

Always Room for Improvement (ARI) Fitness and Recreation

Staff Training Manual

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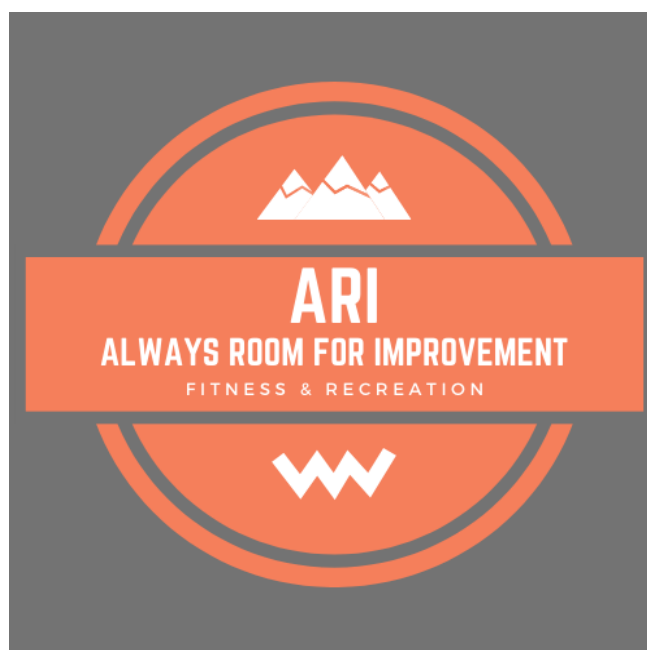
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Mission Statement

To improve the health and wellbeing of Victoria through inclusive and accessible physical activity.

Inclusion Statement

We are dedicated to upholding a recreational environment that honors diversity, inclusivity and respect. We want to establish and maintain a welcoming atmosphere where all individuals feel a sense of belonging, regardless of socioeconomic status, ethnic background, or level of ability.

Introduction to Inclusion

Inclusive physical activity means guaranteeing that physical activity opportunities are made available to everyone throughout their lives, despite any individual, contextual, or environmental barrier. An important component to inclusion is using person-first language, in which we refer to the individual prior to their condition. For example, we would introduce Becky as an individual who has a visual impairment, instead of a visually impaired individual. This type of expression puts the emphasis on acknowledging that Becky is a unique person, and is not defined by her condition. Below are some examples of inclusivity tailored toward specific groups.

The first example highlights the importance of making everyone feel included during physical activity, specifically those who are overweight or obese. Many individuals who are overweight feel self conscious and are less likely to partake in physically active hobbies because they are worried about being teased or left out (Cunningham & Pickett, 2016). The authors of this article introduce the Health at Every Size (HAES) movement, which aims to practice acceptance and appreciation of one's body, regardless of the size and shape, and to encourage

physical activity for all. Cunningham & Pickett continue by stating that inclusive physical activity isn't just about access--it is about creating an environment (both in philosophy and culture) that values inclusion and respect. Individuals should feel included, not just merely granted access to physical activities. This paper illustrates six main elements for creating a body weight inclusive environment which include: cultural commitment, leadership commitment, physical spaces, inclusive language, sense of community, and participant autonomy.

A second example of inclusivity comes from an article that focuses on the benefits of inclusive physical activity for youth with special education needs (SEN) (Coates & Vickerman, 2010). The National Curriculum for Physical Activity (NCPE) suggests setting appropriate learning challenges, being able to accommodate a wide diversity of students, and offering various customizable instructional methods to satisfy all learning styles. The authors continue by introducing six key elements to observe when considering inclusive physical activity for kids with SEN: experiences of physical education, experiences of physical education teachers, discrimination, self doubt, barriers to inclusion, and consultation and empowerment.

Students with SEN enjoy physical activity most when they feel included and a sense of belonging. The authors describe how important it is for individuals to voice their opinions so that organizers can specifically tailor to those needs instead of guessing or listening to their parents' requests instead.

Another example from the literature highlighting the importance of inclusive physical activity describes how vital physical activity is, especially for those with a physical disability. However, many recreation facilities are lacking equipment that has both suitable usability and accessibility for individuals with varying ability levels (Calder & Mulligan, 2014).

When designing an inclusive space for recreation, some of the areas of concern include parking, passenger loading zones, curb ramps, entrances/exits, doors/gates, reception, elevators, hallways, restrooms, locker rooms, drinking fountains, telephones, ramps, stairs, platform lifts, signage, alarms, and access to/functionality of equipment. These elements are all important pieces in creating an inclusive space for all people to engage in safe and fun physical activity. This article is a beneficial resource when approaching the development of an inclusive environment for recreation centres, however it is also wise to consult directly with individuals who have a disability so that they can share their ideas and help visualize the perfect layout.

Rimmer et al. identify evidence that health facilities are beneficial not just for physical health improvements, but also for the creation and development of social relationships that support overall healthy behaviors (Rimmer et al., 2017). These facilities also contribute to lowering healthcare costs, improving distribution and accessibility of healthcare services, as well as reaching better individual health outcomes.

To cultivate the accepting environment that we want at ARI, we must first grasp a fundamental understanding of disability, different abilities, and the ability spectrum/continuum. A disability refers to any condition of the mind or body that creates difficulties when performing certain tasks, and can take form in many ways (CDC, 2020). Those with disabilities are often grouped together into a single population, but they are in fact a diversified collection who have a broad range of needs (CDC, 2020). Even two individuals who have the same type of condition often present attributes of the disability in completely different ways (CDC, 2020).

Those with and without disabilities all have a place on the ability spectrum, and that place may change throughout our life course depending on the events that unfold. These events may alter our physical or mental capabilities, in dramatic or small ways, therefore shifting our

position on the spectrum. For example, a person may be extremely active and have all bodily systems working, and then they get into a car accident and become paralyzed, shifting them into a different range of the ability spectrum.

Contrarily, someone may have a condition that they were born with, and their place on the ability spectrum is rather stagnant. However, these abilities can change depending on the context in which an activity is being performed. For instance, if someone with an amputated leg tried to run without their prosthesis, they would likely be unable to. But once they have their prosthetic leg attached, they might be able to sprint long distances.

For these reasons, our positions on the ability continuum are ever changing, which is an important concept to understand. Individuals with disabilities are not lesser than those without, and due to the fact that no person is completely independent, everyone has potential to succeed given the equitable tools and resources that they need.

Universal Design

In order to establish an inclusive environment, the importance of universal design cannot be overlooked. The purpose of creating a universally designed space is to have products and environments that are usable for all people, to the greatest extent possible, without adaptation or specialized design. We must uncover social, physical and programmatic barriers, to allow for a sense of belonging, empowerment, and independence. It is our aim to approach this through subtle and natural changes that are beneficial for everyone on the ability spectrum. We also must take into account other factors such as aesthetics, cost, safety, gender, and cultural appropriateness.

There are seven key principles of design that were used as a guide when planning this facility, and are an ongoing source of motivation to keep our services functioning and up to date.

These key principles include: equitable use, flexibility in use, simple and intuitive use, perceptible information, tolerance for error, low physical effort, and size and space for approach and use (Seven Principles, 2020). Below is a summary of each principle with respective ARI examples.

Equitable Use

“The design is useful and marketable to people with diverse abilities” (2020). This pillar of universal design is implemented with hopes of avoiding segregation and stigmatization, honoring our members’ privacy and security, while appealing to everyone. At ARI, these accommodations are seen in the following: options of male, female, or gender neutral bathrooms, ability to change seat height for fitness machines, and various grip locations on the machines for transferring, not necessarily for the exercise itself (Discover Accessible Fitness, 2014).

Flexibility in Use

“The design accommodates a wide range of individual preferences and abilities” (2020). This element highlights the importance of providing choice for everyone, accommodating right and left-handed individuals, ATM with visual, tactile, and audible capabilities, products that are sufficiently spread out for ease of maneuverability, and many customization options for adding weight increments and machine attachments.

Simple and Intuitive Use

“Use of the design is easy to understand, regardless of the user’s experience, knowledge, language skills, or current concentration level” (2020). This component of universal design is all about keeping things simple and avoiding overcomplication when possible. At ARI, we strive for user friendly amenities and consistency throughout the facility. Some examples of this include:

plain language signage, intuitive operation of services, as well as a help desk for any clarification.

Perceptible Information

“The design communicates necessary information effectively to the user, regardless of ambient conditions or the user’s sensory abilities” (2020). This concept eludes to our usage of a variety of information modalities (pictures, videos, verbal, tactile, etc.), signage with simple fonts, large lettering, and braille, audio recordings for those who are visually impaired and do not know braille, as well as audio recordings and signs in multiple languages.

Tolerance for Error

“The design minimizes hazards and the adverse consequences of accidental or unintended actions” (2020). This element focuses on features used to minimize hazards and errors, to ultimately ensure the safety and wellbeing of our members. Some ways that we have incorporated this design technique are by frequent placements of wet floor signs and fire extinguishers with large signs indicating their locations, multiple payphones, as well as operational manuals for members to familiarize themselves with, and finally, well trained staff who are prepared to calmly work through any situation that may arise.

Low Physical Effort

“The design can be used efficiently and comfortably and with a minimum of fatigue” (2020). This pillar emphasizes creating ease of use for all individuals, including the installment of door handles instead of knobs to accommodate those with wrist issues, automatic doors in high traffic areas, elevator access to all 4 floors, and plenty of nearby parking to limit long distance travel between transportation and facility.

Size and Space for Approach and Use

“Appropriate size and space is provided for approach, reach, manipulation, and use regardless of [the] user's body size, posture, or mobility” (2020). This final concept of universal design outlines the importance of physical space and usability in a recreation setting. Our attempt at satisfying this concept include: clear line of sight to key areas, low countertops for those in a wheelchair or short in stature, variations for different hand and grip sizes, and ample space for mobility devices to navigate in all hallways, elevators, etc.

Department Specific Modifications and Accommodations

Aquatics

The aquatics section of our facility has two pools, one of which is designed for lap swimming, and the other is larger and a multi-purpose area with a mostly shallow bottom to accommodate a wider range of participants and activities. We have male, female, and gender neutral locker rooms which are equipped with showers, change areas, and bathrooms. These locker rooms lead out either into the main hallway of the facility, or into the pool deck. We have at least one lifeguard working during all open pool times, as well as various pool floaties, kickboards, and other poolside accessories.

Both pools are equipped with lifts that start at the pool deck level, and lower to the bottom of each shallow end, so that those in mobility devices can smoothly and safely navigate both the pool entrances and exits. There is a large clock at one end of the pool hall that displays the digital time in hour, minute, and second. The pool deck flooring is made of a textured surface that has small holes throughout to encourage frequent drainage and to decrease slipping hazards. We have an AED just behind the lifeguard station, as well as other first aid equipment and

repair/out of order signage. ARI offers various swimming lessons, group aquafit classes, and mommy-and-me swim classes.

Although the aquatics section of ARI has been carefully thought out and designed, there are some intrinsic contextual barriers that are commonly seen in aquatic settings. These barriers include: loud atmosphere which could create difficulties for someone who is visually impaired and relies on their hearing, the pool deck can get slippery which could be problematic for those with physical limitations such as balance and gait issues, and the pool water is colder than the body temperature so those who have difficulty with temperature regulation should be cautious.

Additionally, there are also common person-related barriers often witnessed in aquatics including: individuals who struggle with body image and insecurities might find it unpleasant to wear a swimsuit in public, some might have an aversion to chlorine due to irritation of the eyes, and oftentimes in the winter the pool is a less desirable outlet for physical activity because it can be an uncomfortable feeling to get one's hair wet and then travel home in the cold.

Fitness

Another important aspect of our facility is the establishment of a safe and inclusive environment in which individuals seek out to improve their health-related fitness and conditioning. The fitness division of ARI is an open floor plan consisting of strength machines, cardiovascular machines, free-weights, various bands and rollers, large mirrors to help make the space feel even bigger, and three extensive designated open areas for stretching, group classes, etc. There is a cable machine for a more customizable workout, an ergometer for those wanting a purely upper body cardiovascular workout, as well as most of our strength machines are equipped with swing away seats (or completely removable seats) so those using mobility devices can utilize the equipment without transferring (Rimmer et al., 2017). We also use large/soft seats

for those transferring from devices creating a smoother/easier transition, along with grasping/wrist cuffs for those with limited grip strength or hand function.

There are multiple water fountains scattered throughout the gym, which are low to the ground and have various push mechanisms to accommodate everyone. We also have TV monitors for those who have trouble staying motivated, which can help distract them (in a safe manner). Our cardio machines operate on 30-minute time slots so that individuals are not kept waiting for too long, and we incorporate large buttons with braille on machinery for those who are visually impaired. We offer group fitness classes, personal training, yoga, pilates, tai chi, guided meditation, zumba, and more. Cleanliness is hugely important at ARI, and for this reason we use machine washable cloths and spray bottles with natural disinfectant to clean surfaces and wipe down equipment between each use.

Some common context-related barriers seen in fitness settings are: too many people on machines preventing individuals from using a desired piece of equipment, members who sit on machines in between sets looking at their phones instead of letting others rotate in, some make loud grunting noises and slam weights which intimidates others and creates a hostile environment, not enough space between machines for those in mobility devices to maneuver safely throughout the space, not enough customizable attachments to accommodate those with various conditions, and drinking fountains are often too high so those who are shorter in stature or in mobility devices cannot reach them.

Some common person-related barriers often witnessed in fitness are: not aligning with the cultural norms of the gym, close-minded interpretations of health, oppressive ideals from the built environment, and negative interpersonal interactions (Richardson et al., 2016). In another article by Richardson et al., it was highlighted that those with physical disabilities experienced

oppressive behaviors at the gym including being ignored, dismissed, and stared at. These experiences often led to feelings of isolation, otherness, and personal failure (Richardson et al., 2017). Some individuals may lack the knowledge of how to operate machinery or what muscle groups are targeted at each machine, which can be another barrier to physical activity.

General Sports (Play, Games and Sports)

ARI includes a multitude of outlets for sports lovers. We have squash, tennis, pickleball, and basketball courts, as well as equipment for soccer, volleyball, badminton, dodgeball, kickball, handball, and a variety of other indoor games. To meet the needs of many participants, administrators facilitate a positive environment which celebrates movement and teamwork over competitiveness, we have various sizes of all equipment as well as brightly colored equipment so it can be seen easier, and large cones are used to designate the specific play area to ensure safety.

Common context-related barriers seen in sport/game settings are: over emphasis on competitiveness, often involve lots of travel time to-and-from the activity, lack of trained coaches and administrators, lack of appropriately planned/administered programs, lack of accessible parking and bathroom facilities, and overall lack of accessibility and architectural design (Block et al., 2013).

Common person-related barriers often witnessed in sports/games are: fear of injury or complications, not perceiving health benefits, lack of time, interest in other priorities, having to wake up early, and crowdedness (Buffart et al., 2009). Other barriers include lack of awareness of available options/programs and transportation (Block et al., 2013). Additionally, sports are often a difficult area to navigate for Deaf individuals because they cannot hear the instructions from the coach, and experience difficulties communicating with teammates.

Outdoor Programs/Summer Camps

Another important component of ARI is administering and delivering high-quality day camps that include various opportunities for inclusive outdoor recreation.

ARI has a number of outdoor recreation programs, which focus on the benefits of activity in nature, as well as encouraging environmental stewardship and respect for local flora and fauna. We also provide outdoor sports equipment such as a baseball diamond, an outdoor basketball court, soccer nets, frisbee, football, corn hole, a small golf putting green, a playground, and more. Our putting green features audible pins so that individuals with a visual impairment can listen to the sound and hit the ball toward the hole. We offer guided nature hikes and explorations that involve camouflage, tracking, Indigenous history, plant identification, and team building exercises. It is important that we ensure the terrain is safe for Deaf participants, so that they can focus on the instructor and not worry about obstacles or steep drop offs along the trail (Kurkova, 2016). Activities should be held at specific times of the day (middle of the day when the sun is directly overhead) to include those with visual impairments who can see best at this time of the day (or if overcast/poor natural light, move indoors to a well-lit space) (Sherill, 2003).

Common context-related barriers seen in outdoor recreation settings are: hiking trails are often not groomed for those with mobility devices to navigate through, and costs associated with outdoor gear, fees, transportation, etc. (Rimmer et al., 2017).

Common person-related barriers often witnessed in outdoor recreation are: lack of energy, lack of motivation, negative attitudes, dislike of bugs/dirt, fear of worsening an existing injury or experiencing a new injury, and lack of information on offered programs (Buffart et al., 2009).

Department Specific FAMME Model Scenario Applications

Below are several narratives laid out through the application of the FAMME (a Functional Approach to Modifying Movement Experiences) model, which provide insight into the unique challenges faced by many in a recreational setting. Each facility department has two scenarios, and each scenario is divided into the four steps of the FAMME approach (as well as a distinct table): (1) determine underlying components of skills, (2) determine current capabilities of participants, (3) match modification efforts to capabilities, and (4) evaluate the modification effectiveness. The third and fourth steps are cyclical, meaning they are continually updated depending on the constantly evolving current participant's needs and abilities. The modifications can be person, context, or task related, and the overall goal of this concept is to create an optimal challenge for ALL participants. The best approach to fulfill this framework is to ensure that your modifications satisfy the following list of questions: is the accommodation age appropriate, functionally appropriate, does it allow the individual a sense of independence, maximize participation, avoid singling out individuals, create an optimal challenge for everyone, and does it ensure safe participation levels.

Aquatics: Jimmy

Jimmy is a lively 10 year old boy who lives with autism spectrum disorder (ASD), and is excited about utilizing our aquatics amenities. He wants to learn how to swim laps in the pool with an instructor in the next lane helping him along. Jimmy has had swimming lessons but is not yet an independent swimmer, and is nervous about succeeding alongside more experienced swimmers. He loves to play games in the pool and use a kickboard. He has some trouble focusing for long periods of time, processing information, gets distracted easily, often has

difficulty balancing (Bhat et al., 2007), experiences difficulties coordinating his upper and lower extremities, and has limitations with depth perception.

Table 1. Aquatics: Jimmy

Underlying components of lane swimming	Jimmy's functional differences	Modifications
Concept understanding	Processing information	➤ Practice in larger/open pool before the lane pool
Balance	Unsteady	➤ Use caution entering, exiting, and moving between pools ➤ Water shoes with grippy bottoms
Coordination	Upper/Lower Extremities	➤ Simple swim stroke ➤ No flip underwater to change direction
Speed/agility	X	None needed
Sensory perception	Depth perception	➤ Instructor is vocal-- alerting Jimmy of nearby swimmers or approaching obstacles
Strength	X	None needed
Endurance	X	None needed
Flexibility	X	None needed
Attention	Short Attention Span	➤ Explain fundamentals quickly, using various modalities

Self-control	Easily Distracted	➤ Use simple stroke to not overwhelm him and keep him on task
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1. Determine underlying components of skills

The underlying components involved in lane swimming are: concept understanding, coordination, sensory perception, endurance, flexibility, attention, and self-control.

2. Determine current capabilities of participants

Due to his condition, Jimmy has some difficulties with attention, self-control, concept understanding, coordination, sensory perception, and balance.

3. Match modification efforts to capabilities

To address Jimmy's functional differences, we can make modifications that will ease the transition of learning how to swim laps. Some of these modifications include: practicing in the larger pool before transferring to the lane pool to limit distractions, short explanations of the important ideas in a variety of ways to keep his attention and aid in concept understanding, using a simple swim stroke to not overwhelm him, staying vocal to ensure he has time to react to obstacles approaching due to lessened sensory perception, using a simple above-water method for changing direction instead of the complicated underwater turnaround, and to keep Jimmy safe as he has balance issues, using caution when navigating the two pools and slippery surfaces, as well as wearing water shoes with grip on the bottom.

4. Evaluate the modification effectiveness

Most of the above modifications led to a positive outcome for Jimmy's swimming experience, except for the instructor being very vocal to guide him, which resulted in individuals starting at Jimmy, and other unwanted attention. It is important when creating modifications to

not single out the participant and put them in the spotlight--we want to naturally immerse the individual as much as possible, avoiding cumbersome and distracting elements.

Aquatics: Joshua

Joshua is a tenacious 15 year old who was born with cerebral palsy (CP), has many hobbies and skills, and especially enjoys the social aspect of being active. He wants to learn how to tread water and other basic swimming techniques, so that he can eventually swim in the ocean, which he has been too nervous to try. Joshua is also hoping that this experience will lead to more friendships. Due to his CP, Joshua experiences unsteadiness during locomotion, difficulties with coordinated movements, he becomes quite tired after short bouts of low intensity exercise, and has to be careful of joint positioning due to stiffness throughout his body.

Table 2. Aquatics: Joshua

Underlying components of treading water	Joshua's functional differences	Modifications
Concept understanding	X	None needed
Balance	Unsteady	➤ Use of water-safe walker
Coordination	Coordinated Movements	➤ Work on the arms first, then the legs, then both together
Speed/agility	X	None needed
Sensory perception	X	None needed
Strength	Muscular Weakness	➤ Alternating between using arms and legs so as to not tire out as quickly

Endurance	Easily Fatigued	➤ Perform activity for a short amount of time and slowly build up
Flexibility	Joint Stiffness	➤ Ensure joint positioning is safe by using a different technique
Attention	X	None needed
Self-control	X	None needed

(1) Determine underlying components of skills

The underlying components involved in treading water are: concept understanding, balance, coordination, strength, endurance, flexibility, and self-control

(2) Determine current capabilities of participants

Joshua's CP brings various challenges to his daily life, some of which include: muscular weakness, muscular tightness/stiffness (Bar-On et al., 2015), involuntary movements, balance and coordination difficulties, and abnormal posture and gait (Braendvik et al., 2009).

(3) Match modification efforts to capabilities

Modifications that should be introduced to aid Joshua in his quest to tread water include: performing an alternate technique with the extremities to protect his joints, taking frequent breaks to ensure Joshua's safety as he builds both muscular strength and endurance, using a water-safe walker too keep him upright in the water and so that he has something to hold on to if he feels unsteady, and performing these tasks in the shallow water to create a more comfortable setting where he feels at ease.

(4) Evaluate the modification effectiveness

In evaluating the previously mentioned modifications for Joshua, it became apparent that the water-safe walker was being relied on too heavily, so he wasn't able to fully experience his body/trust himself to stay upright--even for a moment. Next time, we might try to incorporate a wall-holding technique so that he doesn't rely on the walker, and he can slowly move away from the wall once he is ready.

Fitness: Jessica

Jessica is another member of ours who is 24 years old, who had her leg amputated from above the knee. Jessica enjoys being active, but often experiences phantom pain (Flor, 2002), has some difficulty with balance (Kasser & Lytle, 2013), and is self-conscious about her prosthetic limb (Drench, 1994). She experiences increased perspiration due to the decreased surface area through which to dissipate heat (Kasser & Lytle, 2013), which adds to Jessica's insecurities. Jessica has some experience in recreation facilities, is mature and aware of her limits, and knows how to operate most fitness machinery. Jessica wants to utilize the fitness center, in particular the weight machines. Jessica feels most comfortable when she is not singled out, can exercise with a sense of independence, and can push herself to improve her fitness.

Table 3. Fitness: Jessica

Underlying components of strength machines	Jessica's functional differences	Modifications
Concept understanding	X	None needed
Balance	Balance	<ul style="list-style-type: none"> ➤ Machines instead of free-weights ➤ Non-slip flooring/avoid mats/tripping hazards

Coordination	Coordination	<ul style="list-style-type: none"> ➤ Easy to use/intuitive machinery ➤ Various different attachments/grips
Speed/agility	X	None needed
Sensory perception	X	None needed
Strength	X	None needed
Endurance	Endurance	<ul style="list-style-type: none"> ➤ Low weight/higher reps ➤ Many weight settings/increments
Flexibility	Flexibility	<ul style="list-style-type: none"> ➤ Adjustable seating for comfortable joint positioning
Attention	X	None needed
Self-control	X	None needed

(1) Determine underlying components of skills

The underlying components involved in the operation of strength machines are: coordination, strength, endurance, attention, and self-control.

(2) Determine current capabilities of participants

Due to her condition, Jessica has difficulty with balancing, has low muscular endurance, has some difficulty in coordination, and because some musculature is overcompensating for the amputation, she has very tight joints/muscles.

(3) Match modification efforts to capabilities

We can modify the task by implementing different grips/foot holds for the machines so that she can easily operate them with her prosthetic. We can modify the context by installing handrails to help with any balance issues, as well as ensuring the floors are not slippery, and are free from loose mats and other tripping hazards that Jessica's leg might get caught on. We can also alter the context by keeping the facility at a cooler temperature, which could help alleviate Jessica's increased perspiration and lower the accompanying feelings of self-consciousness while working out. We can include a person-related modification by encouraging staff and members to keep to themselves and not stare at those with varying levels of ability, so that Jessica and others can feel comfortable exercising without people shedding light on their functional differences.

(4) Evaluate the modification effectiveness

Our modification efforts were mostly successful in that they helped Jessica interact with the machinery in a safe and effective manner. However, the handrails ended up putting the spotlight on Jessica which she does not want. Additionally, lowering the temperature was not widely received by the general population, meaning it is not sustainable and actually hinders the experience for others.

Fitness: John

John is a 28 year old who has a visual impairment, and is hoping to increase his cardiovascular fitness while also losing some weight. John often struggles with lacking both the motivation and energy to exercise, and is hoping to create a habit of coming to ARI three times per week. John is most interested in using the elliptical, but is unsure of how to operate it, and does not like to ask for help. Due to his visual limitations, John wears sunglasses and uses a cane to ensure his safety. John struggles with balance issues and fears of falling (Lieberman, 2006).

Table 4. Fitness: John

Underlying components of using an elliptical	John's functional differences	Modifications
Concept understanding	X	None needed
Balance	Fear of falling	➤ Wheel elliptical to open area--reduce tripping hazard
Coordination	X	None needed
Speed/agility	Moves slowly with cane	➤ Operate elliptical on low level to move slowly and steadily
Sensory perception	Limited eyesight	➤ Tell John how to use elliptical, volume on elliptical up to hear information
Strength	X	None needed
Endurance	Improve cardiovascular fitness	➤ Start on low setting with short amount of time--slowly work up
Flexibility	X	None needed
Attention	X	None needed
Self-control	X	None needed

(1) Determine underlying components of skills

The underlying components of using an elliptical include: balance, coordination, sensory perception, and endurance.

(2) Determine current capabilities of participants

As a result of his visual impairment, John has difficulties with balance, coordination, speed/agility, and sensory perception.

(3) Match modification efforts to capabilities

To set John up for success on the elliptical, the modifications we implemented include: wheeling the elliptical to open area to reduce tripping hazards when getting on or off the machine, operating the elliptical on a low level so that John can move slowly and steadily until he gets the hang of it, tell John how to use elliptical to increase his knowledge of the machine/target muscle groups/safety measures, turn volume up on elliptical to hear how long he's been using it/other information, start on a low setting with a short amount of time and slowly work up to a longer session, and encourage John's use of motivational music to keep him engaged (can provide John with some borrowed headphones to plug into the elliptical and listen to music/podcast/radio/etc).

(4) Evaluate the modification effectiveness

Looking back at the modifications we made for John, here are some ways we can tweak them to better suit the situation: moving the elliptical singles John out and grants him unwanted attention, and when he listens to music there is no way to catch his attention besides touching him, which is not encouraged due to startling him and lack of consent.

General Sports (Play, Games & Sports): Julia

Julia is a 16 year old who has anxiety and depression, and has been told by her parents to get involved in sports in hopes of improving her mental health. Julia played sports as a child, but grew disinterested over the years because of the overcompetitiveness (Nieman, 2002), and now finds daily living to be exhausting. She is often tired due to difficulty sleeping (CMHA, 2016),

has trouble controlling her own thoughts, and does not want to participate in sports, but is willing to try it out to appease her parents' wishes. Julia frequently gets impatient with herself as well as her family members and peers. Julia wants to try tennis on an indoor court, as she was gifted a tennis racket for her birthday.

Table 5. Sports/Games: Julia

Underlying components of tennis	Julia's functional differences	Modifications
Concept understanding	X	None needed
Balance	X	None needed
Coordination	X	None needed
Speed/agility	Often Fatigued	➤ Instructor is upbeat and engaging
Sensory perception	X	None needed
Strength	Muscular Weakness due to Inactivity	➤ Slow introduction so as to not burn out
Endurance	Low Endurance due to Inactivity	➤ Emphasis on racket positioning over running around the court to slowly build up endurance
Flexibility	X	None needed
Attention	Difficulty Controlling Own Thoughts	➤ Short instructional bouts followed by open play

Self-control	Often Impatient	➤ Mix of peer and solo play to eliminate boredom/impatience
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(1) Determine underlying components of skills

The underlying components of playing tennis include: concept understanding, coordination, speed/agility, sensory perception, strength, endurance, flexibility, attention, and self-control.

(2) Determine current capabilities of participants

Due to Julia's condition, she has difficulties with the following: speed and agility, strength, endurance, attention, and self-control.

(3) Match modification efforts to capabilities

To create a positive experience for Julia to the best of our abilities, we can make the following modifications: the instructor is upbeat and engaging in hopes of participants mirroring that same energy, sessions are held in the middle of the day so she has time to properly wake up, short introductory session so as to not burn out or experience severe muscular soreness, move closer to the net to lessen fatigue, emphasis on racket positioning over running around the court to slowly build up endurance, short instructional bouts followed by frequent open play to keep attention, and introducing a mix of peer and solo play to help alleviate any boredom or impatience.

(4) Evaluate the modification effectiveness

Looking back on the modification efforts we introduced to help Julia play tennis, we can differentiate what worked and what didn't. The modifications that were effective were

introducing an energetic instructor, and keeping the session short. The modification that was not effective was having Julia play in a group environment which reminded her of the competitive nature of sports which she did not enjoy, so next time a one-on-one lesson would be preferred.

General Sports (Play, Games & Sports): Jaden

Jaden is a 21 year old who was in a motor vehicle accident which resulted in a spinal cord injury, paralyzing him from the waist down. He has always been an avid sports fan, and is looking to become involved in dodgeball. Jaden's upper body strength has improved greatly since getting used to the wheelchair. Due to the trauma associated with the car accident, Jaden experiences severe PTSD and has not yet been able to ride in a car since the event. This PTSD therefore makes transportation a huge barrier to physical activity. Another barrier comes from his extremely low blood pressure, which Jaden must be cautious of when exercising (Sherill, 2003).

Table 6. Sports/Games: Jaden

Underlying components of dodgeball	Jaden's functional differences	Modifications
Concept understanding	X	None needed
Balance	Risk of Tipping Backward	<ul style="list-style-type: none"> ➤ Elongated stopper at the back of chair to prevent tipping ➤ Play with larger balls so he doesn't have to bend over too far to pick it up
Coordination	Twist Upper Body While Throwing/Dodging	<ul style="list-style-type: none"> ➤ Allow starting position closer to center so there is less throwing distance

Speed/agility	Quick Movements to Dodge/Throw	➤ Specialized chair that can move side to side and forward and back
Sensory perception	No Feeling Below Waist	➤ Straps to hold legs in place during play ➤ Helpers to indicate if the ball hit Jaden's lower extremities
Strength	X	None needed
Endurance	X	None needed
Flexibility	X	None needed
Attention	X	None needed
Self-control	X	None needed

(1) Determine underlying components of skills

The underlying components of dodgeball include: concept understanding, balance, coordination, speed/agility, sensory perception, endurance, and flexibility.

(2) Determine current capabilities of participants

Due to Jaden's condition, he has difficulties with the following: balance, coordination, speed/agility, and sensory perception.

(3) Match modification efforts to capabilities

Some of the modifications we implemented in the hopes of improving Jaden's dodgeball experience involved: elongated stopper at the back of chair to prevent tipping, play with larger balls so he doesn't have to bend too far over to pick it up and risk losing balance, allow starting position closer to center so there is less throwing distance until Jaden is accustomed and wants to

move further back, use of specialized chair that can move side to side as well as forward and back, straps to hold his legs in place during play, and facilitators to indicate if the ball hits Jaden's lower extremities (which would indicate that he is out for the rest of the round).

(4) Evaluate the modification effectiveness

After the initial modifications were made to establish a better dodgeball environment for Jaden, we have identified some avenues for change: play with regulation size balls so as to not highlight his functional differences, and play shorter games so that Jaden can catch his breath and allow time for blood pressure to normalize.

Outdoor Programs/Summer Camps: Jack

Jack, a 9 year old who has primordial dwarfism (Seckel syndrome more specifically), will be with us for an upcoming day at the lake. Both Jack's height and limb length are barriers that often prevent him from participating in physical activities. In order to ensure that Jack has a successful day, we must tailor the activities to best fit his needs. He is excited to swim in the lake, and more specifically, to try paddle boarding. Jack loves to play sports and be active, is great at listening to directions and knowing his body's limits, and has a high level of endurance. Due to his Seckel syndrome, Jack has some functional weaknesses, and is therefore encouraged to stay away from contact sports/activities (Sherrill, 2003). He experiences limited range of motion and has to be cautious to avoid dislocations/other joint-related trauma. Jack is most comfortable when he can swim and ride the bike that his dad made for him.

Table 7. Outdoor/Camps: Jack

Underlying components of paddle boarding	Jack's functional differences	Modifications
Concept understanding	X	None needed

Balance	X	None needed
Coordination	Coordinated Movements	➤ Practice on dryland prior to in the water
Speed/agility	X	None needed
Sensory perception	X	None needed
Strength	Functional Weaknesses	➤ Facilitator/peer pushing board through water
Endurance	X	None needed
Flexibility	Limited Range of Motion	➤ Two smaller paddles for safe joint positioning
Attention	X	None needed
Self-control	X	None needed

(1) Determine underlying components of skills

The underlying components that are important for paddle boarding are: balance, coordination, sensory perception, endurance, flexibility, and self-control.

(2) Determine current capabilities of participants

Due to Jack's condition, he has difficulties with the following: strength, flexibility, and coordination.

(3) Match modification efforts to capabilities

To limit strain on shoulder joints caused by use of the large paddle, Jack could instead use two smaller paddles, one in each hand to lessen the need for extensive range of motion of the shoulders. To combat Jack's functional weaknesses, a facilitator could swim alongside him and

help propel the board in the water. A facilitator could also be on the board with Jack, helping him maneuver the board through the water to alleviate any coordination difficulties. To limit any further coordination complications, Jack could kneel or sit on the board (instead of standing) and paddle from there.

(4) Evaluate the modification effectiveness

Some of the modifications listed above include assistants, which does not grant Jack complete independence, so more work needs to be done to find better solutions. Some of the suggested modifications also might single out Jack, as he may be the only individual with a helper by his side.

Outdoor Programs/Summer Camps: Jennifer

Jennifer is an 18 year old who has experienced a traumatic brain injury, and wants to go on an overnight backpacking trip. Jennifer is an adventurous person who loves to watch the sunrise, spend time in nature, and bird watch. She has difficulty with long-term memory recollection, thinking and reasoning, processing sensory information, impulsivity, aggression, communication, depression, and anxiety (National Institute of Neurological Disorders and Stroke, 2020). She is hesitant about the trip due to insecurities stemming from communication, but is ready for the challenge and hopes to make connections as well as enjoy time outdoors.

Table 8. Outdoor/Camps: Jennifer

Underlying components of backpacking	Jennifer's functional differences	Modifications
Concept understanding	Thinking/reasoning	➤ Ensure thorough preparedness prior to trip
Balance	X	None needed

Coordination	X	None needed
Speed/agility	X	None needed
Sensory perception	Processing sensory information	➤ Choose safe/mellow trail to limit dangerous elements
Strength	X	None needed
Endurance	X	None needed
Flexibility	X	None needed
Attention	Short attention span	➤ Explain safety protocols/essential information quickly and engagingly
Self-control	Personality changes/aggression	➤ Ensure chaperones are equipped with sufficient supplies and are trained to cope with aggressive behaviors

(1) Determine underlying components of skills

The underlying components of backpacking are: concept understanding, balance, coordination, sensory perception, strength, endurance, attention, and self-control.

(2) Determine current capabilities of participants

Due to her condition, Jennifer has difficulties with the following: concept understanding, sensory perception, attention, and self-control.

(3) Match modification efforts to capabilities

To allow for Jennifer's time on the backpacking trip to be as successful as possible, we introduced the following modifications: ensure thorough preparedness prior to trip so that she has a better chance of holding onto the information, choose a safe hiking trail to restrict dangerous elements and injuries due to sensory perception limitations, explain safety protocols and other essential information quickly and engagingly to capture Jennifer's short attention span, and lastly, ensure chaperones are equipped with sufficient supplies and are trained to cope with aggressive and erratic behaviors.

(4) Evaluate the modification effectiveness

After returning from the trip, the modifications made for Jennifer had both positive and negative outcomes. To address these outcomes and improve, the following adjustments to the modifications should be made: the safe hiking trail proved to be "too mellow" for some of the other participants, so next time a more scenic/rugged trail should be chosen to ensure all participants are happy and appropriately challenged, and the overnight aspect of this trip was too overwhelming for Jennifer, so next time she would prefer a day hike.

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Appendix A

ARI Needs Assessment Survey

The purpose of this survey is to identify the needs of the participants who will frequent this recreational facility, so that we can best accommodate those needs. Your input is valuable and will shape the operations and program deliverance. This survey is anonymous so please be as honest as you feel comfortable in your responses.

Will access to the following amenities improve your experience at ARI?

**Please circle the corresponding number for each amenity to indicate your response*

<u>Amenity</u>	Strongly Disagree	Disagree	Indifferent	Agree	Strongly Agree
<i>Pool</i>	1	2	3	4	5
<i>Hot Tub</i>	1	2	3	4	5
<i>Sauna</i>	1	2	3	4	5
<i>Cafe</i>	1	2	3	4	5
<i>Daycare</i>	1	2	3	4	5
<i>Weight Machines</i>	1	2	3	4	5
<i>Cardio Machines</i>	1	2	3	4	5
<i>Group Fitness Classes</i>	1	2	3	4	5
<i>Open Space to Stretch, etc.</i>	1	2	3	4	5

<i>Personal Training</i>	1	2	3	4	5
<i>Dance Classes</i>	1	2	3	4	5
<i>Yoga or Pilates Classes</i>	1	2	3	4	5
<i>Racket Sports Court</i>	1	2	3	4	5
<i>Basketball Court</i>	1	2	3	4	5
<i>Hockey Rink</i>	1	2	3	4	5
<i>Free Parking</i>	1	2	3	4	5
<i>Elevator</i>	1	2	3	4	5
<i>Functionally Limited Accessibility</i>	1	2	3	4	5
<i>Easily Adjustable Equipment</i>	1	2	3	4	5

**Please use the additional space provided to inform us of any specific accommodations/modifications that we can add to our facility to make your time here the best that it can be. This would be a good place to disclose any functional limitations you may have that might otherwise keep you from participating in physical activities. If you have any questions/concerns, please call or email us and we would be happy to address them. We can't wait to meet you!*
