



ENHANCE[®]
FITNESS



Inclusion Guide

2022 Edition



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Addendum: Disclaimer and Recommended Clinical Assessment

The Enhance®Fitness Inclusion Guide contains original Enhance®Fitness exercises (EF II) as well as exercises modified for seated use (EF I). The additional modifications were developed in response to Enhance®Fitness instructors' and sponsoring agencies' requests for exercises that could be performed by individuals unable to stand while exercising. The exercises were developed by experts in the fields of physical therapy and exercise physiology in collaboration by Enhance®Fitness instructors and exercise specialists from agencies serving older adults. Unlike the original Enhance®Fitness exercises, these modifications have not been tested for efficacy in improving health. The University of Washington and the Enhance®Fitness Steering Committee make no claims regarding the safety or efficacy of these modified exercises. In addition, we strongly recommend that any person with a history of falls, gait disturbance, or an inability to walk independently (without an assistive device), have an appropriate clinical evaluation by a physician and/or physical therapist.

Enhance®Fitness would like to acknowledge all the agencies that have contributed support and funding to this program throughout its years.

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Table of Contents

Purpose of This Guide	4
Who is This Guide For?	4
What is Enhance®Fitness and the Rationale for Using the program?	5
Enhance®Fitness/Lakeshore Foundation /National Center on Health Physical Activity and Disability (NCHPAD) Partnership	5
Description of the Program	6
What is Inclusion?	6
Suggestions for Program Site Coordinators and Master Trainers & Quick Checklist	7
How to Recruit Participants	7
Guidelines for Disability Inclusion	8
How to Make Adaptations and Accommodations	9
Built environment	10
Services	10
Instruction (Training & Teaching)	10
Equipment & Technology	11
Policy	11
Conditions Associated with Physical Disabilities	11
Strategies for Classroom Management and Teaching	13
For Deaf participants or those with hearing loss	13
For participants with vision loss or blindness	14
For participants with a cognitive impairment	15
For participants with mobility disability	16
For participants with limited dexterity	17
General Modification	17
Fitness Checks	18
Fitness Assessments for Individuals Who Use a Wheelchair:	
Toolkit for the Fitness Professional	18
Fitness Assessment Video Series for Individuals Who Use a Wheelchair	19
What to consider when teaching Enhance®Fitness	19
General Safety Considerations	19
Safety Considerations for Individuals with Spinal Cord Injury (SCI)	20
Safety Considerations for Individuals who use Mobility and/or Assistive Devices	20
Safety Considerations for Individuals with Traumatic Brain Injury (TBI)	21
Safety Considerations for Individuals with Down Syndrome	21
Safety Considerations for Individuals with Cerebral Palsy (CP)	21
Creating Inclusive Handouts and Picture Cards	21
Active Aging Resources	22
Remote Delivery Tips	22
Technical Assistance	23

Purpose of This Guide

The purpose of this guide is to provide additional guidance to build upon the information presented in the Enhance®Fitness curriculum. This addendum guide was created utilizing the [Guidelines, Recommendations, Adaptations Including Disability \(GRAIDs\)](#) framework. This framework is used to create recommendations for health promotion programs to highlight and add information, guidance, and resources on how to make programs inclusive of people with disability so that they can enjoy the same health benefits from programs as those without disability. To learn more, view the NCHPAD GRAIDs [course](#).

For additional resources or questions, please contact The National Center on Health, Physical Activity and Disability (NCHPAD) via phone (800-900-8086), email (email@nchpad.org) Or live web chat on our website, www.nchpad.org.

Who is This Guide For?

This guide has been developed to support Enhance®Fitness instructors and supporting staff to include all participants, including those with disability, in Enhance®Fitness programming. The adaptations within this guide include information on creating an inclusive learning environment and providing safe, modified exercise moves as needed to include all participants and abilities. Instructors will learn general teaching strategies to accommodate individuals as well as learning about inclusive practices throughout all health promotion and fitness programs.



What is Enhance® Fitness and the Rationale for Using the program?

The disability community is the largest minority in the nation. One in four people, or 25% of the population, in the United States report having a disability. According to the 2017 Disability Statistics Annual Report, for people ages 65 and older, 35.2% had a disability. People with disabilities are three times more likely to develop heart disease, stroke, diabetes, hypertension, and other secondary conditions. Studies show that being physically active can reduce the risk of developing chronic diseases; therefore, it is crucial to provide barrier-free and accessible health opportunities that are inclusive of individuals with disabilities so that everyone can engage in health benefits.

Enhance® Fitness is a low-cost evidence-based group exercise and falls prevention program. Its programming supports older adults at all levels of fitness to become more active, energized, and empowered to sustain independent lives. The class is proven to:

- Improve physical function
- Decrease depression
- Protect against falls and fall injuries
- Provide a social benefit
- Promote a physically active lifestyle
- Reduce medical care utilization costs
- Decrease unplanned hospitalizations
- Decrease mortality rates

Source:

Kraus, L., Lauer, E., Coleman, R., and Houtenville, A. (2018). 2017 Disability Statistics Annual Report. Durham, NH: University of New Hampshire.



LAKESHORE



Description of the Program

Enhance®Fitness, a low-cost, evidence-based group exercise and falls prevention program, helps older adults at all levels of fitness become more active, energized, and empowered to sustain independent lives. Including people with disabilities provides many health benefits by offering an inclusive opportunity for those who have typically been excluded.

The following are just a few of the many reasons inclusive exercise is good for people with disabilities:

- More energy to do the things you want to do
- Sleep better
- Make stronger muscles
- Like your body better
- Feel more confident
- Look better
- Lose or control your weight
- Make your body feel better
- Feel less stressed
- A more positive outlook on life
- Feel happier
- Relieve tension
- Improve mood
- Decrease joint pain and stiffness
- Meet new people
- Have fun!

What is Inclusion?

Inclusion means transforming communities based on social justice principles in which all community members:

- Are presumed competent.
- Are recruited and welcome as valued members of their community.
- Fully participate and learn with their peers; and
- Experience reciprocal social relationships.

Source:
Definition of Inclusion: NCHPAD - Building Inclusive Communities. (n.d.). Retrieved August 2, 2019, from <https://www.nchpad.org/1456/6380/Definition~of~Inclusion>

"Inclusion is not a strategy to help people fit into the systems and structures which exist in our societies; it is about transforming those systems and structures to make it better for everyone. Inclusion is about creative a better world for everyone."

-Diane Richler

(Past President of Inclusion International)

Suggestions for Program Site Coordinators and Master Trainers and Checklist

Use the information in this addendum for support when planning where to host an Enhance®Fitness program, choosing master trainers, recruiting participants with disability, and running a successful and inclusive program. The Program Site Coordinator Checklist below is a quick guide to refer to when preparing for a class. More information on the items in this list can be found throughout this addendum with additional details.

Program Site Coordinator Checklist

1. Educate yourself, Enhance®Fitness Instructors, and other supporting staff on disability inclusion and welcoming strategies. Plan a training or connect with a disability organization for resources on how to include people with disabilities.
2. Identify an accessible location to host classes and use NCHPAD's GRAIDs framework to assist with inclusivity.
3. Review the information in this addendum to learn how to remove barriers and make the proper accommodations, handouts, and fitness spaces.
4. Develop marketing materials in alternate formats (ex: Braille, audio descriptions, visuals, large print) that meet the ADA guidelines.
5. Use positive language and inclusive communication tips for your Enhance®Fitness instructors on working with individuals with a disability.
6. Consider the environment where the class is going to take place and ensure accessibility.
7. Familiarize yourself with different teaching strategies and movement adaptations for diverse types of disabilities. Know that it may be a trial-and-error system until you find what works best for everyone. More information specific to teaching strategies is listed below.
8. Use inclusive imagery that represents the population/community that you are serving. In this case, include diverse images of individuals with and without disabilities participating together.

How to Recruit Participants

Physical activity plays a key role in promoting health and wellness for all populations and across the lifespan. In older populations, physical activities provided through fitness programs can help individuals maintain and improve skills that support daily activities and promote independence. In the U.S., two in five adults aged 65 years and older have a disability. Historically, people with disabilities are faced with barriers that exclude them from participating in physical activity programming. The adaptations and guidelines provided in this guide will help you the Enhance®Fitness instructor to provide inclusive fitness programming for participants of all abilities. It is important for trainers and host organizations to actively target participants with and without disabilities in the program recruitment efforts.

It is also important for outreach materials to show the inclusion of people with disabilities in language and visuals. By this, people with disabilities can know about and participate in fitness, nutrition, and health-related programs. The more inclusive you are in your marketing and branding, the more people with disabilities will feel invited and motivated to participate in your health and wellness activities. When people see examples of people like themselves (elderly, young, with a disability) taking part in fitness initiatives, it conveys that fitness applies to everyone.

There are many strategies to consider with recruitment for your program. The list below provides objectives and resources that will assist with recruiting people with disabilities to your program:

- Effective Communication
 - <https://www.ada.gov/effective-comm.htm>
 - <https://www.nchpad.org/1254/5962/Web~Accessibility>
 - <https://www.ada.gov/pcatoolkit/chap3toolkit.htm>
- Fitness Center Accessibility
 - <https://www.nchpad.org/308/1909/Choosing~a~Fitness~Center>
 - <https://www.nchpad.org/1488/6431/ADA~compliance~in~Fitness~Centers>
 - <https://www.nchpad.org/1707/6824/Fitness~Center~Walkability>
 - <https://www.nchpad.org/fitnessCenter/index.html>
- Staff Training
 - <http://www.aahd.us/wp-content/uploads/2012/10/Quick-Guide-To-Interacting-7-2-13.pdf>

Source:

Disability Impacts All of Us Infographic. (2019, September 9). Retrieved from <https://www.cdc.gov/ncbddd/disabilityandhealth/infographic-disability-impacts-all.html>

Kraus, L.E., Jans, L. (2014). Implementation manual for guidelines for disability inclusion in physical activity, nutrition, and obesity programs and policies. Center on Disability at the Public Health Institute, Oakland, CA

Guidelines for Disability Inclusion

The [Guidelines for Disability Inclusion in Physical Activity, Nutrition, and Obesity Program Initiatives](#) were developed to assist in the updating of community health programs and policies to be inclusive of the needs of people with disabilities. The guidelines are as follows:

1. Objectives Include People with Disabilities:

Program objectives should explicitly and unambiguously state that the target population includes people with a range of different disabilities (cognitive, intellectual, and other developmental disabilities, mobility, visual, hearing, and mental health disabilities).

2. Involvement of People with Disabilities in Development, Implementation and Evaluation:

Program development, implementation, and evaluation should include input from people with a range of different disabilities and their representatives (e.g., community members or other experts with disabilities, potential participants with disabilities and their family members, personal assistants, and caregivers).

3. Program Accessibility:

Programs should be accessible to people with disabilities and other users socially, behaviorally, programmatically, in communication, and in the physical environment.

4. Accommodations for Participants with Disabilities:

Programs should address individual needs of participants with disabilities through accommodations that are specifically tailored to those needs.

5. Outreach and Communication to People with Disabilities:

Programs should use a variety of accessible methods to outreach and promote the program(s) to people with disabilities.

6. Cost Considerations and Feasibility:

Programs should address potential resource implications of inclusion (including staffing, training, equipment, and other resources needed to promote inclusion).

7. Affordability:

Programs should be affordable to people with disabilities and their families, personal assistants, and caregivers.

8. Process Evaluation:

Programs should implement process evaluation (with transparent monitoring, accountability, and quality assurance) that includes feedback from people with disabilities and family members, personal assistants, caregivers or other representatives, and a process for making changes based on feedback.

9. Outcomes Evaluation:

Programs should collect outcomes data, using multiple disability appropriate measures.

Source:

Kraus, L.E., Jans, L. (2014). Implementation manual for guidelines for disability inclusion in physical activity, nutrition, and obesity programs and policies. Center on Disability at the Public Health Institute, Oakland, CA.

How to Make Adaptations and Accommodations

While maintaining the integrity of the program, adaptations to a program are made to increase participation and to ensure that everyone, including participants with disabilities, can successfully participate in all the activities safely. Regardless of the type of adaptations made to the program, they should be goal-oriented so that everyone is successful in the activity. It is important that the instructors do not over-adapt the activity to where it is completely different and do not provide enjoyment and benefits to all the participants involved. Adaptations should never change the program!

During strength training exercises participants with physical or neurological disabilities might have trouble in executing the movement due to limited dexterity, lack of strength in the muscles involved, lack of balance, or limited core strength to maintain an appropriate and efficient posture and stiffness, or pain in muscles. For example, a participant that has limited mobility on one side of his body might not be able to perform a seated back row with both arms simultaneously. The participant could hold a light stick with both arms to perform the push and pull the movement pattern of the exercise and increase the range of motion. In this adaptation example, the side that has more mobility is assisting the side with the mobility impairment to perform the movement. This variation or adaptation of the exercise could also be helpful for someone that is experiencing tremors and has limited control when moving their arms.

Another way to create simple adaptations to exercise is by utilizing supportive equipment. For example, a participant with limited core function might have trouble leaning forward and maintaining posture and balance while performing a seated position triceps kickback. A wedge mat, cushion, massage roller, or backpack can be placed in the lap of the participant to offer support through the movement while maintaining an appropriate posture.

Modifications are changes to the content and skills participants are expected to master. There are times when modification is not needed, and simple accommodation is all that is needed for an individual to participate. Adaptations are changes made to the environment, equipment or how tasks are completed by the participant with disabilities during the activity. For example, a participant can

use his wheelchair during running activities. Practitioners must recognize when an accommodation is sufficient, and modifications are not needed. Participants are often the best resource when creating adaptations. Make sure to involve the participant during the process as they will have a better idea of what they are comfortable performing independently. This is also good practice to allow them to fully participate in their own learning experiences. Be sure to use inclusive language when teaching and discussing separate ways to do the activity so that an individual who needs an adaptation or modification does not feel singled out or on display during a lesson.

This guide was created utilizing the [Guidelines, Recommendations, Adaptations Including Disability \(GRAIDs\) framework](#). This framework is used to create recommendations for health promotion programs to highlight and add information, guidance, and resources on how to make the programs inclusive of people with disabilities so that they can enjoy the same health benefits from these programs as those without disabilities. The set of inclusion and adaptation recommendations are categorized into five domains: built environment, services, instruction, equipment and technology, and policy. These domains should be considered when making reasonable adaptations to any program. See below for the definitions of the GRAIDs domains:

Built environment

This includes all structural features for the setting where the program is to be held. Examples include elements of a building, ramps, clear paths/sidewalks, curb cuts, doorways, drinking fountains, adequate temperature, and lighting. Inaccessible venues can limit participation and prevent successful implementation of the Enhance® Fitness program. Traditionally, exercise and physical activity programs for older populations are offered in a variety of places and venues such as YMCAs, Senior Centers, churches, and other private and public spaces. The level of accessibility is different at each venue even within the same organization. Program staff should evaluate the level of accessibility when considering a venue to conduct their classes. There are numerous tools that can provide guidance about the venue's accessibility and areas of concern or areas that need improvements. The data collected in built environment accessibility assessments should be broad enough to determine accessibility beyond the building itself. Outdoor areas, classrooms, bathrooms, shared areas, snack bars, water fountains, changing rooms, and waiting rooms are just a few examples of areas that need to be included during the assessment. The [Community Health Inclusion Index \(CHII\)](#) and the [Accessibility Instruments Measuring Fitness and Recreation Environments \(AIMFREE\)](#) Manuals are two examples of tools that can be utilized during the evaluation phase. To access these tools, please contact the National Center on Health, Physical Activity and Disability (NCHPAD).

Services

Services include person-to-person assistance and other assistance that increases participation. Examples include transportation availability during class time and a peer assistant during physical activity. Services also include activities that would improve access to supports such as educational materials/handouts, program advertisements and inclusive communication materials.

Instruction (Training & Teaching)

This includes any technique used to enhance learning while teaching Enhance® Fitness concepts and conducting classes. At times, trainers can utilize site staff to assist individuals when performing tasks. Site staff support must be initiated and supervised by the trainer to ensure safety and learning. Trainers should consider different communication formats when providing instructions and teaching to ensure

that participants with disabilities are included. A trainer could provide instruction of a seated exercise and include pictures, videos, or demonstrations on how to correctly perform the exercise. Utilizing numerous means of communication will allow participants with various disabilities to understand the given information. For example, a participant with a hearing impairment could benefit from visual reinforcement while a blind participant would benefit from verbal or guided instructions. In addition, a participant with a cognitive impairment could benefit from the assistance provided by site staff.

Equipment & Technology

This includes any adapted equipment, products, materials, and assistive technology devices or systems. Examples also include sports or activity related equipment, utensils, automatic sliding doors, bus lifts, and audible pedestrian crosswalks. Common adaptations in a fitness class setting are the use of a microphone to assist with hearing or a stationary chair to assist with balance. If the use of a microphone is not available, consider strategies to eliminate background noise and move the participant closer to the speaker.

Policy

This includes any laws, regulations, rules, protocols, and procedures designed to guide or influence behavior. The policies can be either legislative or organizational in nature. Policies (with a capital P) refer to laws like the ADA or Section 508 Rehabilitation Act while policies refer to rules or protocols that you may put in place at your organization. For example, you could require your staff to receive disability education during orientation or develop ongoing education that your staff receives annually.

Conditions Associated with Physical Disabilities

Because of the variety of many physical disabilities, the fitness instructor needs to understand the associated conditions that accommodate the disability. Since many people with physical disabilities often have weakness or paralysis to a certain part of the body, the instructor needs to understand the terminology used to define movement limitations. Resources to consider include: [Resistance Training for Persons with Physical Disabilities, Avoiding Inactivity in Arthritis, Fitness in Parkinson's Disease, Sarcopenia, Aging, and Resistance Training and Osteoporosis.](#)

Some physical disabilities are classified as **progressive** in nature. This means that the condition will worsen over time. Some forms of multiple sclerosis and post-polio syndrome are considered progressive disorders, while other conditions, such as cerebral palsy and spinal cord injury are considered non- progressive. Progressive disorders will require more careful monitoring to assure that the resistance training program is not causing the condition to worsen, which is referred to as an **exacerbation**.

Persons with physical disabilities such as cerebral palsy or stroke often exhibit **asymmetrical weakness** or **hemiplegia**, where there is weakness or paralysis on the right or left side of the body. It is important to improve the affected side as much as possible without neglecting the non-affected side.

Spasticity is a general term used to describe various types of rigid or hypertonic muscle tone. It results in an exaggerated contractile response to stretch. It is often seen in people who have damage to their central nervous system, such as individuals with cerebral palsy, stroke, multiple sclerosis, and spinal cord injury. The amount of spasticity that a person has could be mild, moderate, or severe.

Spastic muscles can be rigid and are often accompanied by a 'clasped-knife' position, which refers to the arm or leg maintaining a flexed position. Some individuals will have severe spasticity, which often makes it difficult or impossible to extend the limb. Severe spasticity usually results from the muscle groups being placed in a fixed position for a significant period resulting in contracture. Contractures can often be stretched, except in severe cases where the muscle group is permanently shortened.

Since many individuals with physical disabilities will have some degree of spasticity (tightness), flexibility training should always be combined with resistance training. It is important for the instructor to identify the spastic muscle groups and develop a long-range plan to increase range of motion. If the joint has been in a fixed position for many years, or if the spasticity is severe, it may not be possible to fully extend the joint. The instructor should consult with a physical therapist, physician, or appropriate medical professional to determine how to stretch a spastic muscle without causing injury. Enhance®Fitness Instructors should refer to the Physician Notification form guidance from the provider.

Some individuals with physical disabilities develop **contractures**, which are shortened muscle groups and connective tissues surrounding the joint. The muscle tone is very high, which is referred to as **hypertonicity**. A contracture occurs when a body part (arm or leg) is placed in a flexed position over an extended period (weeks or months), usually resulting from spasticity. Sometimes this cannot be avoided due to neurological involvement, while at other times it can be prevented by constantly stretching the muscle group. Contractures may be permanent or temporary depending on the severity of spasticity and the length of time that the joint has been placed in a 'fixed' position. Some muscle groups with contractures may be able to obtain minimal improvements in strength, while others will be unable to benefit from a resistance training program. The Enhance®Fitness instructor should refer to the Physician Notification form guidance from the provider to determine if contractures can be strengthened. Flexibility training should always be integrated in the exercise prescription for persons who have contractures, since the primary problem is shortening of muscle fibers and connective tissues surrounding the joint.

At the other end of the spectrum are people who have **flaccid** (loose) or **hypotonic** muscle tone. This condition is often seen in people with post-polio syndrome and some individuals with spinal cord injury, Down Syndrome, and cerebral palsy. Persons with hypotonic muscle tone may or may not have enough nerve innervation to obtain improvements in strength. If there is some nerve innervation, the hypotonic muscle groups will be very weak and will require a great amount of work.

Some individuals with neurological conditions (i.e., multiple sclerosis, post-polio syndrome) get progressively weaker as they age. This may be related to the condition or could be associated with an inactive lifestyle compounded by the aging process. Encourage the participant to consult with their physician if you are concerned about a noticeable decline in strength.

At certain times in the person's life, it may be necessary to temporarily stop the training program because of an **exacerbation**. Exacerbations occur most often in people with multiple sclerosis. After an exacerbation, it will often be necessary to start at a much lower resistance because of the complications that resulted from the exacerbation. When resuming activity, the fitness instructor and participant should work together to connect with the client's physician to determine the appropriate training progression. Although the person may be unable to reach a prior level of strength before the exacerbation, the fitness instructor must reassure the client that strength levels can be improved.

Damage to sensory nerves occurs with many types of physical disabilities. This results in the inability to detect pressure against the skin, which, if left untreated, could result in a **pressure sore**. A pressure sore is an area of damage to the skin and underlying tissues resulting from unrelieved pressure and inadequate circulation. Since many people with physical disabilities who wear braces

or use wheelchairs have a high risk of incurring a pressure sore, they must frequently check all parts of their body for skin irritations that may result from a new resistive exercise or piece of equipment. For example, a sore could be acquired from sitting on a hard surface for a prolonged period or using a strap that is too tight. These injuries often start with a small area of redness (about the size of a quarter) and then gradually get larger if untreated.

Depending on the disability, muscle groups may be functional, partially functional (paresis), or nonfunctional (paralysis). The fitness instructor will need to assess which muscle groups fall into each category. There may also be some joint irregularity that needs to be considered in the exercise prescription. For example, individuals with cerebral palsy often have hip dislocations due to the strong pull of the adductor muscles. If there has been a history of hip displacement, the instructor and participant should work together to connect with the client's physician to determine if modifications need to be made to the resistance training program.

Progressive disorders will often result in a gradual loss of muscle mass and strength. When muscle soreness occurs in people who have a progressive condition, it may be an indication that the overload or intensity was excessive. The instructor needs to be extremely cautious when working with individuals who have progressive disorders.

Source:

Resistance Training for Persons with Physical Disabilities: NCHPAD - Building Inclusive Communities(n.d.). Retrieved from <https://www.nchpad.org/94/729/Resistance~Training~for~Persons~with~Physical~Disabilities>

Strategies for Classroom Management and Teaching

Ensure that all individuals can participate in class by providing inclusive opportunities and teaching strategies. This not only means that the exercise area and/or materials are accessible, but also that you teach using techniques that can be fully understood by all. Below are some general inclusive tips:

- Relax and be yourself. Using inclusive teaching and communication strategies takes practice.
- Treat all participants with the same respect you would any participant.
- Do not talk about disability in a negative context. Avoid using terms like "suffers from," "is confined to a wheelchair/walker," or "is afflicted with" a condition. How an individual experience his or her condition varies from person to person, and the built, programmatic, and attitudinal environments have a profound impact on individuals.
- Allow sufficient time for communication, do not attempt to finish their sentences, or provide words before they can say them.
- Allow individuals to have extra time to complete a task and do not finish it or do it for them.

For Deaf participants or those with hearing loss

Age-related hearing loss is the loss of hearing that gradually occurs in individuals as they grow older. Age-related hearing loss most often occurs in both ears, affecting them equally. It is typical for individuals with age-related hearing loss to be unaware that they have lost the ability to hear. It is one of the most common conditions affecting older and elderly adults. According to the National Institute on Deafness and Other Communications Disorders (NIDCD), one in three people in the United States between the ages of 65 and 74 has hearing loss, and half of those older than 75 have difficulty hearing. Individuals with hearing impairments can have trouble when following directions, instructions, or commands in an exercise class environment. Hearing loss can also make it hard to enjoy talking with family and friends, leading to feelings of isolation.

Here are some considerations for participants that are deaf or hearing impaired:

- Utilized assistive listening devices such as a smartphone or tablet “apps,” and closed-circuit systems (hearing loop systems) in your classroom.
- Reduce background noise by closing doors. Schedule the class during non-busy hours. Allow participants with hearing impairments to be closer to the instructor and lower the music volume while providing feedback or instruction. During a public health emergency, always follow CDC (Centers for Disease Control) guidelines regarding physical distancing and the use of equipment during group exercise.
- People who use lip reading or speech reading will pay close attention to others when they talk by watching the speaker’s mouth and body movements. Make sure to keep your face and mouth clear from distractions.
- Speak in a normal tone.
- Remove any background noise when communicating. Lower the volume or turn off the music when giving instructions or commands.
- Utilize a visual cue to demonstrate the exercise and the number of repetitions desired.
- During the registration process, ask if potential participants will need a sign language interpreter and, before class begins, make sure you have made appropriate arrangements.
- It may be helpful to write down tasks that you want participants to accomplish and post at the front of the room.
- Position yourself where everyone can see you, even if there is a sign language interpreter in the room. If a Deaf participant is communicating, focus your attention on the individual and not the sign language interpreter.
- Wait for them to complete their communication before responding.
- Do not cover your mouth or chew gum when speaking.
- Having a spare pen and pad of paper close by is handy for writing quick messages, but do not write a message and talk at the same time.

Source:

Age-Related Hearing Loss. (2020, April 14 Retrieved from <https://www.nidcd.nih.gov/health/age-related-hearing-loss>

For participants with vision loss or blindness

As people get older, they are more likely to develop age-related eye diseases that cause vision loss, such as macular degeneration and diabetic retinopathy. The 2016 National Health Interview Survey (NHIS) reported that 7.3 million American adults 65 years and older report having vision loss. Individuals with visual impairments have an above-average incidence of falls and 1.3–1.9 times more likely to experience hip fractures than the general population. Older people with eye diseases are ~3 times more likely than those with good vision, to limit activities due to fear of falling. Lack of physical activity participation can lead to diminishing physical and mental function, reduced social participation and overall quality of life. Regular exercise and physical activity can help reduce the fear of falling.

Here are some considerations for participants that are blind or have visual impairments:

- When working with individuals who are blind, the main concern is safety.
- Before beginning an exercise program, suggest that your clients talk with their health care providers or treating ophthalmologists about integrating regular exercise into their lives; some individuals who have had recent eye operations or are at risk for intraocular bleeding should avoid strenuous activity.
- Utilize a sighted guide. The participant can hold on to the elbow, shoulder, or hand of the guide

while walking, jogging, or dancing. They can also hold onto a tether, which is a short rope, towel, or shoelace held between the guide and the individual.

- Recognize that not all individuals with visual disabilities will have the same level of impairment or abilities. Some may be able to move independently or with some assistance. Make sure to establish during the initial consultation with your client what their level of impairment is and know the degree of assistance they will need. To accommodate individuals of varying levels of visual impairment, several changes to the physical environment may be necessary such as pictorials/Braille instructions and visual/tactual perimeter and numbering equipment stations.
- When using pictorials/Braille instructions, allow time for the person to look at performance pictorials and/or the opportunity to read about it.
- When using Visual/Tactual perimeter for safety, mark the perimeter of the exercise area with rope or contrasting colored tape on the floor.
- Be sure to allow time for exploration when introducing an individual to a new movement. Allow time for tactile and/or visual exploration.
- The instructor should demonstrate the movement and link the movement to language, including the name of the exercise and muscle involved.

Source:

Age-Related Hearing Loss. (2020, April 14). Retrieved from <https://www.nidcd.nih.gov/health/age-related-hearing-loss>

Brundle, C., Waterman, H. A., Ballinger, C., Olleveant, N., Skelton, D. A., Stanford, P., & Todd, C. (2015). The causes of falls: views of older people with visual impairment. *Health Expectations*, 18(6), 2021-2031.

Yardley, L., & Smith, H. (2002). A prospective study of the relationship between feared consequences of falling and avoidance of activity in community-living older people. *The Gerontologist*, 42(1), 17-23.

Grue, E. V., Finne-Soveri, H., Stolee, P., Poss, J., Sörbye, L. W., Noro, A., ... & Ranhoff, A. H. (2010). Recent visual decline—a health hazard with consequences for social life: a study of home care clients in 12 countries. *Current gerontology and geriatrics research*, 2010.

For participants with a cognitive impairment:

Cognitive functions can change and vary with the process of aging. Changes can be positive. It is known that older adults often have more knowledge and insight from a lifetime of experiences. Older adults can learn new things, create new memories, and improve vocabulary and language skills. On the contrary, changes in the brain can also be negative to cognitive function. With the process of aging certain parts of the brain can shrink affecting areas that control certain aspects of thinking such as remembering, planning, and organizing, and making decisions. The decline of cognitive abilities in older individuals can affect daily life tasks and independence and increase difficulty finding words and recalling names, problems with multi-tasking, and decreases in the ability to pay attention.

Here are some considerations for people with cognitive impairments:

- Provide adequate time to complete tasks.
- Repeat, write down or break down directions into small steps.
- Do not give too many directions at once.
- Do not rely only on written directions or information.
- Use visual examples of concepts (e.g., pictures of exercises) or provide demonstrations of activity.
- Speak clearly and utilize simple language and avoid using exercise science jargon or acronyms.
- When communicating with someone, always be calm and reassuring.
- Include the family or caregiver in the communication when a client or resident is not able to understand what you are trying to say.
- Ask a family member or a caregiver how the person can be helped to communicate with you.

- Remove any background noise when communicating. Lower the volume or turn off the music when giving instructions or commands.
- Make sure that the person can see you.
- Repeat the message as often as needed.
- Let the participant draw a picture or write things down for you if this makes it easier for them to tell you what they want or need.
- Ask “yes” or “no” questions.
- Face the person that you are talking to and make eye contact, this helps the participant to see and pay attention to you.
- Make sure that the lighting is helping and not interfering with the person’s vision.
- Do not complete the other persons’ sentences. Always give opportunities for the person to finish their thoughts before interrupting.
- Look at the facial expressions of the participant. Is the person trying to tell you something? Do they look like they are in pain? Are they holding a part of their body, like their hand or their head?
- Use gestures when appropriate. Point to objects or demonstrate an action, such as sitting on a chair.

For participants with mobility disability

Mobility is the most common disability among older Americans. According to the U.S. Census Bureau, 40 percent of people aged 65 and older have at least one disability. Of those 15.7 million people (about twice the population of New Jersey), two-thirds reported having difficulty walking. In some individuals, mobility impairments could affect the ability to perform activities of daily living such as visiting the doctor, bathing, or getting dressed. The use of mobility devices such as walkers, wheelchairs, power chairs, and canes can assist individuals to move independently and to navigate activities of daily living independently. Instructors that successfully implement adaptations for participants to fully participate in exercise and physical activity programs can provide health and wellness benefits regardless of their disability status.

Here are some considerations for people with mobility impairments:

- Never touch or move a mobility device without asking. It is also never appropriate to ask someone if you can remove their mobility device from their location.
- Be considerate of the extra time it may take your client to transfer between exercise or complete an exercise routine.
- Never assume that your client needs your assistance. It is always polite to offer your assistance, but once you have offered, wait for a reply before acting. If your client accepts your offer, wait to be directed.
- Never make assumptions, in general. For example, not everyone with a mobility impairment uses a wheelchair. Many disabilities can be hidden, such as learning differences, balance difficulties, etc., and may or may not be visible. Therefore, avoid making assumptions and, instead, get to know your client’s individual needs, preferences, and abilities.
- If you are uncertain about what to do when interacting with your client, ask. Most people would rather answer a question about protocol than be in an uncomfortable situation.
- Never patronize your client(s) by patting them on the head or shoulder.
- Do not assume that a client who uses a wheelchair wants to be pushed. Ask first.
- Be patient. Allow your client to take as much time as necessary.
- Ensure that the classroom space, parking lot and building are accessible.
- If the program space is not on the ground floor, ensure it is accessible by an elevator.

- Make sure there are accessible restrooms on the same floor as the program space.
- Provide a minimum 3-foot-wide pathway through the program space.

Source:

Carmeli, E., Patish, H., & Coleman, R. (2003). The aging hand. *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences*, 58(2), M146-M152

US Census Bureau. (2014, December 8). Mobility is Most Common Disability Among Older American Retrieved from <https://www.census.gov/newsroom/press-releases/2014/cb14-218.html>

For participants with limited dexterity

Hand function decreases with age in both men and women, especially after the age of 65 years. These changes occur because of degenerative processes in the musculoskeletal, vascular, and nervous systems. The hand function changes include prehension patterns (grip and pinch strength) and hand dexterity. Hand dexterity is the ability to coordinate movements to grasp and manipulate objects. These age-related changes are often accompanied by underlying pathological conditions (osteoporosis, osteoarthritis, rheumatic arthritis, and Parkinson's disease) that are common in older adults. Limited dexterity can affect daily life activities such as writing, texting, driving, typing, getting dressed, opening canned foods, and doing arts and crafts.

Fortunately, there are several light exercises and other activities that keep the body strong, loose, and limber. In this way, older adults can minimize their own risk of developing issues with dexterity or mobility. Consider incorporating light hand exercises as part of your exercise program. These hand exercises are considered low intensity and can be incorporated during cool-down periods.

Here are some considerations for individuals with limited dexterity beyond the Enhance®Fitness class:

- Improve hand dexterity by practicing range of motion exercises for your hand, wrist, and forearm muscles.
- Practice exercises by using a stress ball.
- Utilize straps, Velcro, resistance bands, wrist weights or ankle weights or handles when performing strength training.
- Utilize a dynamometer to assess handgrip strength.
- Do not perform exercises on joints that are inflamed or painful.
- All exercises should be done slowly and deliberately, to avoid pain and injury.

General Modification

To create appropriate modifications to the program, practitioners should consider making changes to the skills, instruction, rules, equipment, and environment. One of the simplest ways of adapting to an activity is to modify or substitute the skill involved.

The following provides examples of curriculum adaptations using the GRAIDs domains:

Instructors may modify **instructions** by modeling what the individual is expected to do. Instructions may be printed out in large print and hung up for the individuals to see during the time of the lesson. Oral prompts can be given.

Modifications to **equipment** may include strapping so that the individual with gross motor difficulties may hold it easily. Other adaptations may include arm exercises for individuals who are not able to use their legs or straps to hold their feet in place on an exercise bike.

The **environment** in which the individuals participate must be safe, secure, and welcoming. Padding, hand holds, and adapted equipment should be readily available. The area must be clearly defined. The use of taped or painted areas makes it easier for individuals to see boundaries. Create a safe place for individuals and make sure the individuals know how to find it.

Fitness Checks

The information obtained from fitness checks can be helpful to the participants to be able to measure their fitness improvements from participating in Enhance® Fitness. This information is also valuable for the trainers conducting the program. This data could be used to determine periodization and the progression of training in the Enhance® Fitness program. It is important to select fitness checks that can be performed by individuals with disabilities. Trainers can provide adaptations to protocols and equipment to ensure that individuals with disabilities can participate.

Here are some considerations when conducting fitness checks:

- If possible, test under similar conditions (i.e., same time of the day). Keep records on testing conditions that can affect the testing results (i.e., temperature, hours of sleep, last meal eaten, fatigue, etc.)
- Do not test if there has been a recent change in prescription. Learn how the new prescription affects the fitness function of the participant.
- Give the participants enough time to be familiar with the test. Allow participants to practice before the testing session without getting fatigued.
- If possible, incorporate the fitness tests during regular classes.
- If you are unsure how to adapt the test, ask the participant how they would adapt it. If there is no normative comparison data utilize the fitness checks result as pre (baseline) and post (progress) data.
- Never test alone and ensure there is someone to assist in case of an emergency.
- If needed, adapt equipment. For example, utilize Velcro straps for someone with limited hand grip during the biceps curl test.
- Utilize the information collected during the fitness checks to establish individuals' goals.
- Prioritize safety. Be aware of physiological responses when performing fitness checks. For example, someone might lose balance with a sudden stoppage of aerobic work.
- Utilize the RPE scale to assess the exertion level of the participant at any moment of the testing.

Some fitness checks might not be appropriate for some individuals. For example, some individuals who use wheelchairs might not be able to do the chair stand test, but they might be able to perform a dip exercise from their wheelchair.

Fitness Assessments for Individuals Who Use a Wheelchair: Toolkit for the Fitness Professional

This toolkit will enable the fitness professional to be able to effectively conduct fitness assessments for individuals with a disability. Here are some fitness assessment options for individuals beyond the Enhance® Fitness class:

<https://www.nchpad.org/1476/6408/Fitness~Assessments~for~Individuals~Who~Use~a~Wheelchair>

Fitness Assessment Video Series for Individuals Who Use a Wheelchair

<https://www.nchpad.org/1476/6409/Wheelchair~Fitness~Testing>

What to consider when teaching Enhance® Fitness

Safety

Staff and practitioners should always consider the safety of their participants. Safety should be addressed during activity planning, activity prescription, and after activity. Be consistent and intentional about reinforcing safety.

Here are some events that might prompt you to stop the activity:

- Chest pain (angina)
- Shortness of breath, wheezing
- Leg cramps, or claudication (cramping pain in the leg is induced by exercise, typically caused by obstruction of the arteries)
- Light-headedness, confusion, pallor (unhealthy pale appearance), nausea, or cold/clammy skin (poor circulation)
- Noticeable change in heart rhythm
- Physical or verbal manifestation of severe fatigue
- Subject requests to stop
- Faulty equipment
- Weather issues such as lightning or extreme heat (if class is outdoors or in a building with no air conditioning)

Safety considerations should also include these additional inclusive efforts.

General Safety Considerations

- Avoid using equipment that is made with latex as this is a common allergy.
- Provide a safe zone/quiet space for individuals who may become overstimulated in loud, busy spaces.
- If possible, consider providing an additional instructor to assist participants.
- Be aware of medications that may affect exercise tolerance or performance.
- Consider all fitness levels. Some individuals might fatigue faster than others. Utilize a fatigue or effort evaluation assessment such as the **Rating of Perceived Exertion (RPE) Scale** during your classes.
- Stop exercising if you experience pain, discomfort, nausea, dizziness, lightheadedness, chest pain, irregular heartbeat, shortness of breath, or clammy hands.
- Physical activity may increase spasticity in some cases.
- Individuals with disabilities that affect social interactions may not feel comfortable participating in group or partner activities. Provide opportunities to perform the skill on their own and then reassess the willingness to participate in the group/partner activity.
- Keep in mind that some participants with disabilities might experience spasticity, decreased range of motion, decreased cardiovascular and muscular endurance and loss of flexibility.
- Avoid ballistic stretching (bouncing). Stretch slowly and avoid stretching to a pain level.

- Always achieve good positioning of the head, trunk, and proximal joints of extremities.
- Provide frequent opportunities to hydrate with increased physical activity to prevent dehydration.
- Ensure that participants empty their bowel/bladder before exercising because autonomic dysreflexia (blood pressure changes) can be triggered by a full bladder.
- Provide accessible seating areas to accommodate those that might have an episode of syncope (fainting) due to orthostatic hypotension (reduce in blood pressure due to body position).
- Familiarize yourself with new prescribed medications and their contraindications regarding how they may affect body functions.

Safety Considerations for Individuals with Spinal Cord Injury (SCI)

- Individuals with spinal cord injury have a limited sweat response to exercise. Provide fans or spray water bottles to assist with cooling the body from the outside.
- Individuals with spinal cord injury (SCI) may experience exacerbated blood pressures that can be triggered by anything causing pain below the lesion level such as a tight Velcro strap or urinary tract infection. Look for symptoms such as nausea, goosebumps, sweating and a stuffy nose.
- Individuals with SCI may not be able to keep a safe body temperature. Provide enough breaks to cool down during the activity and avoid prolonged exposure to the sun. Use a spray bottle or a fan to help cool down.
- Individuals with SCI may not be able to stay warm when exercising in the cold. Make sure that the participants have enough layers when participating in activities in cool temperatures.
- Individuals with SCI may experience a sudden drop in blood pressure when in an upright position. Avoid stopping exercise abruptly and be aware of this possibility when changing positions. Look for signs such as lightheadedness, dizziness, or nausea.
- Do not allow individuals with SCI to start exercising if their systolic blood pressure (SPB) is \geq 180mm Hg.
- Elevate the feet and legs if swelling occurs particularly for those with autonomic dysreflexia. Monitor skin closely for breakdown in areas of swelling.
- Additional information:
 - <https://www.shepherd.org/patient-programs/spinal-cord-injury/after-rehab/health-and-safety>

Safety Considerations for Individuals who use Mobility and/or Assistive Devices

- Encourage movement and healthy nutrition to prevent the development of pressure sores, especially for individuals who use wheelchairs.
- Provide spaces to rest or assistive devices if an individual easily becomes tired during activity.
- Individuals using mobility devices or with cerebral palsy could fatigue easier during locomotor activities due to a larger requirement of energy expenditure and a poor economy of movement.
- Be mindful of distances traveled and provide sufficient time to recover during the activities.
- Start with frequent short bouts of exercise.
- For wheelchair users, avoid overuse of the shoulder joint to decrease the risk of shoulder injury which is prevalent in this population.
- Avoid equipment and/or parts of mobility devices such as sports chairs that rub on the skin to avoid pressure sores.

Safety Considerations for Individuals with Traumatic Brain Injury (TBI)

- For individuals with traumatic brain injury (TBI) use protective gear such as headgear or helmets on activities that involve a risk of falling.
- Additional information:
 - <https://www.nchpad.org/1262/5952/Fitness~Considerations~for~Traumatic~Brain~Injury>

Safety Considerations for Individuals with Down Syndrome

- Individuals with Down Syndrome may have hypermobile joints. Hypermobility can cause joints to stretch farther than normal. Flexibility exercises are not recommended in most cases.
- Additional information:
 - https://trace.tennessee.edu/cgi/viewcontent.cgi?article=2703&context=utk_chanhonop_roj

Safety Considerations for Individuals with Cerebral Palsy

- Individuals with cerebral palsy might experience involuntary and/or uncontrolled movement that occurs primarily in the extremities. These movements may increase with effort and emotional stress.
- Additional information:
 - <https://www.cerebralpalsy.org/information/health-fitness>
 - <https://www.aacpdm.org/UserFiles/file/fact-sheet-fitness-083115.pdf>

Creating Inclusive Handouts and Picture Cards

Handouts can be recruitment materials, class worksheets, pamphlets, and evaluation forms. Creating an inclusive handout should consist of accessible, culturally, and linguistically appropriate formats to promote understanding and should be readily available in alternate formats (see bulleted list below).

Handouts may include large, bold, clear print, and pictures. Individuals with an intellectual disability may be more successful with color coordinated resources and pictures. Individuals with intellectual disability may also interpret concepts, words, and pictures, so try to avoid using abstract concepts that could be misinterpreted. Some individuals with intellectual disability may have a lower reading level or may not be able to read at all. Voice-over resources that provide audio, words, and pictures of the concept being explained may help this population succeed. Other adaptations may include a larger print poster, closed captioning education videos, and voice-over resources for those who may not be able to read.

Providing educational materials and handouts during the lesson is a great way for participants to be involved during class or to take home information. Note that some worksheets may be most beneficial to an individual with a disability if a caregiver or interpreter is able to assist; providing materials for both the participant and caregiver are recommended. Use the following as a guide to promote inclusive and accessible handouts:

- Consider individuals with disabilities and groups that focus on disability-related topics when

- targeting various potential audiences and tailor how information should be presented.
- Ensure that some campaigns address disability-related issues.
 - Use accessible formats, such as contrasting images and lettering, large and sans serif fonts (such as size 18; Arial, Calibri, Helvetica, Tahoma, or Veranda), or Braille versions.
 - Avoid italics, if possible. Use bold or underline to enhance words.
 - Ensure that materials display inclusive imagery, meaning that images of people with and without disability are shown.

Connect with disability organizations (such as a local Center for Independent Living) to address readability, accessibility, and inclusivity in printed materials. These organizations may also be able to assist with inclusive images or direct you to other valuable resources.

Remember, simple sentence structure is vital. At times, an assistant, caregiver, or support person may be appropriate for some participants when completing worksheets or assignments.

Active Aging Resources

These resources provide additional information about physical activity and exercise for older adults:

CDC Guidelines on Physical Activity

- <https://health.gov/our-work/physical-activity/current-guidelines> NCHPAD Resources
- <https://www.nchpad.org/1023/5332/Senior~Corner>
- <https://www.nchpad.org/1078/5494/Senior~Corner~ABC~s~of~Balance>
- <https://www.nchpad.org/1752/6909/Discover~Inclusive~Active~Aging>
- <https://www.nchpad.org/1705/6819/Promoting~Physical~Activity~for~Older~Adults>
- <https://www.nchpad.org/121/938/First~Steps~to~Active~Health~Balance~and~Flexibility~Exercises~for~Older~Adults>
- <https://www.nchpad.org/1154/5674/Eating~Healthy~Through~the~Lifespan~Older~Adults>
- <https://www.nchpad.org/360/2050/Defining~Secondary~Conditions~for~People~with~Disabilities>
- <https://www.nchpad.org/351/2038/Exercise~Video~List>
- <https://elearn.nchpad.org/course/view.php?id=13>

Other Resources

- <https://www.asha.org/uploadedFiles/ASHA-Letter-to-CDC-About-Face-Masks-060820.pdf>
- <https://www.goodhousekeeping.com/health/g33471599/best-clear-face-masks/>

Technical Assistance

NCHPAD offers a free information service on a wide variety of topics related to physical activity, fitness, recreation, sports, leisure, nutrition, disability, and chronic health conditions. Contact one of our talented information specialists to help you locate the resources you need. Technical assistance is available between the hours of 9:00 AM – 5:00 PM CST on Monday – Friday via telephone 800-900-8086, live chat at www.nchpad.org, and email at email@nchpad.org.

To view more resources and services which can benefit all ages and populations, connect with us:
www.nchpad.org | email@nchpad.org | 1-800-900-8086



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