
Teaching Cognitively Impaired Skiers

What is a Cognitive Impairment?

There are two main categories: developmental disabilities (DD) and cognitive disabilities.

- A developmental disability is a condition from congenital abnormalities, trauma, disease, or deprivation that delays normal growth and development. A developmental disability appears during the first 18 years of life and can have an indefinite duration.
- A cognitive disability is damage to or deterioration of any portion of the brain that affects the ability to process information, coordinate and control the body, and/or move in space. A cognitive disability can be organic (related to disease) or non-organic (caused by injury or trauma).

Cognitive impairment encompasses a wide range of processing difficulties, in addition to physical and social or emotional impairments. The cognitive impairment can range from mild to profound, and may be associated with behavioral difficulties and/or secondary conditions (such as epileptic seizures).

The brain is responsible for all that we do. When the brain is injured, the extent of the impairment depends on the location and severity of the damage. Cognitively impaired skiers may exhibit a wide range of conditions.

Skiers with a cognitive disability may require adaptive equipment and teaching approaches. Many skiers with developmental/cognitive disabilities are two-track skiers, depending primarily on the level of physical impairment. Therefore, the skiing progressions follow normal ATS lesson plans.

Common Disabilities associated with Cognitive Impairment	Common Medications to Consider
<ul style="list-style-type: none">• Brain injury• Developmental disorder• Mental retardation• Down's syndrome• Autism	<ul style="list-style-type: none">• Anticonvulsant (seizures)• Psychostimulant (attention span)• Sedative (anxiety, tension)

Student Assessment and Equipment Fitting

Some key things to consider when assessing a skier with a cognitive impairment:

- Evaluate cognitive, emotional, and social behavior to help decide the best teaching approach. Try to figure out how the student learns so you can adapt your style. Watch for issues with frustration, lack of concentration, or lack of desire to ski. Try to deal with these proactively. Avoid the problems whenever possible.
- Check for other physical limitations: balance, ability to rotate the torso, arm strength, stance issues, visual or hearing impairments. Any deficiencies may need to be compensated for.
- Many students have a “stronger side” and a “weaker side.” The student may require adaptive equipment to help the weaker side. A ski bra often helps, and reins might be needed.
- What additional support does the skier need? Are equipment adaptations necessary? For best results, start with less equipment and add devices as needed.
- Don't have students carry poles if they interfere in the skiing.

- Some DD students are prone to spasticity and may have trouble holding a wedge turn. In this case, skip the wedge.
- Behavior may be an issue. Assess the level of independence, judgment, and social skills.

Skis

The skis are normal alpine skis. Use ski shop recommendations for able-body skiers as a guide for similar size adaptive skiers.

Boots

Should be snug but not too tight. Objective is to get an athletic stance over a flat ski. You may need to cant with lifts or wedges inside the boot to obtain this. (one-half inch max) Orthotics or braces may be used to help maintain stability.

❖ If the skier normally wears leg braces, a larger boot may be needed.

Slant Boards

It may be necessary to use slant boards or other adaptive equipment to help the skier achieve a flat ski. Can help achieve for/aft pressure beyond what boot lifts can do. Bindings can only be adjusted by a certified technician.

Reins/Tethers

Reins connect to the skier's ski bra and allow the instructor to control speed and shape turns.

Ski Bra/Spacer Bars

A ski bra is a device that connects the ski tips to stabilize the tips of the skis. Reins can be connected to the rings on the ski bra to provide additional support. A spacer bra is used between the skier's feet for lateral support. Never allow a skier to slide backward while wearing tip stabilizers!

Harness

Use a harness to secure the skier to the chairlift to prevent falling. Always used with skiers who experience seizures. Check medical form to see if a harness is required. When in doubt, use a harness. A harness can also be used to help control speed and provide tactile input without directly touching the student.

Helmets

Individuals with head injuries are usually required to wear helmets. Check the skier's medical form to see if head protection is required. Some students may have shunts that must be protected.

DD/Cognitive Impaired-Specific Teaching Techniques

Teaching a DD skier should follow the basic ATS progressions, but often requires additional attention to communication techniques and behavior modification.

Make the lesson fun and positive! Try playing games whenever possible. Do whatever it takes to get the student interested in learning to ski. Find out more about the student, especially interests in other sports that can be transferable to skiing.

Communication Techniques

- Be explicit and present only one task at a time — Keep it simple.
- Treat individuals according to age
- Pace lessons and learning for the individual
- Allow social interaction
- Use kinesthetic and visual teaching styles. Use demonstrations not lectures!

- Clap hands, repeat name to get attention

Behavior Modification

- Be in charge and stay calm (use time-outs if necessary)
- Be consistent
- Don't bribe the student — Use written contracts and trade offs
- Be a positive role model
- Seek help from Lead Volunteers if needed
- Use family or institution as a resource
- Be aware of medication changes

Chairlift Loading and Unloading

Safety is the key!! If needed, ask the lift operator to slow down or stop the chair. For more information about chairlift procedures, including emergency procedures, see Chapter 2, "Safety Procedures and Policies" in the SKIFORALL Volunteer Manual.

Keys to success:

- Explain to the student what will happen and what you need the student to do.
- Communicate with the lift operators at both the top and the bottom of the lifts. Never assume they know or remember what you need. Report any problems with lift ops to your Lead Volunteer.
- The first time the student rides the chairlift, slow down or stop the lift when loading and ask the lift operator to warn the operator at the top of the lift. Stop the lift for unload.

❄ Lesson Plan: Introduction to Equipment

Goals

- Introduce the equipment, allow the student to feel the equipment. Explain functional aspects and safety features.
- Allow the student to gain a good understanding of how the equipment works.
- Teach appropriate body position — neutral athletic stance.
- Explain the safety code.

Teaching Tips

- Keep it simple! When introducing skis for the first time, keep the technical talk to a minimum. When they go from skidded turns to carved turns, then start to talk about ski technology.
- Discuss the guiding methods with the student and come to an agreement on which to use. Ultimately, let the student decide how to be guided. Consider terrain and weather conditions as well as crowds on the slopes. Choose the most effective means of guiding for the conditions.
- Take time to get to know your student and create a bond of trust.

Exercises

- Show your student the boots and how the buckles work.
- Show your student the skis, warning of sharp edges.
- Show your student their bindings.
- Practice getting in and out of skis.
- Demonstrate the appropriate body position and balance. This will most likely require touching the student and moving the body into the correct positions. Ask first and explain what you are doing!
- Take time to set up equipment properly to ensure that student is balanced over a flat ski.

❄ Lesson Plan: Flatland Drills

Goals

- Introduce the equipment. Explain functional aspects and safety features.
- Teach appropriate body position — neutral athletic stance: Flexed ankle, knee, hips, centered over the foot.
- Explain the safety code.
- Learn side step.
- Learn how to turn around.

Teaching Tips

- **Don't be afraid to spend extra time on the flats!** Run through all of the movement patterns in the safe environment before moving to the chair lift.
- Have the skier do as much of the work as possible, but be careful not to wear them out too soon.
- Pick terrain for safety.
- Teach to your students learning style.
- Confidence and a smile will go a long way.
- Introduce the safety code, and continually refer to safety issues.

Exercises

- Warm up with gentle stretching. (Note: we do not promote any head/neck stretching!)
- Walk around in boots.
- Practice getting in and out of bindings.
- Walk around one ski on follow the leader then switch feet.
- Turn around tips together then tails together.
- Practice side step and herringbone.
- Falling and getting up, don't teach until it happens.

Two methods for getting up:

- a. skis across fall line push off with uphill hand
- b. belly down, skis spread, walk up with hands

Skills Concept (BERP) Review

- ◆ **Balancing movements** — Promote small steps to keep mass over feet.
- ◆ **Edge-control movements** — Emphasize for side step and for walking around in circles.
- ◆ **Rotary movements** — Look for active “inside leg” steering even when walking around.
- ◆ **Pressure-control movements** — Talk about feeling the whole foot when walking around on the flats.

❄ Lesson Plan: Straight Run

Goals

- Add movement to flatland drills by having skier do a straight run.
- Challenge the skier's balance while focusing on maintaining correct body positioning and athletic stance while moving.
- Learn braking and gliding wedge.
- Start to gain some independence through skills that move them around, i.e., side step and herringbone.

Teaching Tips

- Keep tasks specific and small. One task at a time. Work to keep the student's attention.
- Review wedge position from walking around drills.
- Use static drills to "spread the snow" into wedge.
- Review how equipment is fitting now that the student has spent some time in it.
- Safety tips are cool.
- Hands forward will help keep student out of the back seat
- Don't spend too much time in the wedge position, students with certain body types tend to get comfortable and "locked into" a comfortable wide wedge.

Exercises

- Straight run to a natural stop.
- Straight run with steps to turn out right and left to stop.
- Straight run change ups. Gliding braking wedge.
- Stop and go.
- Herringbone and side step to gain elevation.

Skills Concept (BERP) Review

- ◆ **Balancing movements** — Promote tall, relaxed stance. Keep hips over feet.
- ◆ **Edge-control movements** — Minimal for straight run and increased with braking wedge.
- ◆ **Rotary movements** — As needed to step to turn out. Steer feet into wedge position.
- ◆ **Pressure-control movements** — Pressure on the whole foot and shin to cuff contact will help student stay out of the back seat.

❄ Lesson Plan: Wedge Turn (on the flats)

Goals

- Learn how to use turns to change direction, control speed and to stop.
- Link wedge turns.
- Learn to ride the chair lift.

Teaching Tips

- Do not move to the chairlift until the student can comfortably make turns and stop.
- Keep tasks specific and small. One task at a time. Work to keep the student's attention.
- While it may be necessary to use upper body rotation to initiate first turns, it will be helpful to promote foot/leg steering as soon as possible.
- Choose appropriate terrain.
- Vary the size of the turn radius.
- To help the student make a wedge, try the following techniques: Reverse wedge, two-point hold, bamboo pole(s), and lots of hands-on.

Exercises

- From straight run, add small turns in both directions. Begin by looking in direction of the turn. Increase amount of turn as it becomes more comfortable.
- From a straight run turn to stop.
- Wedge change-ups.
- Follow Me — have student follow you making wedge turns. You may need to employ a technique such as two point hold or horse and buggy if “follow me” does not work.
- Advanced wedge turns — with weight transfer, flexion and extension, good rotary.
- Garlands — focus on either turn initiation or finishing the turn. Show how leaning forward and looking downhill starts a turn and how returning to neutral position helps end a turn.

Skills Concept (BERP) Review

- ◆ **Balancing movements** — Promote Maintain balance while moving.
- ◆ **Edge-control movements** — Maintain flat ski, until speed and pitch require increased edge angle.
- ◆ **Rotary movements** — Turning forces closest to the snow.
- ◆ **Pressure-control movements** — Pressure on cuff of boot to aid turn. Begin weight transfer.

❄ Lesson Plan: Wedge Christie Turn

Goals

- Control speed using turn shape and terrain. Increase size and variety of turns, moving to more difficult terrain.
- Match skis at or about fall line.
- Introduce pole touch.
- Initiate turns faster, switching between medium– and short-radius turns.
- Increase fore/aft pressure movements and countering during turns for more active crossover.

Teaching Tips

- When introducing a new skill choose terrain for success.
- Slight rise to initiate and slight sink to steer. Extend off the outside leg and direct the center of mass into the turn.
- Work a safety tip into the lesson whenever appropriate.
- If the inside ski hangs up or a step is needed to match skis, promote inside ski tip and knee lead into the turn.
- To promote earlier matching, practice narrower wedge turns on beginner terrain, then move to slightly steeper terrain.

Exercises

- MILEAGE!! Practice variety of turn shapes.
- Traversing, traversing with small steps, traversing with side slip.
- Uphill Christie Fan progressions — experiment with body positions.
- Falling leaf — try leaning too far forward, too far back, centered and notice differences.
- Side slipping — begin experiments with edging. The body stays down the hill.
- Garlands — focus on beginning and ending turns correctly.
- Skating on the flats.
- Use pole touch for timing new turn and encouraging countering down the hill.

Skills Concept (BERP) Review

- ◆ **Balancing movements** — Quiet upper body aids in balance recovery. Keep mass over feet.
- ◆ **Edge-control movements** — Create edge angles with foot, knee, hip.
- ◆ **Rotary movements** — Promote foot steerage.
- ◆ **Pressure-control movements** — Leg contact with boot cuff. Start to experiment with rise and sink and how that affects turn initiation and completion.

❄ Lesson Plan: Parallel Turns and Beyond

Goals

- Link parallel turns with pole touch. Active and dynamic steering of the feet.
- Greater upper and lower body separation. More active countering and carving turns.
- Skiing any run, including black diamonds, in control with more active and controlled turning.
- Ski all snow conditions.
- Introduction to bumps, powder, and running gates.

Teaching Tips

- Emphasize a counter stance with body moving toward center of the new turn.
- The parallel turn begins as a skidded turn. Gradually it becomes a carved turn. Promote active steering of the inside ski.
- Assess terrain and snow conditions when planning the lesson. Look for ways to ensure success, while challenging the skier. Choose a bump run with an easy exit onto groomed. Choose powder next to a groomed run.
- For powder skiing, promote a wider, more even-footed stance and pressure.

Exercises

- Skating with slight hold in glide.
- Uphill Christie Fan progressions experiment with body positions.
- Refine pole touch (touching toward the center of the turn).
- Hop turns, leapers, 1000 steps, hockey stops.
- Skate on slight downhill grade.
- For bumps, traverse a bump run in a “box,” turn on the tops then in the troughs.
- For powder, three turns in groomed and one in powder and slowly increase the number of turns in the powder.
- Ski an open GS course on gentle terrain.

Skills Concept (BERP) Review

- ◆ **Balancing movements** — Quiet controlled movements make balance recovery much easier.
- ◆ **Edge-control movements** — Look for edge angles created with feet knees and hips.
- ◆ **Rotary movements** — Upper lower body separation will aid in low body steering.
- ◆ **Pressure-control movements** — Flexion and extension will aid in appropriate ski to snow pressure.

Notes

