III. UNDERSTANDING DISABILITY AND ITS IMPACT ON INVOLVEMENT IN PHYSICAL ACTIVITY

This section will provide a brief overview of the impact of disability on participation in physical activity. From the outset, it is important to point out some important facts:

1. There is WIDE range of possible disabilities that you might encounter in your physical activity setting. This range includes physical disabilities such as amputations, spinal cord injuries, neuromuscular conditions, cerebral palsy, and many others; sensory impairments such as deafness and blindness; cognitive impairments associated with disabilities such as Down syndrome, fetal alcohol syndrome, or acquired brain injury; chronic health conditions such as asthma, cystic fibrosis, heart disease, and type I diabetes; and a host of other conditions such as mental illness, epilepsy, learning disabilities, developmental coordination disorder, attention deficit disorder, autism spectrum disorder, and so on. And this is just a partial list to illustrate the diversity of possibilities.

2. There is also a WIDE range of capabilities and limitations amongst individuals with any given disability. Given that many factors, including: the severity of the disability, age of onset, existing secondary conditions, prior experiences, personal circumstances, etc. will vary from one person to another, so too will the impact of that particular disability on the individual's participation in physical activity.

3. The impact of one's disability might vary from one activity or one activity environment to another.

It would be impossible to outline all of the specific disabilities, and combination of disabilities, that physical activity leaders may encounter within their programs. It is also impossible to classify the needs of participants with disabilities according to the type of disability or diagnosis alone. Many individuals with disabilities experience a combination of limitations that affect their ability to participate in a physical activity environment. Therefore it is important as leaders to understand the implications that various limitations might have on the participant in your activity.

There is a set of factors that will influence the participant's performance in physical activity. Some are internal, some external; some you can change, and others you can't. The factors that should be considered in each situation include:

- Physical factors – for example, disability (type, severity, associated conditions, etc.), skill level, fitness level, medical history, interests, etc.
- Psychological factors – for example, past experiences, fears or inhibitions, interactions with peers, etc.
- Environmental factors – for example, family attitudes towards physical activity, support network, availability of programs in the community, accessibility, etc.

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One of your greatest challenges will be knowing what to expect / how much you can ask the participant with a disability to do. Sometimes it is difficult to distinguish the limits to participation imposed by the disability from the limits imposed by the individual or the limits imposed by the environment. Taking the time to get to know the individual will help you to separate these aspects and assist you in the identification of the participant's activity specific skills.

All participants should be developing in four areas - skill development, fitness, personal attributes, and social behaviours - and be acquiring a knowledge, understanding and appreciation of physical activity. The degree of emphasis placed on each of the goals will vary depending upon the activity situation (e.g. PE class versus day camp program versus competitive coaching situation) and the strengths and needs of the participant.

We are now going to start thinking in terms of the **functional impact** rather than impairment or disability. The focus of this next section will be on the limitations in functional ability versus a specific disability since many individuals, including those with varying disabilities, could present at your activity program with one or more of these limitations in functional ability for that specific activity. In other words, an individual with an amputation, an individual who is partially sighted and an individual with an acquired brain injury might encounter similar difficulties in a running game yet all three have distinctly different disabilities.

To simplify this we will consider five key areas where participants may be experiencing limitations that could affect their involvement in physical activity programs.

- Mobility, Movement Control and Motor Skills
- Sensory Input
- Cognitive Function
- Behaviour and Social Skills
- Communication

Mobility, Movement Control and Motor Skills

Fundamental movement skills are the foundation for engagement in physical activity pursuits as well as in many of the skills of independent daily living. These skills include locomotion, body control and the object manipulation skills. Like their peers, individuals with disabilities need to develop these skills. However, the presence of a disabling or chronic medical condition and the activity opportunities provided (or not provided) to an individual may result in limitations in one or more of these areas.

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Mobility and Movement Control

Limited mobility and lack of movement control can be the result of many different types of disabilities. Some common examples include: cerebral palsy, spinal cord injuries, muscular dystrophy, spina bifida, blindness, acquired brain injury, and amputations. Participants with these disabilities will most likely experience some limitations in their ability to move within their environment. However every participant will be affected differently and their abilities cannot be determined solely by their diagnosis. Some participants may experience difficulties with muscle control in both of their legs, while others may experience difficulties with muscle control on one side of their body. Some participants may have difficulty with balance, while others may experience complete paralysis (i.e. lack of sensation and movement) in their legs, arms, or both.

The degree of the mobility limitation will vary from one person to another, and in some cases, from one situation to another for the same individual.

Participants with mobility impairments typically use a variety of assistive devices and mobility aids depending on their individual needs. Some participants may use a wheelchair on a full time basis, while others may only use a wheelchair for long distances. Some participants with mobility impairments will use canes, crutches, braces, or walkers to help move around their environment. Still others will not require any assistive devices but will have irregular gait patterns or balance issues. Balance problems may be evident via their inability to maintain and control their body position and posture while at rest (stationary), in motion (dynamic), or both.

Suggestions to Maximize Inclusion

Some of the ways to maximize the inclusion of participants with limitations in mobility are:

- Physical activity leaders should know how to use and manipulate assistive devices and mobility aids (e.g. how to put on a brace, fold a wheelchair, etc.)
- Assistive devices such as wheelchairs, crutches and prosthetic devices should be considered as an extension of the participant's body and part of their personal space. Other participants should be expected to respect this personal space at all times.
- Leaders and volunteers should be aware of the proper techniques for safely transferring participants with mobility impairments to and from the wheelchair. It is often beneficial for the participant, especially children, to perform activities in different positions. Thus getting an individual out of his/her chair in a safe manner is an important skill to acquire.
- Practicing locomotor skills is important for developing physical competence. Locomotor skills may need to be adapted to allow for skill development alongside their peers.
- Since mobility limitations will affect how easily an individual can move about the activity space, altering dimensions of the space to lessen the distance travelled will often be beneficial for these individuals.
- For a participant who does not wheel his or her chair independently, asking a peer to assist is a viable strategy. This might provide an opportunity to build a positive peer relationship.

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Object Manipulation Skills

The ability to manipulate objects (sometimes referred to as fine motor skills) depends largely on upper body function and gross motor skills. Object manipulation skills are associated with the ability to receive, handle, control or propel an object with the hands, feet or an implement. Participants with mobility impairments and movement control problems, as described above, may or may not experience limitations with object manipulation skills. The development of object manipulation skills may be limited by the retention of primitive reflexes, the development of involuntary muscle activity or problems with postural control, which limit the participant from controlling voluntary movements. The manipulation of an object requiring complex motor skills or precise fine motor control may therefore be much more difficult for these participants. This may be evident, for example, in some people with cerebral palsy, muscular dystrophy, Down syndrome, or developmental coordination disorder.

Fine motor skills are prerequisites for the development of throwing, catching, and striking. It is very important that all participants have the opportunity to touch and manipulate a variety of objects, as their previous experience with these activities may be limited. Object manipulation is not only important in physical activity settings, but is a prerequisite for the performance of many daily living skills.

Suggestions to Maximize Inclusion

Possible ways to maximize inclusion for participants with limitations in object manipulation include:

- Many participants with significant impairments in object manipulation skills will lack sufficient grip strength to hold and manipulate objects. The use of lightweight equipment such as plastic bats, Nerf balls, beanbags, and plastic racquets can make it easier for them to participate.

- Providing opportunities for the participant to practice the grasp and release of balls, beanbags and other objects may assist in developing fine motor control. All participants like to try something new and different so use objects that come in many different forms, sizes, and colours.
- Encouraging the participant to hold objects for increasingly longer lengths of time may lead to improvements in fine motor control.
- Straps, handles and textured grips assist with fine motor control. Velcro straps can be used to adjust an implement and/or attach it to a person's hand or a wheelchair.

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Sensory Input

Our sensory system allows us to explore, perceive, interpret, and interact with our environments. Participants with sensory impairments most commonly experience one or more limitations, in varying degrees, in these processes. Sensory limitations may include deficits in: vision, hearing, touch sensation, body sensation, and movement sensation. Sensory impairments will affect the way in which the participant receives and reacts to information from the environment. Below are some examples and brief comments about common sensory impairments.

Visual Impairments

People who have a visual impairment have difficulty seeing. The term visual impairment describes the full range of legal blindness from partially sighted to totally blind. Approximately 80% of people categorized as legally blind have some functional vision. Individuals may be born blind (congenital) or become blind through an accident, disease or aging (acquired or adventitious). The timing of the onset of vision loss is important. Individuals who were born blind or lost their sight very early in life tend to have a different schema for their world than those who lost their vision later in life and still remember "how it was". Capitalizing on such memory can be useful in physical activity.

Persons with a visual impairment have the capacity to be physically active. However some people with visual impairments tend not to initiate movement spontaneously and have consequently experienced a limited amount of movement compared to their sighted peers. Limited movement experiences typically cause a delay in motor skill development. With instruction and practice, basic movement skills may develop to the same level as that of sighted individuals. Individuals with a visual impairment follow the same developmental sequences as their sighted peers. Any delay in basic movement skills is typically the result of lack of "doing", not the visual impairment.

Individuals learn basic movement and activity skills through instruction, observation, imitation, and practice. Because of a decreased level of visual stimulation, the participant with a visual impairment may not acquire skills as quickly as his or her peers, or without direct intervention. This delay may increase proportionately with age unless the individual receives instruction and practice. The significance of the delay can be diminished or eliminated with active participation in physical activities.

It is also important to recognize that the participant's vision may be less **functional** in a physical activity setting versus a classroom, at home, or in another familiar environment since the physical activity environment involves moving implements and people, unpredictable movement, and the need to negotiate large spaces quickly. As a result, some team games may not be appropriate for a person with low partial vision or someone who is totally blind because of the high emphasis on vision in the activity. Even so, some of the component motor skills, such as free throws in basketball, can easily be learned so it doesn't mean that you have to rule out this activity altogether.

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Suggestions to Maximize Inclusion

Some ideas to maximize the inclusion of persons with limitations in vision include:
- When trying to determine what the participant can do, ask him/her to describe the nature of the visual impairment and how it affects participation and performance in physical activities. Ask targeted questions such as: What is the best colour for contrast? Where is the best place to stand during demonstrations? How does lighting and an indoor versus outdoor environment affect your vision?
- In all cases, your goal is to maximize the use of the vision one has, even if that is a limited amount.
- Use colour, good contrast, texture and sound to provide information to the participant in a variety of ways.
- Utilize physical prompting, hand-body manipulation, and touch to provide information to the participant about appropriate body positions and the range of motion for movement skills.
- Involving the participant in a demonstration can be a good way to provide the participant with key information about the skill to be performed.

Hearing Loss

A hearing loss affects one's ability to sense and perceive auditory information. Persons with a hearing impairment are primarily classified as either deaf or hard of hearing.

Hearing loss interferes with a person's ability to communicate effectively with others. In a hearing society, this affects the person's ability to interact with his or her environment. Hearing loss is an invisible disability because there is little external manifestation of the disability and the individual usually appears to be able-bodied.

Individuals who are Deaf are often able to do everything a hearing peer can do –except hear. As a result, individuals who are Deaf do not always consider themselves as having a disability. The main difference between them and their peers is the use of a unique language. Sign language is the preferred language of the Deaf community. However not all persons who are deaf or hard of hearing use sign language. Some people utilize hearing aids to maximize the residual hearing that they have. Others utilize the technique of lip reading. Given the variance in communication methods, understanding the method used by the participant is an important step in being able to include him or her in your physical activity setting.

Some people with hearing loss may experience difficulties with balance (e.g., some people who have damage to the inner ear) but otherwise physical abilities are typically within normal ranges. With the exception of those individuals who experience static and dynamic balance problems, the inability to hear does not physically hinder a participant in any significant way.

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Suggestions to Maximize Inclusion

Some of the ways to maximize the inclusion of participants with limitations in hearing include:

- Noisy environments, such as the gymnasium, playground or arena, may present a challenge for persons who are wearing a hearing aid. Unwanted sounds are difficult to filter out and every sound is amplified. This may make it difficult for the participants to hear the voice of the physical activity leader, their peers, music, or a signal, such as a buzzer or a whistle. It is important to minimize unnecessary noises whenever possible.
- In all cases, your goal is to maximize the use of the hearing one has, even if that is a limited amount.
- Establish a set of visual signals that are appropriate for the activity environment, including: stop, go, watch/pay attention, and so on.
- Utilize visual information such as demonstrations, signs, posters, charts, and pictures to provide important information in a variety of ways.
- Utilize hearing partners to provide peer support and increase your 'reach' around an activity space. Peers can assist in getting the attention of the peer with the hearing limitation.

Sensory Processing Impairments

Some participants with disabilities may have difficulty processing stimulation from their environment. This is common for participants with autism, Aspergers syndrome, Attention Deficit Hyperactivity Disorder (ADHD), and Down syndrome, to name only a few examples. Understanding sensory-seeking and sensory-avoiding behaviour will help physical activity leaders to recognize certain behaviours that are commonly misinterpreted as "acting out" behaviours.

Participants with sensory processing difficulties may present with heightened or diminished sensitivity to their environment. These conditions are referred to as hyper-sensitivity and hypo-sensitivity.

Hyper-sensitivity: Individuals who are hyper-sensitive to their environment have a low tolerance for certain types of stimulation. For example, some participants who are hyper-sensitive become extremely uncomfortable or agitated with situations that involve loud noises, touching people, or being in crowds. These participants will most likely have difficulty focusing and coping in these situations.

Hypo-sensitivity: Participants who are hypo-sensitive to their environment have a high tolerance for certain types of stimulation. For example, some participants who are hypo-sensitive will seek out stimulation and may not be able to sit still for very long. You may notice that these participants act fidgety or need constant movement (e.g., rocking or flapping arms) in order to feel comfortable in certain situations. Some individuals with hypo-sensitivity may also crave touch, wanting to stand close to or hold on to others. Encourage participants to respect the personal space of others as a strategy for discouraging this type of behaviour.

In a physical activity environment, these sensitivities might result in a participant who does not want to play tag, who won't be willing to hold hands with a partner, who isn't keen on dancing, and so on. Using alternative strategies or formations may be required to accommodate individuals with these types of sensory impairments.

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Cognitive Functioning

Cognitive skills include attention, comprehension, orientation, memory, recognition, organizing ideas, problem solving, relating cause and effect, drawing inferences, developing concepts, and making judgements. When you are working with participants with limitations in cognitive functioning it is critical that you get to know the participant and what his/her strengths and weakness are in order to effectively modify your instructional methods. Observe the participant to determine approximately at what level he or she is able to successfully function and ensure that your instructions and materials reflect the appropriate levels.

Many persons with intellectual disabilities experience cognitive and functional limitations that affect everyday activities. These activities may include social skills, communication, academic performance, self-care, and home living.

Cognitive ability varies widely and may range from a mild to moderate impairment. Some of the areas that often pose problems, and hence functional limitations, to individuals with cognitive impairments, include:

- attention deficits – the individual may be **over-exclusive** (focus on only one aspect of a task) or **over-inclusive** (respond to everything rather than attend only to relevant cues)
- short term memory problems
- difficulty generalizing from one situation to another
- difficulty sequencing

Each individual with an intellectual disability has his or her own unique personality, strengths and needs. Persons with an intellectual disability may be socially mature or socially delayed; gifted in motor skills or lagging behind their classmates; have low self- esteem or great personal confidence; be able to communicate verbally or use a communication board. The range is diverse.

Some people with intellectual disabilities will experience physical limitations such as abnormal reflexes, problems with sensation, and/or a limitation in the ability to carry out appropriate movements in response to the environment. As a result the person may appear clumsy, uncoordinated, and may react differently to their surroundings. Others however, have mature motor skills and perform very well in a physical activity setting.

Some individuals with an intellectual disability may have difficulty with social interactions. For example they may have a hard time making friends, lack social skills, or may act inappropriately at times. They might also have a decreased awareness for safety issues. Some individuals with an intellectual disability do not understand the concept of danger or of cause and effect.

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Suggestions to Maximize Inclusion

Some of the ways to maximize inclusion of persons with limitations in cognitive functioning include:
Practicing skills in different environments can enhance transfer of learning.
- Make sure you have the participant's attention before you attempt to convey a message. Limit external noise and distractions as much as possible.
- Be patient. If you are having difficulty getting the participant's attention realize that you may be competing with many other stimuli in the environment. Some participants with cognitive impairments have difficulty filtering out irrelevant stimuli in order to focus on one thing.
- Adjusting instructional or presentation methods will often be necessary. Strategies that may prove effective include:
  - Break the activity or skill down into small steps using the task analysis approach.
  - Always demonstrate the activity or task.
  - Frequent use of review and repetition. Ask questions to ensure understanding.
  - Use physical assistance to guide the participant through the task so he/she can 'feel' what position the body should be in for a given skill.
  - Keep explanations simple. Use short phrases and provide specific directions.
  - State only one idea at a time to avoid confusion over the tasks.
  - Try different approaches – for example, verbal, visual, hand-over-hand demonstration – for clarity of instruction.

Behaviour and Social Skills

Some participants may have difficulty adjusting to societal expectations of appropriate behaviour and social skills. This could be the case for many reasons, and not necessarily a direct result of the disability. It is logical to expect variations in behaviour from all participants as they are developing the skills required to interact in their environment. Some participants with behavioural issues may experience significant difficulty interacting with their physical and social environment.

Not being able to interact with their environment as well as their peers can result in anxieties for these participants, and in response they will naturally develop their own coping strategies. Some of these strategies may be undesirable and inappropriate in the physical activity setting. It is important to remember that these behaviours are the participants' method of coping or seizing control when they are feeling threatened or uncomfortable with a given situation. The following are some common coping behaviours that participants who have difficulties with behaviour and/or social skills will use:
- Dangerous to self or others (e.g. physically aggressive)
- Interfere with own or other's learning (e.g. verbally disruptive)
- Limited self-control (e.g. tantrums)
- Lack of positive or sustained relationships (e.g. avoids participation)
- Bizarre reactions to disruptions in routine (e.g. immature language, hugging)
- Extensive withdrawal (i.e. avoids touch; limited, if any, displays of affection; no eye contact; etc.)

Physical activity leaders must be patient and realize that a change in this kind of behaviour will not occur immediately. Expectations for behaviour in the physical activity setting must be clearly articulated to all participants. When behaviour is inappropriate, consequences must be consistent, fair and specific to the behaviour.

It is always important to remember that it is the behaviour that is undesirable, not the child, so express disapproval for the behaviour, not the individual.

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Suggestions to Maximize Inclusion

Possible ways to maximize the inclusion of participants with limitations in behaviour and social skills include:

- Communicate expectations and desired responses. Praise the participant when he or she demonstrates appropriate behaviour. Be supportive. Don't expect full compliance initially.
- Be consistent. Establish and maintain behaviour limits.
- Let participants know they are in control of their environment. Give participants the opportunity to demonstrate appropriate responses.
- Establish and maintain routines in order to provide familiarity and allow individuals to develop skills within a context that they can continue to apply them. Also, announce changes to the routine before they occur to allow time to adjust to the pending change.
- Ignoring the undesired behaviour if it does not affect the safety of the activity.
- Make eye contact with the participant.
- Proximity control – move closer to the participant as this may discourage the inappropriate behaviour.
- Find alternative approaches to delivering the activity and support the participant to continue activities in their own way. Time-outs, while a common strategy reduce opportunities for the individual to engage with their peers and to be active - both have broader exclusionary implications.
- Involve peers. Peers can reinforce, model and reward more appropriate behaviour.

Communication

Communication is the process of giving and receiving or exchanging information. Delays in speech and language, lack of speech clarity, and bizarre speech patterns may be apparent in some participants with or without officially diagnosed disabilities. Participants with severe communication disabilities may experience great frustration because of their inability to communicate effectively with others. Close observation is important to become familiar with the participant's needs and to be able to recognize and interpret their mode of communication. Often participants with speech and language difficulties will be followed by a speech language pathologist, who can help you to understand and determine the best mode of communication with the participant.

Suggestions to Maximize Inclusion

Some of the ways to maximize the inclusion of participants with limitations in communication include:

- If possible, ask the participant how he or she prefers to communicate.
- Ask the parent/guardian for suggestions on communicating effectively.
- Keep your instructions clear and concise. Repeat or simplify instructions if necessary.
- Give the participant time to respond. Don't assume you know what he or she is trying to say.
- Learning about different forms of communication, for example, learn basic sign language or multi-sensory touch and guide techniques, or become familiar with picture, symbol or Bliss boards.
- Encourage the participant to speak slowly and repeat when necessary.
- Use multiple methods of communication for the same explanation (e.g. verbal, visual, physical assistance). For example, the use of cue cards and white boards might be helpful when providing instructions.
- Educate other participants in the group so they can effectively communicate with the participant.

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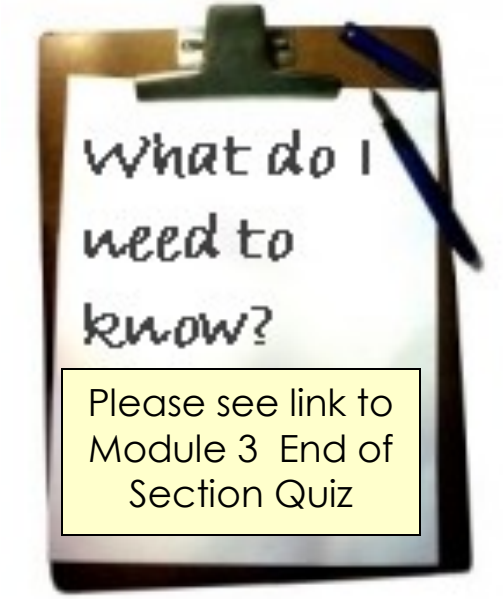
CONCLUDING COMMENTS FOR SECTION

As mentioned at the beginning of this section, there is a diverse range of disabilities and chronic health conditions, and an even greater range of variation within and across disability types. For this reason, it is impossible to explore all the ways the presence of disability could affect participation in physical activity as the scope of that exploration would be the vast. Instead, the focus has been to present key areas on which disability typically has an impact and consider these areas in a broader, more general sense.

It is important that you avoid the trap of a 'one-size fits all' or 'recipe' approach to providing inclusive physical activity opportunities because in reality, every person is unique, every situation is unique, and no single solution will work every time. A successful physical activity program will be one that recognizes the individual needs of each participant and that provides an environment that enables each participant to participate with dignity and success.



MOVING TO INCLUSION
INTÉGRATION EN MOUVEMENT

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