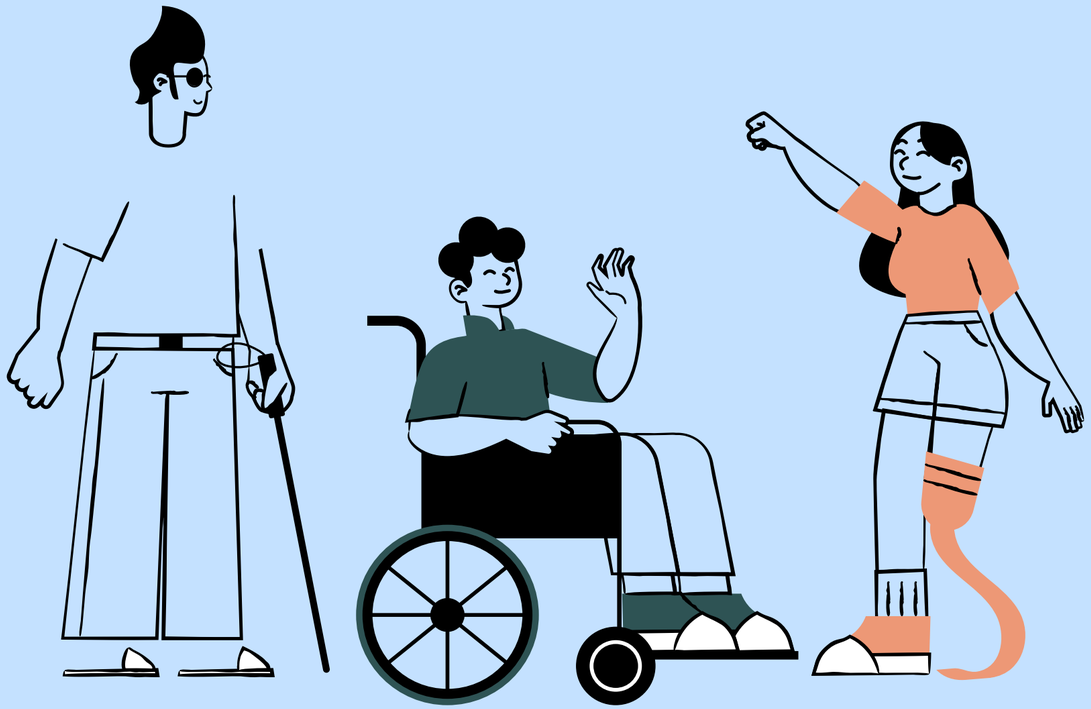
Common Disabilities

At New England Disabled Sports

Why is it important to know about disability?



The purpose of this powerpoint it to enhance your knowledge about the common disabilities we see at NEDS. It is important to remember that even if two people have the same disability, their disability will likely manifest in different ways.

This presentation serves as a guide to help coaches and staff feel more comfortable and prepared when working with new student athletes. Learning about common disabilities can improve your knowledge and confidence which will enhance our athletes safety and experience! Thank you for taking the next step to help create *a world where disabilities are not barriers*.

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Autism Spectrum Disorder (ASD)

Key characteristics and how it affects our athletes

Sensory Sensitivities

- Athletes may be sensitive to cold, wind, tight boots, or loud noises, while others may seek more sensory input.
- Strategies: Gradual exposure, noise-canceling headphones, tinted goggles, comfy layers, and breaks.

Motor Planning & Coordination

- Athletes may have trouble learning and sequencing movements.
- Strategies: Break skills into small steps, repeat often, allow extra time.

Communication

- Athletes may struggle with social cues, verbal instructions, or be nonverbal.
- Strategies: Use simple language, show visually, and reinforce with gestures or devices.

Autism Spectrum Disorder (ASD)

Transitions & Changes in Routine

- Unexpected changes (weather, different instructors, new trails) may be overwhelming.
- Strategies: Follow a structured schedule, prepare athletes for changes, and use visual cues (PECS).

Special Interests

- Athletes may focus on specific trails, gear, or numbers.
- Strategies: Use their interests for motivation and redirect when needed.

Emotional Regulation & Anxiety

- Routine changes, sensory overload, or frustration can lead to outbursts or shutdowns.
- Strategies: Use calming techniques, sensory tools, and take breaks as needed.

Autism Spectrum Disorder (ASD)

Other Equipment & Strategies That May Help:

- **Noise canceling headphones** – Reduce sounds from wind, lifts, or other skiers.
- **Tinted goggles** – Help with light sensitivity.
- **Weighted vests or compression clothing** – Provide calming pressure (vest should be 5-10% of body weight).
- **Visual cue cards, picture schedules, social stories** – Support communication, expectations, and transitions.
- **Tethers (tip, waist), hook ease** – Assist with motor coordination, directional guidance, and speed control.

Down Syndrome (Trisomy 21)

Key characteristics and how it affects our athletes

Hypotonicity

- Low muscle tone can affect core stability and balance, making posture harder to maintain.
- Strategies: Use an edge wedgie to keep ski tips together, ski pole tethers for stability, and core supports for balance.

Joint Hyper Extensibility

- Loose joints can make movements harder to control and increase fall risk.
- Strategies: Use supportive bracing and focus on proper form to prevent injury.

Atlantoaxial Instability

- Instability in the upper neck can increase the risk of spinal cord injury. Medical clearance may be needed.
- Strategies: Avoid excessive head/neck movement and watch for weakness, numbness, or pain.

Down Syndrome (Trisomy 21)

Congenital Heart Defects

- May lead to lower endurance and increased fatigue.
- Strategies: Take frequent breaks, watch for dizziness or shortness of breath, encourage hydration.

Visual Impairments

- Depth perception and contrast sensitivity may be reduced, affecting spatial awareness.
- Strategies: Use verbal cues, bright markers, and proper tinted or prescription goggles.

Hearing Impairments

- Athletes may struggle to hear instructions or cues.
- Strategies: Use clear hand signals, visual demonstrations, and consider a communication system.

Down Syndrome (Trisomy 21)

Seizure Disorders

- Coaches should know an athlete's seizure history and triggers (fatigue, flashing lights, stress).
- Strategies: Athletes must wear a seizure belt on lifts. Review the NEDS Emergency Action Plan.

Cognitive Functioning

- Athletes may need simple instructions, repetition, and hands-on help.
- Strategies: Use visual demos, break skills into steps, and review the athlete's profile to understand their cognitive abilities.

Shortened Palate and Midface Hypoplasia

- May contribute to shortness of breath.
- Strategies: Give frequent rest breaks, monitor exertion, and adjust face coverings for easier breathing.

Down Syndrome (Trisomy 21)

Other Equipment & Strategies That May Help

- **Edgie Wedgie** – Keeps ski tips together for better control, great for athletes with hypotonia.
- **Hook ease** – Adds support for those with coordination challenges.
- **Supportive Bracing / Core Supports** – Helps stabilize joints and improve balance.
- **Tighter Ski Boots with Proper Fit** – Increases ankle stability and prevents overextension.
- **Tinted or Prescription Goggles** – Reduce glare and enhance contrast to improve visibility.
- **Two Way Radio System** – Enhances communication for athletes with hearing impairments.
- **Seizure Belt for Ski Lifts** – Provides extra safety for athletes with seizure disorders.
- **Boot buckle extenders -** Helps fit bindings properly for athletes with larger calves.
- **Ski Harness (if necessary)** – Adds support and control for athletes with balance impairments or low muscle tone.

Muscular Dystrophy (MD)

Key characteristics and how it affects our athletes

Muscle Weakness

- Athletes may struggle with turns, posture, and standing for long periods.
- Strategies: Use adaptive equipment, focus on energy conservation, and take frequent breaks.

Fatigue

- Muscles tire quickly, reducing stamina. Weak respiratory muscles may cause shortness of breath.
- Strategies: Plan shorter ski sessions with rest breaks, use energy-efficient techniques, and monitor breathing.

Balance & Coordination

- Weak core and leg muscles can affect balance and increase fall risk.
- Strategies: Consider a sit ski, teach weight shifting, use ski outriggers or a harness, and choose suitable terrain.

Decreased Range of Motion

- Stiff joints may limit movement on skis.
- Strategies: Adapt equipment for mobility needs and incorporate stretching before skiing.

Muscular Dystrophy (MD)

Other Equipment & Strategies That May Help

- **Sit-Ski** – Provides a seated option for athletes with increased weakness or fatigue.
- **Snow slider /Outriggers** – Help with balance and control for standing skiers.
- **Supportive Braces (Ankle, Knee, or Back)** – Improve stability and reduce strain.
- **Compression Garments** – Enhance circulation and reduce muscle fatigue.
- **Energy Conservation Strategies** – Use smooth, efficient skiing techniques and schedule rest breaks.
- **Ski Harness (if necessary)** – Adds support and control.

Spinal Cord Injury (SCI)

Autonomic dysreflexia (AD)

a life-threatening condition where the body overreacts to a stimulus, often seen in individuals with spinal cord injuries **at or above the T6 level.**

Symptoms may include:

- flushing of the skin
- headache
- sweating
- blurred vision
- sudden communication changes

Immediate actions: loosen all straps, free any kinks in the catheter, make sure no clothes are folded, move to a warm place, call ski patrol and get first aid. **Talk to your student athlete about their AD symptoms.** It is likely that they can recognize their own symptoms and know how to treat them.

Complete vs. Incomplete

Complete SCI: **no** motor or sensory function below the level of injury

Incomplete SCI: **some** preservation to motor or sensory function below the level of injury

Spinal Cord Injury (SCI)

High-Level SCI (Cervical - C1 to C8)

- **Limited Upper & Lower Body Control**
  - Athletes may have minimal or no movement below the injury level, requiring full adaptive equipment.
  - Strategies: Use a sit ski with fixed outriggers, ensure proper positioning, and focus on head/shoulder movements for control, if possible.

- **Impaired Grip Strength & Arm Function (C5-C8)**
  - Athletes may struggle with using ski poles or controlling a sit ski independently.
  - Strategies: Use adaptive ski poles with hand straps or a tetraski.

- **Limited Temperature Regulation & Blood Pressure Control**
  - Higher-level injuries may cause autonomic dysreflexia or difficulty regulating body temperature.
  - Strategies: Dress in warm layers, monitor for signs of overheating or low blood pressure, and take regular breaks. Talk to your athlete about AD symptoms and how to help before the lesson.

Spinal Cord Injury (SCI)

- **Limited Core Stability**
  - Athletes may struggle with trunk control, impacting balance and posture.
  - Strategies: Use a sit ski with chest straps and lateral supports, and encourage core engagement techniques.

- **Arm & Hand Function**
  - Athletes may be able to propel a sit ski independently with enough upper body strength.
  - Strategies: Use handheld outriggers for steering and stability.

Mid-Level SCI (Thoracic - T1 to T12)

Spinal Cord Injury (SCI)

- **Limited Leg Function**
  - Athletes may be able to stand but lack full control for skiing independently.
  - Strategies: Use a sit ski or standing outriggers.

- **Partial Core & Hip Function (L1-L3)**
  - Athletes may stand and control their balance with some help.
  - Strategies: Consider adaptive standing skiing with outriggers or a tether.

- **Bladder & Bowel Considerations**
  - Limited sensation with bowel/bladder
  - Strategies: Plan for scheduled breaks and ensure access to accessible restrooms.

Low-Level SCI (Lumbar & Sacral - L1 to S5)

Spinal Cord Injury (SCI)

Other Equipment & Strategies That May Help

- **Bi-Ski, Mono-Ski, Snow Kart, Tetra Ski, Ski Bike** – Provide seated skiing options with varying levels of independence.
- **Outriggers** – Assist with balance and turning for sit-skiers or standing skiers with limited leg function.
- **Chest Straps & Lateral Supports** – Help with posture and stability for athletes with limited core control.
- **Adaptive Ski Poles with Hand Grips** – Assist skiers with reduced grip strength.
- **Temperature-Regulating Gear** – For athletes with limited ability to sense cold or heat.
- **Padding and Cushions** - Prevent pressure sores caused by friction.

Visual Impairment (VI)

Key characteristics and how it affects our athletes

Depth Perception

- Athletes may struggle to judge distances, slopes, or obstacles.
- Strategies: Use bright, high-contrast markers and provide clear verbal guidance to improve spatial awareness.

Peripheral Vision

- Athletes may not see skiers coming from the side or obstacles in their path.
- Strategies: Use a guide, verbal cues, or a tether system to help maintain awareness of surroundings.

Glare Sensitivity

- Bright sunlight or overcast conditions can make terrain changes hard to see.
- Strategies: Use tinted goggles or visors suited for different lighting conditions.

Complete Blindness

- Athletes rely on non-visual input to navigate.
- Strategies: Pair with an experienced guide using a radio system or direct verbal commands, and set clear communication methods before skiing.

Visual Impairment (VI)

Other Equipment & Strategies That May Help

- **Ski Guide –** A guide skiing alongside or in front, always wearing a bright guide bib.
- **Two-Way Radio System –** Enables clear communication between the athlete and guide for real-time instructions.
- **Tether System –** Provides directional guidance and speed control for athletes with limited vision.
- **Brightly Colored or High-Contrast Markers –** Improve visibility of course features.
- **Tinted or Prescription Goggles –** Reduce glare and enhance contrast to improve visibility.
- **Verbal Cues & Commands –** Use clear, predictable instructions for turns, speed, and obstacles.
- **Familiar Runs –** Allow athletes to explore terrain at a slower pace before skiing independently or with a guide.

Traumatic Brain Injury (TBI)

Key characteristics and how it affects our athletes

Balance & Coordination

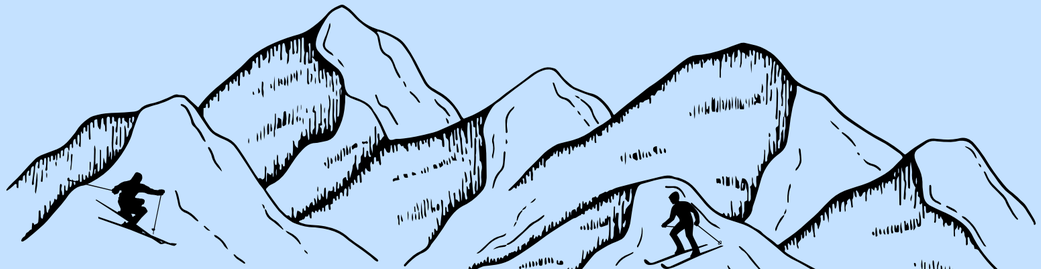
- TBI can affect balance and coordination, making skiing harder.
- Strategies: Start on easy terrain and use support equipment when needed.

Muscle Weakness

- Athletes may have weakness or tightness in muscles, affecting movement.
- Strategies: Use outriggers, a snow slider, or ski harness (if necessary).

Cognitive Impairments

- Athletes may have trouble remembering instructions, focusing, or making quick decisions.
- Strategies: Give simple, step-by-step instructions, visual demos, and use repetition.



Traumatic Brain Injury (TBI)

Sensory

- TBI can increase sensitivity to noise, light, and movement, causing discomfort.
- Strategies: Use tinted goggles, noise-canceling earmuffs, or gradually expose to the skiing environment.

Fatigue

- Athletes may tire quickly, both physically and mentally.
- Strategies: Plan shorter skiing sessions with breaks and watch for signs of fatigue.

Behavioral Changes

- Athletes may struggle with emotional control, frustration, or impulsivity.
- Strategies: Use positive reinforcement and set clear expectations.

Traumatic Brain Injury (TBI)

Other Equipment & Strategies That May Help:

- **Outriggers –** Assist with balance and turning for sit-skiers or standing skiers with limited coordination.
- **Helmet with extra padding –** Provides protection due to the increased risk of re-injury.
- **Visual cue cards or checklists –** Support memory and help follow steps.
- **Shorter skiing sessions with breaks –** Prevents fatigue and cognitive overload.
- **Ski harness (if necessary)** – Adds support and control.

Post Traumatic Stress Disorder (PTSD) may be assoicated with TBI

Startle Response & Anxiety

- Loud noises, sudden movements, or crowded areas can cause anxiety or flashbacks.

Focus & Emotional Regulation

- PTSD can affect concentration, making it hard to follow instructions or react to changes.
- Strategies: Use short, clear instructions, check in regularly, and foster a supportive environment.

Avoidance & Fear

- Athletes may feel uneasy in certain situations, like enclosed lifts or high-speed skiing.
- Strategies: Use gradual exposure, let the athlete set their pace, and offer choices.

Cerebral Palsy (CP)

Key features/characteristics and how it affects our athletes

Muscle Stiffness

- Tight muscles can make movements rigid and harder to control.
- Strategies: Stretch before skiing, use adaptive equipment, and practice controlled movements.

Low Muscle Tone

- Athletes may have trouble with posture and tire quickly.
- Strategies: Use core supports, take frequent breaks, and incorporate energy-conserving techniques while skiing.

Involuntary Movement

- Uncontrolled movements can make skiing harder.
- Strategies: Use adaptive equipment like outriggers or a ski harness (if necessary) for stability.

Cerebral Palsy (CP)

Balance & Coordination

- Decreased coordination can make turning, stopping, and ski control difficult.
- Strategies: Use a sit-ski or outriggers, practice weight-shifting, and choose easy terrain.

Limited Range of Motion

- Athletes may struggle to bend knees or ankles for proper posture.
- Strategies: Adapt equipment, stretch before skiing, and use modified techniques.

Fatigue

- Athletes may fatigue quickly.
- Strategies: Plan shorter sessions with breaks, watch for fatigue, and allow recovery time.

Cerebral Palsy (CP)

Other Equipment & Strategies That May Help

- **Sit-Ski –** Provides a seated option for athletes with increased weakness.
- **Snowslider/Outriggers –** Help with balance and control for standing skiers.
- **Supportive Braces (Ankle, Knee, Back) –** Provide additional stability and help maintain posture.
- **Compression Garments –** Enhance circulation and reduce muscle fatigue.
- **Stretching & Warm-Up –** Reduce muscle stiffness before skiing.
- **Energy Conservation Strategies –** Use smooth, efficient skiing techniques and schedule rest breaks.
- **Ski Harness (if necessary)** – Adds support and control.

Intellectual and Developmental Disabilities (ID/ IDD)

Key features/characteristics and how it affects our athletes

Learning & Processing

- Athletes may need more time to understand instructions and learn skills.
- Strategies: Use simple steps, visual demos, and hands-on guidance.

Problem-Solving & Decision-Making

- Reacting to sudden changes can be difficult.
- Strategies: Practice predictable skiing routines and reinforce safety rules.

Motor Coordination

- Balance, timing, and coordination may be affected.
- Strategies: Adapt instruction, use adaptive equipment, and focus on repetition to build a motor plan.

Intellectual and Developmental Disabilities (ID/ IDD)

Sensory Processing

- Cold weather, wind, movement, and noise may be overwhelming.
- Strategies: Gradually introduce new sensations, allow quiet breaks, and use deep-pressure options like snug clothing.

Transitions & Changes

- New places or unexpected events may cause stress.
- Strategies: Keep routines consistent, set clear expectations, and provide reassurance.

Social Interaction & Communication

- Athletes may struggle with group dynamics, instructions, or social cues.
- Strategies: Use visual schedules/ aids, clear phrases, hand signals, and structured social engagement.

Intellectual and Developmental Disabilities (ID/ IDD)

Other Equipment & Strategies That Can Help

- **Edgie Wedgie** – Keeps ski tips together for better control.
- **Visual Cues & Demonstrations** – Breaks skills into simple steps.
- **Repetition & Routine-Based Instruction** – Builds confidence and retention.
- **Sensory Strategies** –Use proper clothing, sensory tools, and breaks to increase comfort.
- **Predictable Routines & Structured Lessons** – Reduces anxiety and supports learning.
- **Visual Supports & Social Stories** – Explains skiing in an easy-to-understand way.
- **Quiet Break Areas with Toys & Games –** Provide a space to reset during sensory overload.
- **Ski Harness (if necessary) –** Adds support and control.

Multiple Sclerosis (MS)

Key features/characteristics and how it affects our athletes

Muscle Fatigue

- MS can weaken the legs, making balance and endurance harder.
- Strategies: Plan shorter sessions with breaks and use energy-conservation strategies.

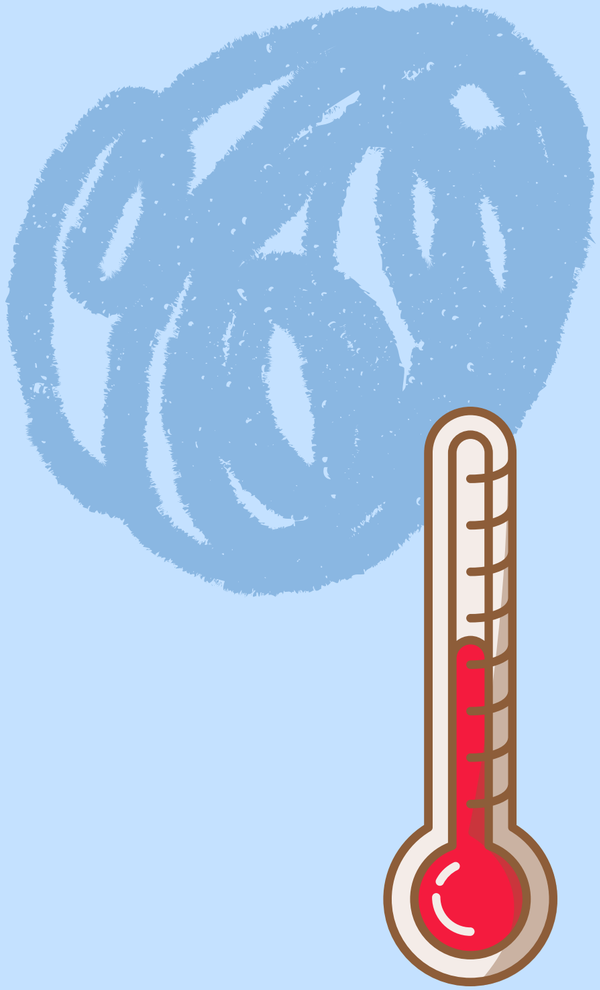
Muscle Stiffness

- Tight muscles can make movements rigid and turning difficult.
- Strategies: Stretch before skiing, use controlled movements, consider adaptive equipment.

Balance & Coordination

- MS can affect balance and coordination, increasing fall risk.
- Strategies: Use a snow slider, outriggers, sit-ski, or harness (if necessary) for stability.

Multiple Sclerosis (MS)



Temperature Sensitivity

- Heat can worsen MS symptoms, causing fatigue and decreased function.
- Strategies: Wear light layers, take breaks, and avoid overexertion.

Numbness

- Reduced sensation in the legs or feet can make ski control harder.
- Strategies: Ensure proper boot fit, use verbal feedback, and adjust skiing technique.

Vision Challenges

- Impaired vision can affect depth perception and reaction time.
- Strategies: Use high-contrast goggles, bright course markers, and verbal guidance.

Multiple Sclerosis (MS)

Other Equipment & Strategies That May Help:

- **Sit-Ski** – Provides a seated option for athletes with increased weakness or fatigue.
- **Snow slider /Outriggers** – Help with balance and control for standing skiers.
- **Supportive Braces (Knee, Ankle, Back)** – Helps with stability and posture.
- **Properly Fitted Boots** – Provide stability and sensory feedback for skiers with numbness.
- **Tinted or Prescription Goggles** – Reduce glare and enhance contrast to improve visibility.
- **Energy Conservation Strategies –** Use smooth movements and take rest breaks.
- **Ski Harness (if necessary)** – Adds support and control.

Amputation

Key features/characteristics and how it affects our athletes

Balance

- Lower-limb amputations can make balancing, turning, and weight distribution difficult.
- Strategies: Use adaptive equipment like outriggers for stability.

Prosthetic Considerations

- Not all prosthetics work for skiing, and cold weather can affect comfort.
- Strategies: Check if the prosthetic is ski-compatible, monitor for skin issues, and consider ski-specific prosthetics or a sit-ski.

Grip Strength

- Upper-limb amputations may make holding ski poles or balancing harder.
- Strategies: Use adapted ski poles with custom grips or outriggers for control.

Core Strength & Compensatory Movements

- Missing a limb can lead to movements that affect endurance and technique.
- Strategies: Focus on core engagement, personalized instruction, and take rest breaks as needed.

Amputation

Equipment & Strategies That Can Help

- **Snow slider /Outriggers** – Help with balance and control for standing skiers with lower leg amputations.
- **Sit-Ski –** Provides a seated option for athletes with decreased balance or bilateral lower-limb amputations.
- **Adaptive Ski Poles –** Modified grips or shortened poles can help those with upper-limb amputations.
- **Prosthetic Covers & Adjustments –** Protect prosthetics from cold and moisture.
- **Ski-Specific Prosthetics –** Designed to allow flexion and movement suited for skiing.
- **Energy Conservation Strategies –** Use smooth movements and take rest breaks.
- **Tethering & Harness Systems** – Provides directional guidance, speed control, and additional stability.

Mental Health/ Illness

Key features/characteristics and how it affects our athletes

Low Self-Esteem & Body Image Concerns

- Athletes may feel self-conscious or struggle with confidence.
- Strategies: Offer positive reinforcement, focus on strengths, and create a supportive, judgment-free environment.

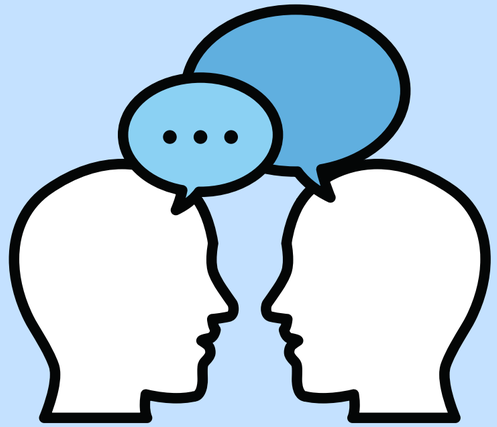
Lack of Motivation & Difficulty Initiating Activity

- Mental health conditions can affect energy and participation.
- Strategies: Break tasks into small steps, celebrate progress, and encourage often to build confidence.

Difficulty with Emotional Regulation & Stress Management

- Frustration and anxiety may arise if skiing feels overwhelming.
- Strategies: Use calming techniques, validate emotions, and offer breaks to prevent discouragement.

Mental Health/ Illness



Key features/characteristics and how it affects our athletes

Challenges with Initiation

- Athletes may hesitate to take risks, fear failure, or struggle with decisions.
- Strategies: Create a predictable environment, offer choices to boost control, and introduce new skills gradually at a comfortable pace.

Social Anxiety & Communication Barriers

- Interacting with coaches or staff may feel intimidating, affecting participation.
- Strategies: Watch for signs of discomfort, use clear and patient communication, and offer one-on-one instruction if needed.

Mental Health/ Illness

Other Equipment & Strategies That May Help:

- **Choice & Autonomy –** Give athletes control over their learning to boost motivation and engagement.
- **Structured & Predictable Lessons –** Reduces anxiety and builds confidence.
- **Visual Schedules or Goal Charts –** Helps athletes track progress and stay motivated.
- **Encouragement & Positive Reinforcement –** Boosts self-esteem and encourages trying new things.
- **Break Tasks into Small Steps –** Allows athletes to achieve small wins and build confidence.
- **Mindfulness & Relaxation Techniques –** Helps with emotional regulation and stress management.

Spina Bifida

Key features/characteristics and how it affects our athletes

Lower-Limb Weakness or Paralysis

- Depending on the level of spinal involvement, athletes may have limited or no movement in their legs, affecting standing balance and mobility.
- Strategies: Consider sit-skiing for those with significant lower-body involvement, or use adaptive snow slider and outriggers for standing skiers.

Balance & Coordination

- Weakness in core and leg muscles can impact stability and posture on skis.
- Strategies: Use a sit-ski, snow slider, outriggers, or ski harness (if necessary) for extra stability.

Sensory Impairments

- Some athletes may have reduced sensation in their lower limbs, affecting their ability to detect terrain changes.
- Strategies: Ensure proper boot fit for safety, use verbal feedback to help with awareness, and choose well-groomed terrain to minimize unexpected changes.

Spina Bifida

Key features/characteristics and how it affects our athletes

Latex Allergy

- People with spina bifida are at higher risk for latex allergies.
- Strategies: Check the student's profile and confirm with program staff for latex-free equipment and materials.

Bladder & Bowel Management Needs

- Some athletes may need planned restroom breaks due to neurogenic bladder/bowel issues.
- Strategies: Schedule breaks, ensure easy access to accessible restrooms, and discuss needs discreetly with the athlete.

Cognitive Processing Challenges (if present)

- Athletes may have hydrocephalus, affecting memory, processing speed, or problem-solving.
- Strategies: Use simple, step-by-step instructions, allow extra time for learning, and incorporate visual or hands-on teaching.

Spina Bifida

Other Equipment & Strategies That May Help:

- **Sit-Ski –** Provides a seated option for athletes with increased weakness.
- **Snow slider /Outriggers –** Help with balance and control for standing skiers.
- **Properly Fitted Boots –** Ensures safety and stability for those with reduced sensation.
- **Scheduled Breaks –** Allows for proper bladder/bowel management and prevents fatigue.
- **Visual & Step-by-Step Instruction –** Supports athletes with cognitive processing challenges.
- **Tethering & Harness Systems** – Provides directional guidance, speed control, and stability.

Thank you for taking the time to increase your knowledge so that your student athlete can have a better experience with us at NEDS!