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People with disabilities face significant barriers when attempting to access health and wellness activities





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Opening Commentary

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In 1988, I was born with one leg and the doctors had no idea what had happened. All of the tests came back normal, yet I still only had one leg. Throughout my childhood, my mother encouraged me to do whatever I wanted. Following her advice, I became really good on my crutches, enjoyed playing a variety of games and sports, and adapted to all kinds of situations. Nothing would stop me!

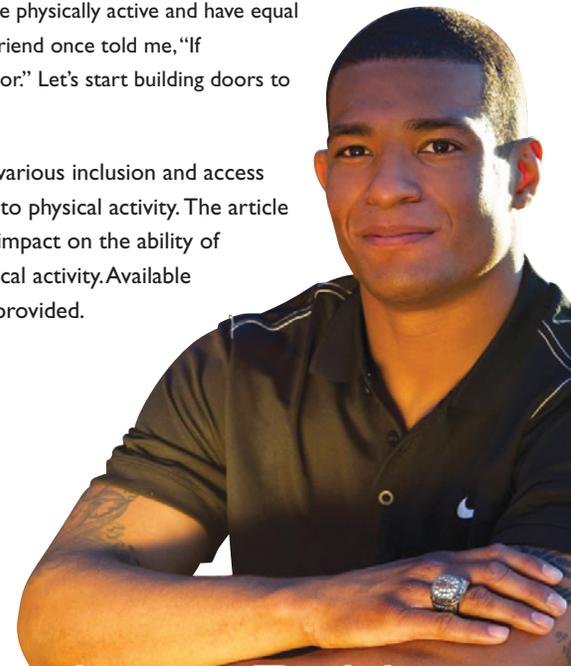
Even with my mom's advice and encouragement, I still heard the comments and felt the stares of people around me wherever I went. She always reassured me by saying I was made this way for a reason, and that someday I would find out what the reason was. That day came when I was a freshman in high school. I had just finished my first season of playing football on the high school team. I had fun, but it was difficult hopping around on one leg to make tackles. One day, my cousin invited me to wrestling practice. I jumped in, and couldn't wait to tell my mom that I found something I really wanted to do.

In my first year of wrestling, I got last place in the city high school tournament in Mesa, Arizona. I was horrible. I went over to the opposing coach to shake his hand after my final defeat. He looked at me and said, "Good job." I knew he didn't mean it. The way he said it, and the look he gave me, really said, "You shouldn't be out here competing." He felt sorry for me. That day, on that mat, that coach sparked a fire in me that has since never gone out. I was going to prove to him and everyone else that I *did* belong. I went home that night and wrote "State Champion" on a sticky note. This mentality continues to light my fire to compete, and prove that I can be as successful as I want in any aspect of my life.

I went 96–0 in my junior and senior years of high school, and I won two Arizona State Championships. In my senior year, I won the National High School Championship. Yet despite my success, I did not receive any scholarship offers to wrestle at Division I colleges. Everybody I beat received scholarships, but I did not. Why? Some coaches felt I couldn't compete on the college level with one leg. That didn't stop me from going after my dream. In 2011, I won the NCAA National Wrestling Championship at the 125 pounds weight class. I was voted the best wrestler at the tournament and yes, I still had just one leg.

I firmly believe in *access* and *inclusion* for people with disabilities in all aspects of life. I feel even more strongly that people with disabilities should be physically active and have equal opportunities to pursue their dreams and goals. A friend once told me, "If opportunity doesn't knock, then build your own door." Let's start building doors to access and inclusion for all.

In this issue, James Rimmer, Ph.D., examines the various inclusion and access needs of individuals with disabilities, with regard to physical activity. The article reviews the current state of accessibility and its impact on the ability of individuals with disabilities to participate in physical activity. Available resources to help increase accessibility are also provided.



A Focus and Pathway to Inclusive Physical Activity for People with Disabilities



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

Despite the well-established physical and cognitive benefits associated with regular participation in physical activity, more than 50 million Americans with disabilities are at a greater health risk because their rate of sedentary behavior is much higher than in the general population. A common reason for this lower rate of physical activity participation—seen in children, adults, and seniors with disabilities—relates to limitations in accessing the array of physical activity programs offered in a community. A more inclusive and streamlined message is needed so that people with and without disabilities are given the same opportunities to be equally active in their community.

Introduction

Socioeconomic disadvantages as well as structural, programmatic, and attitudinal barriers to physical activity are widely recognized as the major contributors to health disparities among people with disabilities.¹⁻³ Traditional barriers such as cost, transportation issues, inadequate support services, and lack of professional training in disability and accessibility issues in the built environment also limit opportunities for people with disabilities to become physically active.⁴ Even when people with

disabilities are enthusiastic about participating in physical activity, personal and environmental barriers can often be overwhelming and sometimes insurmountable.⁵⁻¹⁰

The high incidence of secondary conditions reported among people with disabilities,¹¹⁻¹³ combined with environmental barriers that discourage participation in many community-based physical activity programs (e.g., inaccessible exercise equipment, cost of program, lack of transportation), present a unique opportunity to increase physical activity participation in this underserved group. While most of the resources in public health today are directed at *prevention of disability*,¹⁴ there is growing consensus among public policy experts that *prevention of secondary conditions* in people with disabilities is an equally important issue.¹⁵ Physical activity can have a significant impact on reducing secondary conditions in people with disabilities,¹⁶ as well as improve their overall quality of life.



Table 1. General Facts on Disability

- There are more than 50 million people in the U.S. (approximately one of every six people) who have a physical, cognitive, or sensory disability.
- Rates of obesity among children and adults with disabilities are significantly higher than in the general population.
- DALEEDS (Disability Associated Low Energy Expenditure Deconditioning Syndrome) affects millions of people with disabilities and results in large amounts of sitting across the day, leading to greater risk of chronic and secondary health conditions.
- Opportunities for people with disabilities to engage in physical activity are limited by physical, programmatic, and attitudinal barriers.
- There is a significant gap in transitioning people with newly acquired disabilities into lifelong physical activity programs in their community.

Overview of Disability

The information below provides important background and context regarding the prevalence and health of people with disabilities.

Definition

*The International Classification of Functioning, Disability, and Health (ICF)*¹⁷ describes **disability** as the interchange of person-level characteristics within the social context or environmental setting. The principle measurement unit is not the person, but rather the specific interaction with his or her environment. The *ICF* is a good framework for health and fitness professionals because it isolates four critical areas that may affect an individual's participation: (1) *body functions*, which encompasses body structures as the anatomical parts of the body and impairments as problems in body functions or structures, (2) *activity* is the demonstration of a task or action, (3) *participation* is involvement in a life situation, and (4) *environmental factors*, which comprise the physical, social, and attitudinal contexts in which people live. Each of these components will help professionals isolate the gaps in programs and services that must be addressed when facilitating an individual's participation in a sport, recreation, or fitness program.¹⁸ A few key facts on people with disabilities appear in Table 1.

Prevalence

According to the latest U.S. Census data,¹⁹ approximately 51.5 million adults have a disability. The report defines disability using a set of criteria that places individuals into three distinct categories of disability: *communicative* (e.g., blind, deaf, speech disorder), *physical* (e.g., use an assistive aid, difficulty walking, climbing stairs), and *mental* (e.g., mental or emotional condition that seriously interferes with everyday activities). Breaking down the 51.5 million adults: 41.5 million have a physical disability and close to 12 million of those individuals need assistance from another person to perform one or more physical functions or activities. Those activities can include, but are not limited to, moving around inside the home, getting into or out of bed, bathing, dressing, eating, using the bathroom, leaving the home, managing finances, preparing meals, doing housework, taking prescription medication, and using the telephone.¹⁹

Health Disparities

Health disparities are preventable differences in the burden of disease, injury, violence, or opportunities to achieve optimal health that are experienced by socially disadvantaged populations.²⁰ Individuals with disabilities experience more health problems and have less access to health care than their counterparts without disabilities.²¹ The 2010 Behavioral Risk Surveillance Survey (BRFSS) reports that 7.3% of people with disabilities have experienced a stroke, 10.2% have had a

heart attack, and 17.8% were diagnosed with diabetes, compared to 1.6%, 2.7%, and 7%, respectively, of the non-disabled population.²² People with disabilities are also more likely to report "fair" or "poor" health compared to those without disabilities²³ as well as more frequent days of bad mental and physical health.²² Additionally, 38.1% of people with disabilities are obese (BMI \geq 30), compared to 25% of the able-bodied population.²² The trend in higher obesity rates among individuals with disabilities has been found across age and disability type. This includes adults^{24,25} as well as adolescents and children^{26,27} with intellectual and physical disabilities. The trend in higher rates of obesity is associated with a higher rate of secondary health conditions, including deconditioning, pain, fatigue, obesity, depression, and incontinence.^{11,28}

Barriers to Physical Activity for People with Disabilities

Children and adults with disabilities are generally reported to have higher levels of physical inactivity compared to the general population.^{29,30} They are often predisposed to community settings that have limited opportunities for participation in physical activity.^{31,32} A national study was funded by the Centers for Disease Control and Prevention (CDC) to examine barriers and facilitators to physical activity⁴ associated with participation in fitness and recreation programs and facilities among people with disabilities. The study organized focus groups in 10 regions across the nation, with four sets of participants: (1) people with disabilities, (2) architects, (3) fitness and recreation professionals, and (4) city planners and park district managers. Sessions were recorded, the content was analyzed, and focus group facilitators took notes of identified barriers and facilitators to access.

The results of this qualitative national study, one of the most comprehensive to date, found that there were a number of personal and environmental barriers related to access and participation reported by both people with disabilities and professionals affiliated

with fitness and recreation facility design and/or program development (e.g., city planners and park district managers, fitness and recreation professionals, architects). Several of these barriers are related to the environment, such as inaccessible facilities, equipment, and programs. Other barriers included lack of adequate or reliable transportation, limited income, and neighborhoods where people did not feel safe walking outdoors. Others are related to personal barriers, such as low exercise self-efficacy and concern that exercise will not benefit their health or may even worsen it. Barriers reduce personal choice options, inhibit participation in health promotion activities, and prevent people with disabilities from fully participating in their communities. These barriers are divided into 10 major categories and are listed in Table 2.

Addressing Barriers through Inclusion

The conceptual model shown in Figure 1 was developed by a rehabilitation engineering research center, Rectech, to provide health and fitness professionals with a common set of strategies to identify key issues that will increase or decrease an individual's ability to participate in physical activity. The four domains—access, participation, adherence, and health and function—relate to all forms of physical activity including fitness, recreation and sport, group and individual classes, as well as indoor and outdoor activity. The intention of the model is to provide health and fitness professionals with a systematic framework for addressing and eliminating barriers to physical activity for community members with disabilities using the metaphor of “ramping up” to successive levels.



Figure 1. Conceptual Model for Promoting Physical Activity among People with Disabilities

Developed by rehabilitation engineering research center Rectech, www.rectech.org.

Designed by Laura Watkins, Lakeshore Foundation, Birmingham, Alabama.

Table 2. Barriers to Physical Activity in People with Disabilities

Category	Definition
Built and Natural Environment	Inaccessibility of the built or natural environment.
Cost/Economic	Cost of participating in recreation/fitness activities or cost associated with making facilities accessible.
Equipment	Exercise and recreation equipment that is not accessible.
Guidelines, Codes, Regulations, and Laws	Issues related to the use and interpretation of laws and regulations concerning accessibility, particularly building codes and the Americans with Disabilities Act (ADA).
Information	Lack of information both within the facility (e.g., signs, brochures) and in facility brochures and advertisements.
Emotional/Psychological Barriers	Physical, emotional, or psychological barriers to participation in fitness and recreation activities.
Knowledge, Education, and Training	Barriers regarding the education and training of professionals in the areas of accessibility and appropriate interactions involving people with disabilities.
Perceptions and Attitudes	Perceptions and attitudes of both professionals and non-disabled individuals toward accessibility and people with disabilities.
Policies and Procedures	Barriers imposed by the implementation of facility or community-level rules or regulations.
Resource Availability	Needed resources that would allow people with disabilities to participate in fitness and recreation activities, including transportation and adaptive equipment.

The most fundamental requirement for a person with a disability to engage in regular physical activity is *Access*. Access refers to the ability to use the built environment (e.g., recreation centers, playgrounds, etc.). Individuals with a physical, cognitive, or sensory disability often face several obstacles to using certain parts of a facility.^{4,8,33} The most common access issues for people with disabilities involve physical access—doorways and entrances, parking facilities, locker rooms, bathrooms, and exercise equipment.

The second domain is *Participation*. People with disabilities need to be able to fully participate in the activities to which they have access. Having access to a facility (e.g., swimming pool, weight training room, etc.) is a necessary but often insufficient condition for a satisfactory and health-enhancing experience. Users also must have the ability to properly position themselves on the equipment and be offered accommodations or adaptations when specific programs are not accessible. Information on the availability of facilities, services, programs, and equipment should also be provided in an accessible format (e.g., audio or braille for people who are blind, pictures for people with intellectual disabilities, etc.).

The third domain is *Adherence*. While adherence to regular physical activity is a

Figure 2.

With no steps or ladders, zero depth entry pools are accessible and safe for people of all ages and capabilities.

(Lakeshore Foundation, Birmingham, Alabama)



major issue for all Americans, it is often a greater problem among those with disabilities. This is often due to limited opportunities for people with disabilities to participate in a variety of physical activity, sport, or recreation programs. Physical activity programs need to be readily available, accessible, and socially engaging for *all* participants. The most common strategies for increasing adherence to regular physical activity are offering a variety of activities to choose from, providing multiple locations for the activities, and developing social networks to support participation in the activities.

The apex of the conceptual model is *Health and Function*. It is widely accepted that participating in any type or amount of physical activity improves both quality of life and health status.³⁴ When considering the impact of physical activity on health status, it is important to recognize that our knowledge of these impacts for people with disabilities is not nearly as well understood as it is for the general population.³⁵ For example, among individuals who do not have a disability, walking can be accomplished with little risk and minimal planning. By contrast, in people who use manual wheelchairs for mobility, wheeling for exercise using smaller shoulder muscle groups has the potential to increase the risk of overuse injuries to the shoulder. Therefore, consideration of health and function must be a prominent part of the outcome evaluation process to ensure that programs for people with disabilities are having a sustainable and health-enhancing effect.

A Resource for Health and Fitness Professionals: The National Center on Health, Physical Activity, and Disability

Health and fitness professionals interested in promoting physical activity among people with disabilities will find it helpful to have an online resource center that can provide various types of materials, programs, and services. The National Center on Health, Physical Activity, and Disability (NCHPAD) was created in 1999 with a grant from the Centers for Disease Control and Prevention. For the past 15 years, the NCHPAD has

served as a gateway for information, resources, programs, and training for individuals with disabilities, caregivers, educators, rehabilitation providers, and public health professionals. NCHPAD's primary aim is to support the *inclusion* of people with disabilities in existing and future physical activity programs and assist disability and non-disability service providers in addressing specific areas that will increase participation in physical activity among children, adults, and seniors with disabilities.

NCHPAD also provides multiple programs and services to over 3,500 members with disabilities and chronic health conditions at its central headquarters, the Lakeshore Foundation, in Birmingham, Alabama. Lakeshore's universally designed facility, one of the largest and most accessible in the world, can help service providers learn specific ways that they can make their own facility more disability and aging "friendly." For example, a low-height front desk (Figure 4) is provided to illustrate the importance of access and inclusion for new members, allowing them to feel welcomed and accommodated when joining the facility. Also, the Lakeshore Aquatics Center offers a pool with zero grade entry (Figure 2) and an accessible pool lift (Figure 3), both of which are becoming more common in newer facilities.



Figure 3.

Accessible pool lifts help physically challenged people access swimming pools.

(Lakeshore Foundation, Birmingham, Alabama)

A Unified Effort to Promote Physical Activity Inclusion: The Inclusive Fitness Coalition

In 2007, the National Center on Health, Physical Activity, and Disability (NCHPAD) and the Rehabilitation Engineering Research Center on Interactive Exercise and Recreation Technologies and Exercise Physiology for People with Disabilities, which has been funded by the National Institute on Disability and Rehabilitation Research (NIDRR) since 2002, formed a partnership with the American College of Sports Medicine (ACSM) to begin a national initiative to promote physical activity inclusion under the Inclusive Fitness Coalition (IFC). The IFC was established to address policy, environmental, and societal issues associated with the lack of inclusion and access to physical activity among people with disabilities. The mission of the IFC (Figure 5) is “to facilitate an expanded coordination of organizations and individuals to address the complexity of personal, social, cultural, political, and economic factors that influence—positively and negatively—the participation of people with disabilities in physical activity, fitness, sports, and recreation.” The IFC is charged with promoting equitable access to, and safe use of, fitness and recreational equipment, facilities, and programs, to help reduce debilitating secondary conditions associated with disability and a sedentary lifestyle. The Coalition currently has over 200 member organizations representing national and international disability, advocacy, fitness, sports, health, and rehabilitation interests committed to the common vision of universally inclusive fitness and recreation opportunities for people with disabilities. Table 3 provides the IFC’s Bill of Rights, which explicitly states the expectations for promoting community inclusion in all areas of physical activity for people with disabilities. It can serve as a road map for local service providers interested in promoting physical activity among community members with disabilities.

Figure 4.

Furniture such as low-height desks, tables, and shelving increases access and participation opportunities for people in wheelchairs.

(Lakeshore Foundation, Birmingham, Alabama)



Table 3. Physical Activity Bill of Rights for People with Disabilities

When public health strategies are made inclusive, they can have a profound influence on improving health behaviors. Through organized efforts on a population level and the sustainability of these health behaviors, we as a society can make informed choices to create healthy opportunities for *everyone*.

1. All people with disabilities have the right to barrier-free access to physical activity programs, fitness facilities, and services offered within their communities.
2. All people with disabilities have the right to navigate barrier-free within fitness facilities, utilize inclusive equipment, and participate fully in group fitness settings.
3. All people with disabilities have the right to access opportunities within their communities that promote both indoor and outdoor active leisure and recreational activities.
4. All people with disabilities have the right to accessible green space within their communities including parks and playgrounds.
5. All children with disabilities have the right to full involvement in all daily physical education activities and after school sports participation.
6. All people with disabilities have the right to improved infrastructure that supports active commuting opportunities.
7. All people with disabilities have the right to accessible signage in order to navigate and interact effectively within their communities.
8. All people with disabilities have the right to increased access to public transportation as well as expanded coverage area.
9. All people with disabilities have the right to access and purchase healthy and low-cost food and beverages in public service venues including schools and worksites.
10. All people with disabilities have the right to education and access to healthy and low-cost food options within their communities through promotion and expansion of local farmers markets and increased density of full-service grocery stores and supermarkets in underserved areas.



Guidelines for Disability Inclusion in Physical Activity, Nutrition, and Obesity Programs and Policies

People with disabilities face significant barriers when attempting to access health and wellness activities. As part of the National Center on Health, Physical Activity, and Disability, the Center on Disability at the Public Health Institute (COD-PHI) has developed *Guidelines for Disability Inclusion in Physical Activity, Nutrition, and Obesity Program Initiatives* to assist communities in

Framework for Action
Vision: Create a unified effort to increase access to and participation in physical activity for youth, adults and seniors with physical, cognitive and sensory disabilities.

- Ask 1 Policy:** No child, youth or young adult with a disability left on the sidelines.
- Ask 2 Health and Fitness:** No person with a disability left out of health and fitness clubs due to lack of access.
- Ask 3 Inclusive Play:** No child with a disability being left indoors due to lack of inclusive play environments.
- Ask 4 Veterans:** No veteran with a disability left to re-engage in society without being served through inclusive sport and recreation.

Figure 5. The Inclusive Fitness Coalition’s Framework for Action

Developed by the Inclusive Fitness Coalition (IFC) www.incfit.org

Table 4. Guidelines for Disability Inclusion in Physical Activity, Nutrition, and Obesity Programs and Policies

- 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, as well as mobility, visual, hearing, and mental health disabilities).
- 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).
- Program Accessibility:** Programs should be accessible to people with disabilities and other users, socially, behaviorally, programmatically, in communication, and in the physical environment.
- Accommodations for Participants with Disabilities:** Programs should address individual needs of participants with disabilities through accommodations that are specifically tailored to those needs.
- 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.
- Cost Considerations and Feasibility:** Programs should address potential resource implications of inclusion (including staffing, training, equipment, and other resources needed to promote inclusion).
- Affordability:** Programs should be affordable to people with disabilities and their families, personal assistants, and caregivers.
- 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.
- Outcomes Evaluation:** Programs should collect outcomes data, using multiple disability-appropriate measures.

promoting higher rates of inclusion among their members with disabilities. The guidelines were created from a previous set of guideline recommendations³⁶ with structured input, review, and modification from a panel of national experts. The guidelines can be used by government and private entities and organizations that create, implement, or oversee program initiatives and policies in the areas of physical activity, nutrition, and obesity. The guidelines are intended to be broad enough to cover a variety of local, state, and national programs. They will be used to assure inclusion of disability as government agencies and community organizations develop plans to implement

community health promotion strategies that are based on national recommendations. The *Guidelines for Disability Inclusion* can also be used to evaluate whether plans and programs effectively include people with disabilities (see Table 4).



Conclusion

Accumulating evidence suggests that insufficient efforts are being made to effectively promote physical activity for people with disabilities, and this could be leading to higher rates of chronic and secondary health conditions in this large subgroup of the population.^{12,37–40} Poor health is also known to predict higher rates of unemployment and reduced social participation, both of which are common problems among people with disabilities.⁴¹ Public health and fitness professionals who work in local and state health departments, schools, fitness and recreation centers, and healthcare facilities are in a unique position to address the low rates of physical activity participation among people with disabilities by utilizing the aforementioned resources to develop effective strategies that help eliminate barriers to participation and promote inclusive opportunities in every community across the nation.



Scientific Summary

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Physical inactivity has recently been described as pandemic—a serious health problem that crosses borders and affects many people. Addressing this pandemic requires public health action, and public health action requires an understanding of health disparities in order to reach all populations at risk. The article by Dr. James Rimmer in this issue of *Elevate Health* reminds us of the health and physical activity disparities faced by Americans who are living with a communicative, mental, or physical disability. Because physical activity may not only improve the quality of life of people living with disabilities, it can also positively affect other chronic conditions associated with being sedentary. In his article, Dr. Rimmer argues quite effectively that socioeconomic disadvantages as well as structural, programmatic, and attitudinal barriers to physical activity are widely recognized as the major contributors to health disparities among people with disabilities.

Lack of access to appropriate places to be active remains one of the greatest challenges in the public health promotion of physical activity. Because of the unique situations that people with disabilities are in, and the wide-ranging health benefits of participation, we must continually focus inclusive and equitable efforts on creating and maintaining places and programs for physical activity for all.

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