIN FREE range of motion. Don't compress the knee joint (fully bent) or lock in the fully straightened position - this includes Yoga poses! Gently stretch out the big muscle groups that control the knee, spending most of your time on the tightest spots.
- Sit on the edge of a tailgate so that your legs hang free. Get a friend to lift your foot until your leg is nearly straight and gently pull out on your foot 10 times on each leg. Then return the favour.

Thanks to C. Akehurst, J. Tesluck, T. Macleod, S. Wilson, and R. McCullough for their assistance in compiling this pamphlet.

MAINTAIN

6 FOOD + HYDRATION:

- When blood sugar falls your nervous system doesn't work as well and the reflexes that protect your joints don't kick in as fast. Making sure you eat frequent small snacks will keep your muscles and your nervous system fuelled up for peak performance. For more information on the Power Planting Diet see www.selkirk.ca/treeplanting.
- Dehydration can cause many of the same problems as hypoglycemia. Make sure you take extra water with you every day, even when the weather is cold, and especially when it warms up. Plan on at least 500 ml/hour and when the temperatures rise use a rehydration fluid or add a pinch of salt and baking soda to your fluids.

7 SLEEP POSITIONING:

- Back-sleepers put a pillow or rolled sweater under your knees, side-sleepers tuck it between your knees to decrease strain on your back and knee joints.

IF YOUR KNEE HURTS

+ WARNING SIGNS

These are danger signals, if you pay attention to them when they first appear and are still mild you can often stop a full-blown knee injury!!!

- + Swelling
- + Tenderness
- + Locking, catching and crunching
- + Creaking AND painful knee caps
- + Instability in the knee joint
- + Bruising, redness and swelling around knee joint

At the very *first sign* of any of these symptoms report to your First Aid Attendant!

- Immediately start using ice to treat the sore or swollen area (15 mins on, 20 mins off).
- Under the supervision of your First Aid Attendant, you can use an **anti-inflammatory**. Once inflammation starts it's hard to treat, but if caught early you can control it.
- Bag light to take the load off of your sore knee.
- Take it easy for a few days, plant a little slower than usual. **Rest your knee** as much as possible. Do NOT foot screef! Use your shovel instead.
- If this doesn't relieve your symptoms ask for a day or two of alternate duty.
- If your knee is unstable, locks on you or gives out – stop planting! You need your knees to last your whole life.

+ MANAGING YOUR SORE KNEE

1. BRACING AND WRAPPING can help control swelling and keep you aware of your knee's limitations. See your First Aid Attendant for advice. A non-custom brace can help support the medial (inside) of your knee, and help 'track' the kneecap. A brace can be worn on the block or anytime you're not focused on perfect knee movement (day off, recreational time, set-up/take down). A wrap or tensor can also be worn to control inflammation at the end of the day, or at night if loosely wrapped, as the body naturally swells at night.

2. TAPING THE KNEE can resolve specific issues if they are only minor. Check first with a First Aid Attendant, and determine the severity of swelling. If your knee looks like a balloon, taping is not going to keep you planting. If you have mild swelling AND your knee feels stable, taping can relieve some of the muscles being affected. Tape can also enhance the effectiveness of your brace.

PATELLAR GLIDE TAPE METHOD: For grinding, sticky, sore kneecaps, place a rolled towel under your knee so the kneecap is mobile.



Start a piece of tape on outer edge of kneecap.



With gentle pressure, pull tape towards inside of knee.



Stick down. Tape should reach to inside of knee.

3. The recommendations in the Maintenance section become critical when your knees are sore. **DO THEM!**

+ INJURED? Is your knee joint stable or unstable?

INSTABILITY in the knee joint:

- **Stop planting:** instability, locking, and catching can indicate a very serious knee injury.
- **Report Injury:** tell your Crew Boss, see your First Aid Attendant for documentation and referral to a physician
- **Stabilize the joint:** use a brace or tensor to limit movement and protect the joint until properly assessed. Excess movement can cause further damage.
- **Ice:** decrease the inflammation.

ACUTE KNEE INJURY with **STABILITY:**

- **Stop** planting and report the injury, ice as soon as possible.
- **Restrict** your knee from full extension and full flexion by wearing a brace, wrapping it with a tensor or taping.
- **Light Duties:** keep active range of motion with light duty activities around camp until swelling decreases.
- 1 week post injury, or a decrease in swelling: **reestablish balance!** See 'Prepare' section.

THE DESPERATE PLANTER'S LAST CHANCE:

KNEE MAINTENANCE

A knee injury is a serious problem; it can cost you a season of wages, and plague you for the rest of your life. But most knee injuries are preventable, so check out this pamphlet in the Desperate Planter's Last Chance series and save your knees!

BEFORE YOU DEMAND PERFORMANCE, UNDERSTAND HOW YOUR KNEE WORKS.

The knee is a shallow joint, bone stacked on bone with a small cushion between, held together with ligaments and supported by muscle.

The knee is designed to bend only in the forward-aft direction. The knee can fail:

1. When you twist it without moving your foot
2. With side to side pressure (like screefing)
3. If you load it with the knee positioned in front of your toe

Good knee position



Best, knee is stacked over toe and low back is in neutral

Poor knee position



Poor posture causing knee and back problems

By Delia Roberts PhD, FACSM and Ashlie DeJong BSc, HKin, RK.
Graphic Design by Kelly Simpson © Delia Roberts, 2014.



This project was made possible by grants from the BC Safe Silviculture Project and Weyerhaeuser

Reproduction by permission for educational purposes only.