



ROCKY MOUNTAIN DIVISION
Professional Ski Instructors of America
American Association of Snowboard Instructors

ADAPTIVE EXAM GUIDE for ASB Cognitive Challenged Riders

Revision 5-2019

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Local regulations and safety guidelines take precedence over this information. It is in your best interest to exercise due diligence in determining the appropriateness of the information for your particular circumstances. In addition, please take into account any and all factors that may affect your lesson. This includes but is not limited to: the health, well-being and fitness of the student; weather conditions; terrain; other people on the slope; your own abilities, as well as those of your student and anyone who may accompany you.

This guideline provides diagrams from third party sources. The content of any such third-party diagrams are not within our control, and we cannot and will not take responsibility for the information in them, nor should any references to them be considered any endorsement by PSIA.

Please refer to the Adaptive Alpine Manual, available through PSIA/AASI-RM or PSIA/AASI National: <http://www.thesnowpros.org/shop/catalog/details?productid=%7B7E0BC90B-4972-45FA-8C89-E8C432745502%7D> and all the addendums available to it. Especially useful should be the “Disability and Medication” one schedule to be online fall 2019 where you can find much more of the disability information and Snow sport specific comments. Also helpful will be the **online Adaptive-specific courses on Cognitive Disabilities** offered through <https://members.psia-rm.org/events/events-listing>

Students in this **classification of Cognitive Disabilities** comprise a widely diverse population with many different disabilities, which may encompass physical weaknesses and/or cognitive processing difficulties.

In general, a **developmental disability** is a condition resulting from congenital abnormalities, trauma, disease or deprivation. It interrupts or delays normal fetal, infantile or juvenile growth and development. The onset of a developmental disability occurs before age 18 and it then persists throughout the remainder of the individual’s life. Some common developmental disabilities include autism, cerebral palsy, Down syndrome, epilepsy and intellectual disability (mental retardation).

A **cognitive disability**, on the other hand, is caused by damage to, or deterioration of any portion of the brain. It may affect the individual’s ability to process information, coordinate and control the body or move in space. A cognitive disability may be caused by trauma (e.g., a traumatic brain injury) or disease (e.g., a brain tumor, a cerebrovascular accident (stroke), Alzheimer’s, Huntington’s or Parkinson’s).

Common Cognitive and Developmental Disabilities

These are some of the most common cognitive and developmental disabilities. Note that some of these disabilities may have no effect on an individual's cognitive ability or ability to learn new skills.

- Alzheimer's Disease (AD)
- Attention Deficit Disorder (ADD/ADHD)
- Autism Spectrum Disorders
- Cerebral Palsy (CP)
- Cerebrovascular Accident (CVA, stroke)
- Cognitive Disability
- Developmental Disability (DD)
- Down Syndrome
- Epilepsy
- Fetal Alcohol Syndrome (FAS)
- Fragile X Syndrome
- Hemiplegia
- Intellectual Disability (mental retardation/MR)
- Learning Disabilities
- Post Traumatic Stress Disorder (PTSD)
- Sensory Processing Disorder
- Traumatic Brain Injury (TBI)

Evaluation of Student

The complexity of this classification requires knowledge of the many disabilities, their causes and effects upon riding performance, plus commonly used medications. *A complete and detailed student analysis is imperative to determine the physical, cognitive and emotional strengths and weaknesses of the student.* A thorough check of present medications provides important information relative to stamina and sensitivity to the environment, as well as attentiveness and interpersonal skills.

Usually the ASB skill progression needs to be modified to comply with the physical and cognitive abilities of the student. Matching learning preferences with teaching styles enhances the learning environment for the student. Frequent demonstrations and a focus on small, obtainable goals and accomplishments are some of the most successful teaching strategies. Providing individual positive feedback along the way helps to maintain the student's motivation

and interest. Students who have a cognitive or developmental disability benefit from an individual assessment and tailored lessons.

A thorough review of primary and secondary abilities, along with their cause and effect upon skill performance and cognitive processing, should be made. Students who have a cognitive or developmental disability frequently have other involvements, some apparent, some hidden. A thorough evaluation reveals this. Often there are medical problems which are not evident. For example:

- **Past surgical procedures** can have a long-term impact on the student. Students with cerebral palsy frequently have orthopedic surgery to reduce spasticity by lengthening muscles and tendons.
- **Secondary disabilities or conditions** are common. A person with Down syndrome may have heart complications, hearing problems, cervical weakness, hypothyroidism or even have an early onset of Alzheimer's disease.
- **Behavioral and emotional difficulties** are often the direct result of a cognitive or developmental disability. A person with Alzheimer's disease or a post traumatic stress disorder may be susceptible to mood swings or sudden outbursts.
- **Poor judgment** is associated with some cognitive and developmental disabilities. A person with Down Syndrome may be inappropriately friendly, even to strangers; a person with sensory processing disorder may have difficulty assessing risks.
- **Cognitive difficulties** are present with some cognitive and developmental disabilities. A cerebrovascular accident may cause short- or long-term memory problems; a traumatic brain injury can make it difficult for a person to make decisions, process information or understand abstract concepts.
- **Perceptual difficulties** are present with some cognitive and developmental disabilities. Multiple sclerosis, Down syndrome and cerebrovascular accidents can sometimes cause difficulties seeing or hearing; a traumatic brain injury can affect any of the senses, depending on the location of the brain injury.

This list goes on and on. Never assume anything!

Medications can also create problems and need to be reviewed. Side effects of medications can, for example, make a student listless, slow to respond, nervous, sensitive to the sun or muscularly weak. Medication timing is important because adverse reactions to lack of medication, or low medication levels, are common.

Much information can be gained by asking your student about other sports and activities in which he or she participates. Bicycle riding indicates some balance and independent leg action; ball activities indicate eye-hand coordination and some spatial judgment. Knowledge of

sports activities and interests, plus information about the student's daily schedule can help you access both physical and cognitive abilities. This may also be used for teaching for transfer of skills.

In addition to the student, other resources may offer valuable insights. Parents, spouses or other caregivers can provide the most detailed information regarding a student's cognitive processing strengths and needs. Many schools have a Special Education Team that creates an individualized education program (IEP) for school and parents of children with special needs. This information may assist with your initial assessment of a student. Just be sure not to ignore the student as you are gathering this additional information.

Equipment and Physical Assists

Students who have cognitive or developmental disabilities often have difficulty with motor planning, balance, and fine muscle or gross motor coordination. Adaptive equipment such as a bamboo pole, SB-clamp/s or Harness & tethers may be utilized to assist with directional changes for speed control, balance and coordination.

Different binding systems, such as step-ins, Flow bindings or cants, either under the boots, inside the bindings or in the boots and other unorthodox binding set-ups and other adaptations might be used, depending on your students individual needs.

Physical assists

Physical assists are useful methods to for a student to experience how a turn should feel. You can also use them in a situation where unexpectedly advanced terrain or fear can prohibit your student from riding down on his/her own. Remember to always ask your student's permission before making physical contact.

The Dance (facing your student or riding behind your student with your hands on their hips or seat harness) is often used to assist the student in keeping their balance, turning and stopping. It is also an effective way to kinesthetically teach a new movement to a student with a cognitive or developmental disability.

There are variations to the way you hold on to your student, such as using a bamboo pole or a hula-hoop / Ski Pal.

Stand-up tethering

Stand-up tethering is an important assist technique that utilizes a seat harness to tether from the student's hips or SB-clamp/s to tether from the snowboard and tethers. Once your student can achieve some balance on his/her SB, this assist can be useful for students who:

- Lack the cognitive ability to understand directions (e.g., intellectual disability, Down syndrome)
- Have no fear of dangers such as speed or obstacles (e.g., sensory processing disorder, autism)
- Are easily distracted and over-stimulated in a "magic carpet" type environment where other students would normally learn to turn and stop (e.g., autism, ADD/ADHD)
- May have the cognitive ability to understand concepts but not the strength or capability to make appropriate movements (e.g., CP, TBI)
- Learn best with a kinesthetic approach that can develop muscle memory

Practice stand-up tethering before trying it with students as it takes skill and finesse to ensure safety and enjoyment for the student. As the tetherer, you have the ability to:

- **Control speed** - by utilizing the slope and through turn shape. Be careful not to jerk the tethers, as this could cause the student to fall.
- **Assist with turns and turn shape** - with active tethering in different parts of the turn
- **Assist with edge use** - by guiding the board back into the fall line when your student creates too high of an edge angle.

If the student is capable, the tethers can eventually be removed for greater independence

The use of a ***bicycle inner tube connected to two Ski poles or Bamboo Poles*** can be substituted for the full harness and tether set-up if you are familiar with it and have practiced it.

Hula Hoops^{®1}, Ski-Pals^{®2} and Sno-Wings^{™3}

Hula Hoops, Ski-Pals and Sno-Wings offer great flexibility for teaching adaptive students. The student can be positioned inside of these devices with you riding facing your student or directly behind them. You can then guide turns in a manner similar to tethering.

¹ Hula Hoop[®] is a registered trademark of Wham-O, Inc.

² Ski-Pa^{®1} is a registered trademark of Ski-Pal, LLC.

³ Sno-Wing[™] is a trademark of Johnny Boy Enterprises, Inc.



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Using other adaptive equipment

Some students may require the use of more involved adaptive equipment, such as sit-down skis, outriggers or the slider. See the other PSIA-RM Adaptive Exam guides for information on this equipment.

Adaptive SB Teaching objectives for students with Cognitive or Developmental Disabilities

The following is based on the AASI Snowboard Teaching Handbook <https://www.psia-rm.org/product/snowboard-teaching-handbook/>

Please refer to the Handbook. Leave out exercises that do not make sense for your student or unnecessarily wear them out and focus on what the student can do!

It is in your best interest to exercise due diligence in determining the appropriateness of the information for your particular circumstances. In addition, please take into account any and all factors that may affect your lesson. This includes but is not limited to: the health, well-being and fitness of the student; weather conditions; terrain; other people on the slope; your own abilities, as well as those of your student and anyone who may accompany you.

One-on-one conversations with the students, parents or caregivers are extremely valuable prior to the actual lesson. The more communication and assessment that can be done up front, the better!

Beginner / Novice Zone Objectives

Level 1: Welcome to riding / Build the foundation

Level 2: Introduction Sideslipping and Direction Change

Level 3: Introducing Turning

Level 4: Refining Turns on Green Terrain

Intermediate Zone Objectives

Level 5: Exploring Movement Options and Terrain Variety

Level 6: Mastering Blue Terrain and Developing Versatility in Movement

Expert Zone Objectives

Level 7: Introducing Black Terrain and Increasing Movement Intensity

Level 8: Mastering Black Terrain with active retraction

Level 9: Riding Anything, Anywhere in Any Condition