# INJURY PREVENTION PROGRAM GUIDE





Colorado's choice for workers' compensation



**REVISED OCTOBER 2009** 

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# **ACL Injury Prevention Program**

# **Objective and Goals**

The Save Your Season ACL Injury Prevention Program was created to prevent our most severe and costly workers' compensation injury – ACL injuries. The program's mission is to send a season-long message through three components: an initial training program, posters and brief safety discussions that stay fresh in the minds of on-mountain skiing/riding employees throughout the season so they can avoid injury and save their season.

**Objective** – Develop a comprehensive ACL Injury Prevention program to reduce ACL injuries for on-mountain skiing/riding employees.

**Goals** – Implement a training program that increases on-mountain skiing/riding employee awareness and enables them to:

- 1. Recognize when they are in the "Danger Zone"
- 2. Understand the right way to ski/ride and to fall
- 3. Understand the repercussions of an ACL injury
- 4. Be able to demonstrate the "Athletic Stance"



# **ACL Injury Prevention Program**

# The Program

This ACL injury prevention program is designed to help reduce your ACL injuries thereby reducing your workers' compensation claims. It is imperative that the kit be used as designed in order to achieve the desired results. The elements of the program include:

- ACL Injury Prevention DVD/Video The program begins with a 30-minute ACL Injury Prevention training class. The ACL Injury Prevention DVD/video is the focus of this initial training. Present this training class, including the DVD video, to every on-mountain skiing/riding employee during their first 10 days on the job.
- Quick Tips Five short (10-minute) training topics to re-enforce the initial 30-minute ACL Injury
  Prevention training class. Quick Tips are designed so that each department with on-mountain skiing/
  riding employees can train its employees in smaller groups. Conduct monthly Quick Tip training for all onmountain skiing/riding employees.
- Posters The three posters are designed to re-enforce the initial 30-minute training class. Display
  posters are included on the CD. Print enough posters to be displayed in each department with onmountain skiing/riding employees. Change the poster each month. Do not display all three posters at
  the same time. It is important to change the posters monthly to continue the reinforcement process and
  send a new/fresh message each month.

#### COLOR CODING GUIDE:

Blue - Supplies Black - Key talking points Red - Questions you need to ask Green - Training tips

# **ACL Injury Prevention Training**

# **Trainer's Instruction Sheet**

Supplies		<ul> <li>DVD, DVD player and screen large enough for all participants to see (set this up before class begins)</li> <li>Training Overview – if you are not using the PowerPoint, make copies of the training overview page (found on page 4 of this guide) for all participants, or copy the information onto a flipchart, whiteboard or chalkboard to display</li> <li>Safety Training roster (Sign-in Sheet)</li> <li>Prize for volunteer</li> </ul>
3 min	Introduction	<ul> <li>Training overview</li> <li>Talk through the goals, your agenda and working agreements</li> <li>Ask participants to be open to new ideas – address the misconception that ACL injuries can't be prevented (the emphasis of this program is that ACL injuries CAN be prevented!)</li> <li>Ask them if they have any working agreements that they would like to add before moving on</li> </ul>
1 min	Intro to Video	<ul> <li>Tell them what they'll see in the video:</li> <li>The Danger Zone – the body position that tends to result in ACL injuries</li> <li>What exactly happens in an ACL injury, the reconstructive surgery and the rehabilitation process</li> <li>Testimonials from actual resort employees who have blown their ACL</li> <li>The Athletic Stance – a stance that could truly save you from an ACL injury</li> <li>Things you can do to prevent an ACL injury when you find yourself in a fall</li> </ul>
14 min	Video	DVD – DVD player and screen large enough for all participants to see
4 min	Video Debrief	<ul> <li>Ask participants to work together in small groups (or pairs) and spend 1-2 minutes talking about the key points in the film</li> <li>Ask small groups or pairs to share what they talked about (can ask everyone or just select groups depending on class size)</li> <li>Recap four major points of the film</li> <li>Ask participants to fill in the details of the main points (provide clarification when necessary)</li> </ul>
5 min	Practice Athletic Stance	<ul> <li>Prize for volunteer</li> <li>Ask for a volunteer to help demonstrate the stance</li> <li>Offer an awesome prize for volunteering</li> <li>Demonstrate the stance and talk through what you're doing (lean on the wall)</li> <li>Have the volunteer demonstrate the stance and talk through what they're doing</li> <li>Ask all participants to pair up and take turns practicing the stance leaning on a wall</li> <li>Give the volunteer some sort of prize (even if it's just a candy bar)</li> </ul>
3 min	Conclusion	<ul> <li>Training overview</li> <li>Safety Training roster (Sign-in Sheet)</li> <li>Review each objective</li> <li>Ask participants for feedback – did you meet your goals?</li> <li>Mention that the ACL Injury Prevention message will continue throughout the season with posters and Quick Tips</li> <li>Explain your commitment to preventing ACL injuries and ask participants to sign the roster – which is also their commitment to follow the safety guidelines they've learned in the session</li> </ul>
Trai	ning Tips	<ul> <li>Eye contact with every participant</li> <li>Move around</li> <li>Use gestures (but don't fidget)</li> <li>Speak clearly, use vocal inflection</li> <li>Be energetic and enthusiastic</li> <li>Ask for audience response to questions and be patient waiting for them to answer</li> </ul>

# **ACL Injury Prevention Training**

# **Training Overview**

This information should be presented during the initial 30-minute training program. Slides containing this information have been included in the PowerPoint presentation.

# Goals

- · Recognize when you are in the "Danger Zone"
- Understand the right way to ski/ride and to fall
- · Understand the repercussions of an ACL injury
- · Be able to demonstrate the "Athletic Stance"

# Agenda

- Introduction
- Watch video
- · Discuss video
- Practice
- Sign roster

# **Working Agreements**

- · Fully participate
- Be open
- •
- -

ACL Injury Prevention Program developed by Pinnacol Assurance



**ACL Injury Prevention Program** 

Ski A	rea/Resort:					
Date/	Time/Location:					
Safety Topic:		<ul> <li>30-minute ACL Injury Prevention</li> <li>Quick Tip #2 – Preventing the Big Move</li> <li>Quick Tip #4 – Testimonial</li> </ul>		Quick Tip #3	ip #1 – Warm-Ups/Stretching ip #3 – Athletic Stance ip #5 – Snowboarder Safety	
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# WARM-UPS/STRETCHING

Note to trainer: This topic is designed to discuss the importance of warm-ups and stretching before starting on-mountain work. Use the questions and statements in bold to lead the discussion. The bullet points are desired responses or facts you can share with the group. A complete warm-up and stretching can take up to 30 minutes; this session only needs enough time to discuss the importance of warm-ups and stretching and how to do them correctly.

**Q: Are warm-ups and stretching the same thing?** (The correct answer is no. Ask them to tell you what the difference is between warm-ups and stretching. Your discussion should include the following:)

- The purpose of warming up is simply to get the blood moving in your large muscle groups and prepare you for activity. You want to warm-up the muscles that you will be using in a controlled environment so that these muscles get fresh warm blood and oxygen and are ready to go to work.
- Examples of warm-ups include a brisk walk, slow jog, slow jumping jacks, skipping, jogging backwards (Do a warm-up with the group have fun skip around in a circle while doing giant circles with your arms you can ask your group the next question and discuss the answer as you are skipping around in a circle)

#### Q: What are some guidelines for how to stretch?

- Intensity should be to a point of mild discomfort not pain!
- Breath normally don't hold your breath
- · Don't bounce stretches should be smooth movements
- · Hold each stretch for 30 seconds

# When done correctly, stretching helps to improve flexibility, reduce stiffness and soreness, and improve mobility and range of motion.

#### Q: After you have warmed up, what are some stretches that you can do to help to protect your ACL?

- Quadriceps Stretch (Hold for 30 seconds, 2 reps each side). Place your left hand on a wall or other sturdy object. Reach back with your right hand and grab the front of your right ankle. Bring your heel to your buttock. Make sure to keep the knee pointed down toward the ground and your knees together. Do not allow the knee to turn out to the side and do not bend at the waist.
- Hamstring Stretch (Hold for 30 seconds, 2 reps each side). Sit on the ground with your right leg extended out in front of you. Bend your left knee and rest the bottom of your foot on your right inner thigh. With a straight back, try to bring your chest toward your knee. Do not round out your back. If you can, reach down toward your toes and pull them up toward your head. Remember not to bounce.
- Calf and Hip Flexor Stretch (Hold for 30 seconds, 2 reps each side). Stand in a forward lunge position, with your back leg straight and your front knee bent. Shift your weight forward onto your front leg, while keeping your knee bent. Shift your weight forward while keeping your back straight. Tighten your abdominal muscles. You should feel a stretch in the calf and in the front hip of the back leg.
- Inner Thigh/Butterfly stretch (30 second hold, 3 reps). Sit on the ground and bring your feet in together allowing the soles of your shoes to touch. With both hands, grab onto your shoes pushing down your knees with your elbows. Do not bounce.

Each of these stretches targets the muscles around your ACL. If these muscles are strong, they can help to absorb the forces that occur in the Danger Zone or in a fall that can tear your ACL. (Demonstrate each stretch to the group and have them do each stretch together. Ask the group if they think they could now do a warm-up and these stretches before skiing/riding.)

# You CAN prevent an ACL Injury. Don't miss this ski season.



**ACL Injury Prevention Program** 

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# PREVENTING THE BIG MOVE

Note to trainer: This topic is designed to be a conversation about avoiding ACL injuries while skiing/riding. Use the questions and statements in bold to lead the discussion. The bullet points are desired responses or facts you can share with the group. Your group may be mixed between skiers, snowboarders, and tele-skiers. To bring all of these people into the discussion, remember to tell them that ACL injuries can happen to anyone.

**Q:** Do you know anyone who has had an ACL injury? (*Have employees tell what they know about someone who had an ACL injury*). How did it affect their life activities? (*If no one says anything, the instructor can say, "well I know someone…and it was long and painful and they lost their whole ski season…etc."*)

**Q: When you're on the hill, when do ACL injuries usually occur?** (Have employees explain how they think ACL injuries usually occur)

- When you're falling
- · When you're in the back seat
- When you're jumping
- Getting on or off the lift

#### These are all occasions when you are putting your knee at risk.

#### Q: When falling, what body positions put you in the danger zone of injuring your ACL?

- Hips below knees
- Hands and shoulders back
- Weight on the back of the skis, or leaning back on the board off balance being in the back seat

# **Q:** Think back to the ACL injury prevention video, who here can tell us, what the "Big Move" is? (*Have employees explain what they know*)

- The Big Move is trying to pull yourself back up during a fall once your hips have fallen below your knees. It's that pulling motion that puts extensive pressure on the ACL. That's why it is usually the downhill ski that gets the injury – the force is all on that knee.
- Avoid the Big Move. Pull your hands together, pull your feet together, finish the fall. Your ego may suffer but you've saved your ACL.

#### Q: What do you do when you are down?

• When you're down...stay down. Come to a complete stop before you try to get up.

Let's review. Nobody likes to fall, but if you pay attention when you're falling and you pull your hands together and pull your feet together, and come to a complete stop, you can minimize the risk of injuring your ACL. (Add any other summary information from your discussion with the group.)

## You CAN prevent an ACL Injury. Don't miss this season!



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# ATHLETIC STANCE

Note to trainer: This topic is designed to be a conversation about avoiding ACL injuries while skiing/riding. Use the questions and statements in bold to lead the discussion. The bullet points are desired responses or facts you can share with the group. Your group may be mixed between skiers, snowboarders, and tele-skiers. To bring all of these people into the discussion, remember to tell them that ACL injuries can happen to anyone. **This class is best taught with everyone standing up.** 

**Q: Has anyone heard of the** *Athletic Stance*? (If yes, have someone demonstrate, if no, demonstrate for the group. The instructor should look for and point out the following key points:)

#### For Skiers:

#### For Snowboarders:

Knees bent

Centered on board with knees bentKnees track directly over the toes

- Hip-wide stance
- Hand/arms forward in the ready position

**Q: Let's talk about the** *Athletic Stance* **when you're on the hill.** (*Ask all the skiers to demonstrate the Athletic* Stance, *ask the snowboarders to demonstrate the Athletic Stance, ask the tele-skiers to demonstrate the Athletic* Stance. *Then say:*) **Regardless of what your job is, you can all use the** *Athletic Stance* **in almost everything you do... lifting, bumping chairs, etc. to be ready for whatever is coming at you.** How would you use the *Athletic Stance* **in your job**? (*Allow several employees to give their own personal job-related examples.*)

(This next section should be used for groups that have only alpine skiers.)

**Q: What are some of the advantages of the** *Athletic Stance* **for you?** (*Demonstrate the* Athletic Stance *for alpine skiers and have the group point out key features, or tell them:*)

- The *Athletic Stance* in skiing/riding is a hip-wide stance where the downhill knee remains more stacked and doesn't bend beyond the other knee.
- In other words, it's when you're keeping your knee between your foot and hip. It takes much less knee angulation and pressure on shaped skis to make them turn vs. older straight skis.
- Keep your legs and body in a more stacked and upright posture where your muscular-skeletal structure is more aligned.

(Again, your demonstration of the Athletic Stance should include:)

- · Hip-wide stance
- · Knee should be aligned between foot and hip
- Hands and arms forward

# The Athletic Stance can prevent ACL injuries. Don't miss this season!



**ACL Injury Prevention Program** 

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# TESTIMONIAL

Note to trainer: Inform the group that this is a testimonial from an Arapahoe Basin ski/ride instructor. Please read the following:

"I've coached racing 20 years, participated as a racer in the NCAA, was on the national team, and I've been an examiner for PSIA. Basically, I have been skiing for 47 years and this is the first time I've ever hurt myself."

"January 2006, I was skiing with a clinic of instructors on Sundance, an easy green run, coming to a stop, very simple fall, very slow, couldn't believe it actually happened."

"I had taken my focus off of my skiing before I came to a complete stop. So I wasn't completely balanced. Started talking to group before I came to stop."

"It was a nothing fall. Nothing spectacular, I was barely moving."

"When I teach, I'm not always focused on what I'm doing, mostly to what the students are doing. "

"So this year I'm paying a little more attention to my body movements, not just the students. Don't finish concentrating on your skiing or riding before you're stopped."

"This can happen to anybody."

#### (Additional notes to tell the group)

Kim injured herself on January 12, 2006, and was unable to ski for the rest of the season. She underwent surgery and countless hours of physical therapy. She was finally released to return to work and to the slopes in the fall of 2006. So she missed the whole season. This injury greatly affected her life and will continue to put her at a higher risk for future knee problems.

Q: What do you think she could have done to prevent this injury?

- Focused on her own skiing until she came to a complete stop.
- Finish the fall; when you're down...stay down.

## You CAN prevent an ACL Injury. Don't miss this ski season.



**ACL Injury Prevention Program** 

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# SNOWBOARDER SAFETY

Note to trainer: Compared to alpine skiing, ACL injuries are not as common with snowboarders. However, snowboarders still have ACL injuries and there are actions that snowboarders can take, and risks they can avoid, to reduce ACL injuries. This topic is designed to be a conversation with a group of snowboarders about preventing ACL injuries. Use the questions and statements in bold to lead the discussion, the bullet points are desired responses or facts you can share with the group.

**Q: Has anyone had an ACL injury that occurred while snowboarding?** (If yes, ask them to tell the group how it happened.)

**Q: When do you think ACL injuries occur with snowboarders?** (Allow your group to come up with some answers and discuss the following:)

- Beginner snowboarders are the most likely to get injured this is mostly due to the high frequency of falls during the learning process forward falls are particularly hard on the knees.
  - $-\frac{1}{4}$  of snowboarder injuries occur on their first day
- "One footing" snowboarders often need to push themselves forward with a free foot, leaving the other foot locked on the board at a 45 to 90 degree angle. This locked-in leg is at risk for knee injury if a fall occurs due to the large torque force on this leg. What are other times when a snowboarder might have one foot free and one foot locked to the snowboard?
  - Getting on the lift
  - Getting off the lift
  - Teaching demonstrations
- Terrain Parks
  - Jumps/flat landings/heavy impacts

**Q: What can you do as a snowboarder to protect your ACL?** (Many of the same general prevention tips for skiers apply to snowboarders – discuss the following:)

- Use the Athletic Stance knees bent, hands and arms forward.
- Don't fight the fall, when you're down stay down.
- Take care when one foot is out of your binding. Fitting a stomp/slip pad between the two bindings gives the free boot somewhere to grip and makes things less slippery.
- Reduce risk in terrain parks don't jump unless you know where and how to land.
- Consider equipment –hybrid or mid-stiffness boots, multi-release bindings, and rear release boots have all been shown to help prevent snowboarder ACL injuries.

# Snowboarders can injure their ACLs too! Don't miss this season!



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