

# SPECIAL OLYMPICS HEALTHY ATHLETES



***Special Olympics***



## HEALTH PROMOTION PILOT PROGRAMS EVALUATION: IMPROVING ATHLETES' HEALTH

Report prepared by the Rehabilitation Research and  
Training Center on Aging with  
Developmental Disabilities (RRTCADD)  
Department of Disability and Human Development  
University of Illinois at Chicago

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***Special Olympics***



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# SPECIAL OLYMPICS HEALTHY ATHLETES

## HEALTH PROMOTION PILOT PROGRAMS EVALUATION: IMPROVING ATHLETES' HEALTH

### EXECUTIVE SUMMARY

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Studies have increasingly documented low levels of physical activity and an increase in obesity among adults with intellectual disabilities in the United States and many other countries. Health screenings conducted during the 1999 and 2001 World Special Olympics Games showed that many of the athletes were overweight or obese. Moreover, surveys of Special Olympics coaches from all over the world provide a consensus that athletes are in need of fitness training above and beyond what they receive from their sports practices. In 2002, Special Olympics started locally-based health promotion pilot programs for athletes that lasted for multiple weeks. The activities in these pilot programs extended beyond the regular Special Olympics sports and training activities.

Six pilot programs in the U.S. and one in Latin America were initiated to test different strategies aimed at improving physical fitness and lifestyle choices/habits and to determine if there could be effective predictors of program success. The research team at UIC provided training for each program director for the six pilot sites on the assessment tools that were being used for the evaluation. The purpose of this report is to present both quantitative findings from four of the six sites and qualitative findings from all six sites (two sites did not provide any quantitative data). Results from the evaluation focused on the following areas: 1) health status and health behaviors among SOI athletes; 2) program satisfaction among coaches and SOI athletes; and, 3) process and structural variables associated with implementation of health promotion programs within SOI.

The mean age of SO athletes participating in four of the six pilot sites (N = 56) was 32 years of age (S.D. 11.3). Fifty-four percent of athletes were women (mean age = 33) and 46% were men (mean age = 31). Eleven percent of participants were African American; 84% were Caucasian; 4% were Hispanic; and 2% Other (Haitian). Overall, although the projects had many different approaches, many positive psychosocial and health benefits emerged across the sites. The evaluation showed successes across different domains immediately after the health promotion programs including the following:

- improved perceived health,
- reduced body weight,
- increased fiber intake,
- improved self-confidence,
- more positive attitudes toward exercise, and
- decreased barriers to exercising.



**Special Olympics**

**Healthy Athletes™**

Athletes also reported having more friends after the health promotion program; and informants rated athletes' health status higher than at baseline. Additionally, findings at one site that incorporated an 8-week structured circuit training program for athletes showed significant changes in aerobic fitness and upper and lower body muscle strength and endurance. Athletes participating in the health promotion programs reported that they liked having the opportunity to “hang out with friends,” “use the machines,” and “learn about health and food choices” during the health promotion program.

In terms of implementing health promotion programs, several themes emerged with the program evaluation. Themes stressed the importance of obtaining buy-in from athletes, coaches, family members, and caregivers before starting the program to insure ongoing support; implementing structured recruitment strategies; formalizing existing relationships; and, identifying and incorporating time, money, and transportation constraints, and assessment protocols into the program design. Several additional themes also emerged related to being able to improve or expand existing programs. One issue was developing structured fitness training programs as many “fitness activities that were previously in place were more recreational in nature.” Another issue was using existing resources more effectively. Site directors also reported that expanding the health promotion program from an 8-week program to a 12-week program and developing motivational strategies would be beneficial in encouraging athletes to become more accountable for their health behaviors. Results support the need to broaden the health promotion programs to include more sites across the U.S. Recommendations for future initiatives in the **Healthy Athletes Health Promotion Program** include the following activities:

- **Incorporating a *control group***, such as a lag group, in future research may increase the validity of findings.
- **Including explicit participatory procedures** in future health promotion programs may enhance communication across all levels. Specifically, establishing clear expectations of required deadlines will ensure accountability in achieving proposed project goals.
- **Broadening the health promotion programs** to include more sites would increase the generalizability of findings. As was suggested by some of the pilot sites, developing mechanisms to enhance effective sharing of resources and to involve more coaches in the program may be useful.
- **Choosing partners that athletes** know and are committed to train consistently for the duration of the program is very important for success.
- **Introducing the program to athletes** before they start is a useful strategy to give the program a better and faster start.
- **Having a strong working relationship** with community partners is paramount to achieving a wide spectrum of successful health promotion strategies that will ensure active, ongoing participation from athletes, coaches, and carers; and long-term positive health benefits for athletes.

# SPECIAL OLYMPICS HEALTHY ATHLETES

## HEALTH PROMOTION PILOT PROGRAMS EVALUATION: IMPROVING ATHLETES' HEALTH

### HEALTH PROMOTION FOR PERSONS WITH INTELLECTUAL DISABILITIES

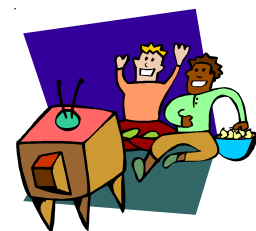
Individuals with intellectual disabilities (ID) residing in community settings have elevated risk factors for cardiovascular disease (CVD) and are at a high risk of dying from CVD. Specifically, the prevalence of elevated CVD risk factors and obesity, and the overall mortality in adults with ID is greater than the prevalence in the general population.<sup>4</sup> Adults with *mild to moderate* intellectual disabilities residing *in community settings* have the highest risk for CVD of all adults with developmental disabilities.<sup>9, 18, 19</sup> CVD is one of the most common causes of death among adults with ID;<sup>13</sup> and the onset of CVD is strongly associated with health-related behaviors – specifically lack of physical activity and poor nutrition.

While deinstitutionalization of adults with ID has allowed greater freedom of personal choice, evidence suggests that they have adopted unhealthy dietary habits and sedentary lifestyle. Specifically, 93% of adults with ID consume a high fat diet, 63% of adults with ID do not consume enough fruits and vegetables.<sup>14, 7, 8, 18, 19</sup> These findings suggest a need to develop, implement, and evaluate targeted health promotion programs for adults with ID.



### SPECIAL OLYMPICS AND SPORTS FOR PERSONS WITH ID

Special Olympics has provided sports training and competition for persons with intellectual disabilities for 37 years. While its original orientation was towards training and physical conditioning that paralleled the standards and goals used by the President's Council on Physical Fitness, over time, fitness and conditioning were incorporated into individual and team sports and became less prominent as objectives unto themselves. Several developments however have led to a **renewed focus on physical fitness and promoting better health.**



Increasingly, studies have documented a decline in physical activity and an increase in obesity in America and many other countries. Health screenings conducted during the 1999 and 2001 World Special Olympics Games showed that many of the athletes were overweight or obese. Surveys of Special Olympics coaches from all over the world provide a consensus that **athletes are in need of fitness training above and beyond what they receive from their sports practices.** Meanwhile, health screenings performed at Special Olympics Games uniformly showed that many athletes (25-35%) have undetected dental, vision, and hearing health needs. These are indicative of limited access to health care and/or flawed communications between patients and providers, even when health care is available.

## SPECIAL OLYMPICS HEALTHY ATHLETES

In response to these unappreciated health needs, Special Olympics developed *Healthy Athletes* venues in 1996 for athletes to receive free screening tests, referrals, and health lifestyle counseling during sports competitions. The mission of Special Olympics Healthy Athletes is to “improve athletes’ ability to train and compete in Special Olympics. Healthy Athletes is designed to help Special Olympics athletes improve their health and fitness, leading to enhanced sports experience and improved well-being.”

During the 2005 Special Olympics World Winter Games in Nagano, Japan, Special Olympics Healthy Athletes offered health screenings to all of the more than 1,800 athletes, of which, 1,208 athletes participated. More than 4,200 health screenings were provided at no cost to the athletes in six of the Healthy Athletes disciplines: Special Smiles (dental); Opening Eyes® (vision); Healthy Hearing (audiology); Health Promotion (sun safety, nutrition, bone density); FUNfitness (physical therapy); and Fit Feet (podiatry).

According to Dr. Mark Wagner, Director, Special Olympics Health and Research Initiatives, the “*findings*

*showed appalling levels of unmet health-care needs for people with intellectual disabilities.”*

*Specifically, “screenings showed that more than two out of five athletes failed their vision test, and 13% had an eye disease. A quarter of the athletes screened were obese or overweight, and a sixth were referred to a physical therapist for intensive therapy. A tenth of the athletes screened needed further screening for osteoporosis. A staggering 47% of athletes had*

*obvious tooth decay, and a tenth needed urgent dental treatment.”*

During a Healthy Athletes event, each Special Olympics athlete can receive a variety of health screenings and services in a welcoming, fun environment. Health care professionals and students are trained to provide the

screenings in an effort to educate the professional community about the health needs and abilities of persons with intellectual and developmental disabilities. Recently, **Healthy Athletes has endeavored to heighten awareness and interest in fitness and better nutrition** by adding Health Promotion as one of its components.

## SPECIAL OLYMPICS AND COMMUNITY-BASED HEALTH PROMOTION DEMONSTRATION PROGRAMS

Recognizing that obesity, diabetes, and low bone mineralization occur more often among persons with intellectual disabilities, Healthy Athletes has endeavored to heighten awareness and interest in fitness and better nutrition by adding Health Promotion as one of its components. But in order for habits to meaningfully change, efforts to increase exercise and improve lifestyle choices have to be ongoing, reinforced, and encouraged. Ideally such efforts would involve families, caregivers, and coaches.

In 2002, Special Olympics started locally-based health promotion pilot programs for athletes that lasted for multiple weeks. The activities in these pilot programs extended beyond the regular Special Olympics sports and training activities. With federal funding (CDC grant #U59/CCU321826-04), six pilot programs in the U.S. and one in Latin America were initiated to test different strategies to improve physical fitness and lifestyle choices/habits. The goal of the health promotion demonstration projects include the identification and development of programs which are community-based and focused on health and fitness beyond the training and competition settings. Specific objectives for the pilot programs consisted of the following:

- improve long-term health outcomes for Special Olympics athletes by giving them the information, encouragement, and facilities they need to sustain physical fitness and healthy lifestyle choices.
- improve the quality of life and self-image of athletes.
- provide the athletes the means by which they can work to better their own health and well-being.



- allow more people with intellectual disabilities to participate in Special Olympics and to retain those athletes who are currently active.

Each pilot program was conceptualized and developed by a Special Olympics Program at the state and local level.

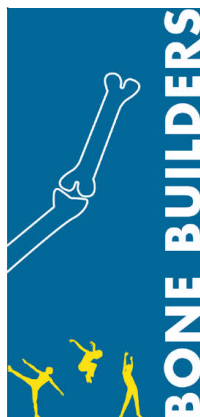
The underlying purpose consisted of the following activities:

- partnering opportunities between Special Olympics and governmental, private, for-profit, and not-for-profit organizations;
- an emphasis on a wellness program, e.g. food choices, exercise, sleep adequacy, hygiene;
- varying intensities of participation (e.g. how often the interventions take place, the ratio of instructors/motivators to athletes);
- end points to consider as measures of progress.

An external program evaluation was conducted by a research team in the Rehabilitation Research and Training Center on Aging with Developmental Disabilities at University of Illinois at Chicago (UIC) for the Health Promotion Pilot Programs at the six sites across the United States. The primary goal of the program evaluation was to discern models for replication and identify elements that demonstrate success for replication. The experience gained from these pilots will be used to guide the development of future community-based health promotion programs across the United States and around the world.

## EVALUATION OF 6 PILOT PROJECTS

Six Special Olympics (SO) programs located in Colorado, Illinois, Massachusetts, Montana, South Carolina, and Texas received \$15,000 each to implement unique pilot health promotion programs over a 12-month time period. The health promotion programs incorporated community partnerships (e.g., community recreational facilities, university centers, private rehabilitation clinics); and, each program had specific activities aimed at improving health outcomes for SO



athletes by increasing physical activity and improving healthy food choices. All of the programs had the prerogative to develop their own health promoting content (e.g., hygiene, sleep, sport safety). The projects at each pilot site ranged from six to twelve weeks cycles and included the following types of activities: group classes, personal training, and home visits.

Refer to **Table 1** for a description of the projects, along with the aims.

At the outset, the research team at UIC provided a one-day training for each of the six U.S. program directors on the assessment tools. Program staff at each site collected data. Athletes and their informants completed questionnaires on psychosocial data at baseline and after the health promotion program. Staff conducted physical health assessments with athletes before and after the program. Coaches completed questionnaire on athlete involvement in Special Olympics before the program; and athletes responded to a satisfaction interview after the program. Interviews with program directors at the completion of the health promotion program provided information on process and structural variables.

The purpose of this report is to present both quantitative findings from four of the six sites and qualitative findings from all six sites (two sites did not provide any quantitative data which reduced the sample size). The evaluation process focused on the following areas and findings:

- 1) **health status and health behaviors** among SO athletes;
- 2) **program satisfaction** among coaches and SO athletes; and,
- 3) **process and structural variables** associated with implementation of health promotion programs within SOI.

## Table 1. Project Descriptions and Aims

Project Description	Project Aims
<p><b>Special Olympics South Carolina</b> implemented the <i>Steps to Your Health (STYH)</i> health promotion program. This program included one hour classes for eight weeks with two optional home visits.</p>	<p>Increase fruit intake, vegetable intake, and increase physical activity to decrease body mass index (BMI).</p>
<p><b>Special Olympics Massachusetts</b> formed a partnership with the YMCA in Cape Cod, Massachusetts to develop and implement <i>Fitness for All: A Unified Approach to Physical Fitness</i>. The program consisted of health and fitness training three days a week and sports training one day a week.</p>	<p>Establish a 20 hour position at the YMCA Cape Cod as the SO Coordinator to recruit participants and organize and monitor fitness training and nutrition education program and sports training.</p>
<p><b>Special Olympics Colorado</b> implemented a <i>HealthOne Triple Challenge</i> program to provide training and education to SO athletes at a Rehabilitation Clinics on the use of weight training and cardiovascular machines. Athletes received training at the clinic three days a week for six weeks; and, had their food diaries reviewed by a nutritionist. At the end of the six weeks, athletes completing the program were offered health club memberships.</p>	<p>Design a three phase program to improve health and well-being of SO athletes and their partners.</p>
<p><b>Special Olympics Illinois</b> implemented an eight week training program, <i>Engagement Through Fitness</i>, through a partnership with the Rehabilitation Research and Training Center on Aging and Developmental Disabilities. This program was located in a city park district program and created an <i>Engagement through Fitness Easy for Me Training Manual</i><sup>15</sup> to support SO coaches to organize, tailor, and implement a health promotion program in various SO sites.</p>	<p>Train trainers to disseminate a packaged fitness and health education curriculum throughout the state of Illinois.</p>
<p><b>Special Olympics Texas</b> implemented the <i>SOTX Healthy Living</i> program which provided a health fair booth at summer games and disseminated a curriculum kit of educational and instructional materials (brochures, workbooks, educational video, hands-on activities, etc.). This pilot program also provided in-depth training to one coach and one ALP facilitator in four regions to facilitate the year-round Healthy Living program</p>	<p>Educate athletes in areas related to nutrition, exercise, and sleep.</p>
<p><b>Special Olympics Montana</b> implemented a <i>Year-round Fitness Demonstration Program and Community Nutrition Intervention</i> with the Rural Health Institute in Montana to disseminated educational materials to work with family and/or coaches to develop their model of year round fitness program including three training sessions/week. This program also proposed a three month program to provide the following: nutrition education, altering prices of beverages, and incentives posted at vending machines for choosing healthful beverages.</p>	<p>Evaluate several different models of implementing a year round fitness program in urban and rural communities and providing support through educational materials, program ideas, fitness testing/evaluation, and expert consultation.</p> <p>Alter beverage selection behavior at vending machines community day programs.</p>



## PARTICIPANTS

### Who were the participants?

SO athletes participating in the health promotion pilot programs were recruited by program directors at each site using a convenience sampling method. The mean age of SO athletes participating in four of the six pilot sites (N = 56) was 32 years of age (S.D. 11.3). Fifty-four percent of athletes were women (mean age = 33) and 46% were men (mean age = 31). Eleven percent of participants were African American; 84% were Caucasian; 4% were Hispanic; and 2% Other (Haitian).



### Where are athletes living?

Athletes live in a variety of settings including the following (n = 56):

Families .....	<b>64%</b>
Small Supervised Residences (3-15 beds) .....	<b>20%</b>
Large Supervised Residences (> 15 beds) .....	<b>9%</b>
Own Residence .....	<b>4%</b>
Other (with husband or with friend) .....	<b>4%</b>

## HEALTH STATUS AND HEALTH BEHAVIORS

This report presents outcomes from the health promotion pilot projects. In particular, the following measures are delineated:

- a) psychosocial and physiological health status** (perceived health status, self-esteem, body weight, abdominal fat, flexibility aerobic fitness, and muscular strength and endurance);
- b) physical activity and nutrition knowledge and supports** (exercise self-efficacy, exercise perceptions, barriers to exercise, and exercise and nutrition knowledge); and,
- c) adherence to physical activity and eating nutritious foods** (frequency and duration of

physical activity and dietary intake of nutritious foods). Implications for future health promotion activities for persons with ID will be discussed.

## PSYCHOSOCIAL AND PHYSIOLOGICAL HEALTH

### How do athletes view their health and themselves?

Individual's involvement in assessing their own state of health is a major element in evaluating the impact of health care services. Health status was assessed by asking athletes to report their overall perception of health. In this study, 28% (n = 55) of athletes reported that their health was excellent or very good; 61% stated that their health was good; 9% noted that their health was fair; and 2% stated that their health was poor. No significant difference was noted in athletes' self-rated perception of their health after the health promotion program.

For informants, 39% (n = 54; includes coaches and parents) reported that athletes health was either excellent or very good; 50% stated that their health was good; and 11% noted that their health was fair. Following the health promotion programs, informants rated athletes' health status higher than reports at baseline (p<.01).

A self-esteem scale was developed for the assessment. While analysis of the scale did not demonstrate an acceptable level of reliability, baseline analysis of the individual items found that 86% of athletes reported that they felt they looked "okay" and 88% of athletes were "sure that somebody loves me."

### On friends, loneliness, and sadness...

Before the health promotion program, 49 % of athletes stated that they had "plenty of friends" and 51% of athletes reported that they "have some friends but I wish I had more." Following the health promotion program 72% of athletes stated that they "had plenty of friends" (p < .01). Before the program, 21% of athletes either felt alone "many times" or "felt alone all of the time;" and 17 % of athletes felt that they were either "sad many times" (15%) or "sad all of the time" (2%). No statistical difference was found over time.



## How fit are athletes?

**Body weight.** The overall average body weight decreased from 178.2 pounds to 176.3 ( $p < .01$ )

The Body Mass Index (BMI)<sup>20</sup>, which is a measure of body fat based on the height and weight ratio for adult men and women, was calculated for the entire sample at baseline. The results are as shown in **Table 2**.

**Table 2. BMI Ratios**

	Participants' BMI Ratios %		
	Females (n=24)	Males (n=19)	Total (n=43)
<b>BMI Guidelines</b>			
< 18.5 underweight	–	–	–
18.5-24.9 normal	11.6	2.3	14.0
25.0-29.9 overweight	9.3	20.9	30.2
30-39.9 obese	27.9	18.6	46.5
40+ extremely obese	7.0	2.3	9.3

(National Heart, Lung, Blood Institute, 1998)

Compared to a sample of SO athletes at the 2005 Special Olympics World Winter Games in Nagano, in which a quarter of the athletes screened were obese or overweight, **86% of the athletes participating in the pilot health promotion programs were overweight or obese.** Additionally, an analysis of the National Health Interview Survey (NHIS) from 1985 to 2000 data by Yamaki<sup>21</sup> found that 44.2% of women with intellectual disability (ID) and 20.8% of women without ID were obese (compared to 34.9% of women participating in the SO pilot programs). Yamaki also reported that 26.5% of men with intellectual disability (ID) and 20.4% of men without ID were obese (compared to 20.9% of men participating in the SO pilot programs).

**Abdominal Fat.** Waist and hip circumference measurements were taken as a measure of abdominal fat. Waist-to-Hip Ratio (WHR) provides an index of abdominal fat distribution and is a guide in assessing health risk particularly CVD. The risk of disease rises when the WHR rises above 0.9 in males and above 0.85 in females. For SO athletes in the pilot programs, the average Waist/Hip ratio at baseline for women was .85 and .96 for men.

The waist and hip circumference measurement (inches) decreased slightly from baseline assessment to posttest measures (see **Table 3**). This difference was not statistically significant.

**Table 3. Waist to Hip Means and Standard Deviation**

	Mean (S.D.)
<b>Pretest</b>	
<b>Waist</b> (inches)	39.5 (5.1)
<b>Hip</b> (inches)	44.1 (4.1)
<b>Posttest</b>	
<b>Waist</b> (inches)	39.1 (5.8)
<b>Hip</b> (inches)	43.7 (4.4)

**Flexibility.** Two flexibility measurements were used in this project. The *Behind the Back*<sup>6</sup> (Apley Test) measures shoulder flexibility. This test determines the range of motion or asymmetry of movements when comparing the two shoulders.

The *Sit and Reach*<sup>10</sup> was used to measure lower back and hamstring flexibility. Increased flexibility reduces muscle tension, prevents muscle and joint injuries, increases range of motion, and improves circulation, and balance.

Improvements were seen in upper body flexibility across the four sites, but not lower body flexibility. This difference was not statistically significant.

## Aerobic Fitness and Muscular Strength and Endurance.

The *6-Minute Walk Test*<sup>14</sup> was used to assess aerobic fitness. Being aerobically fit improves cardiovascular function, increases



overall energy level, and decreases fatigue, irritability and depression.

Two muscle strength and endurance measurements were used: 1) *One-Minute Timed Modified Push-up*<sup>3</sup> and 2) *One-Minute Timed Sit-to-Stand*.<sup>5</sup> The *One-Minute Timed Modified Push-up* measures the endurance of arms and shoulder girdle; and the *One-Minute Timed Sit-to-Stand* muscular endurance test measures muscle strength and endurance of large leg muscles. The benefits of strength and endurance training include an increase in muscle, tendon, bone, and ligament strength, decrease in bone loss, increased self-esteem, confidence, and self worth, increased physical functioning, and decreased risk of injury.

Improvements were seen in upper and lower body muscle strength and endurance and aerobic fitness. The differences between baseline and posttesting were not statistically significant across the sites. However, at one site that incorporated an 8-week structured circuit training program for athletes, findings were significant for upper body muscle strength and endurance ( $p < .001$ ), lower body muscle strength and endurance ( $p < .05$ ) and aerobic fitness ( $p < .001$ ). See **Table 4** for the overall results.

**Table 4. Mean Scores for Measures of Aerobic Fitness and Upper/Lower Body Strength**

	Pretest	Posttest
<b>One-Minute Timed Push-up</b>	13.5	16.1
<b>One-Minute Sit-to-Stand</b>	21.4	22.9
<b>6-Minute Walk (yards)</b>	610.7	675.8

### How confident are athletes in being physically active?

*Exercise Self-Efficacy Scale*<sup>10</sup> assesses a person's degree of certainty (or confidence) to engage in physical activity. Following the health promotion programs at four of the sites ( $n = 43$ ), self efficacy to engage in physical activity was increased. See **Table 5** for results (a higher mean for self-efficacy indicates greater self-confidence to engage in exercise activity).

### How do athletes view physical activity and their supports for being physically active?

The *Exercise Perceptions Scale*<sup>10</sup> assesses perceptions and attitudes toward physical activity. Results from this scale showed improved perceptions toward physical activity. The *Barriers to Exercise Scale*<sup>10</sup> assesses reasons that it might be difficult for a person to engage in physical activity. Results demonstrated reduced barriers and enhanced supports for physical activity. See **Table 5** for results.

**Table 5. Mean Scores for Self-Efficacy, Exercise Perceptions and Supports**

	Pretest	Posttest
<b>Self-Efficacy</b>	12.2	14.1*
<b>Exercise Perceptions</b>	24.3	25.3**
<b>Exercise Supports/ Barriers</b>	27.3	25.3*

\*  $p < .05$   
\*\*  $p < .01$

A higher mean score for the *Physical Activity Perceptions Scale* reflects a more positive attitude toward physical activity and exercise; whereas a lower mean score for the *Barriers to Exercise Scale* indicates fewer barriers and more supports for exercising and engaging in physical activity.

### What do athletes know about physical activity and nutrition knowledge?

Health Knowledge Scale showed improved physical activity and nutrition knowledge. While the differences were not statistically significant, the trend in the mean showed an increase in knowledge related to both exercise/physical activity and nutrition. See **Table 6** for results.

**Table 6. Mean Scores for Exercise/Physical Activity and Nutrition Knowledge**

	Pretest	Posttest
Exercise Knowledge	10.2	10.7
Nutrition Knowledge	5.7	6.1

## What are athletes eating?

Participants average intake of fiber increased from 15.8 grams to 17 grams ( $p < .05$ ). The average intake of fats was not statistically different at posttesting. Whole milk remained as the number one source of fat, along with margarine and corn chips/potato chips/popcorn/crackers.

## INVOLVEMENT AND SATISFACTION WITH SPECIAL OLYMPICS

### How long have athletes been involved with SO?

All of the participants were registered Special Olympics athletes. Prior to starting the health promotion pilot programs, athletes were involved with Special Olympics for an average of 14.4 years ( $n = 35$ ; S.D. = 8.8; range of 2-35 years). See **Table 7** for an overview of participants involvement as an athlete with Special Olympics.

**Table 7. Percentage of Athletes' Total Number Years Registered as Special Olympics Athlete**

	% of Athletes
1-4 years	14.3
5-9 years	23.3
10+ years	60.5

### How many trainings and competitions did SO athletes do before the health promotion programs?

Overall, athletes participating in the health promotion pilot programs attended an average of 13 Special Olympics

training sessions ( $n = 31$ ; S.D. = 28.0; range of 1-144) and an average of 6 Special Olympics competition events ( $n = 34$ ; S.D. = 11.7; range of 0-70) prior to the health promotion program. See **Table 8** for an overview of participants' involvement with Special Olympics training and competition events.

**Table 8. Percentage of Athletes' Total Number of SO Training Sessions and Competition Events**

	% of Athletes	
	Training Sessions	Competition Events
1-4 sessions	67.7	70.6
5-9 sessions	9.7	23.5
10+ sessions	22.6	5.9

### What improvements were reported by informants in regards to SO athletes' involvement with health promotion programs?

- **Improved psychosocial health**  
*More confident, better attitudes (more willing to give it all), increased ability to do exercises, improved behavior, less stressed*
- **Improved physical health**  
*More endurance, lost weight*
- **Improved overall health**  
*Increased energy, less stressed, more enthusiasm*
- **Improved skills**  
*Improved running/jogging, weight lifting, swimming, increased accuracy, better time*

### How satisfied were SO athletes with the health promotion pilot programs?

Overall, across the pilot sites, 55% of athletes reported that they were "very happy" with the SO health promotion pilot program, 38% stated that they were "happy" with the program, and 7% said that they were "unhappy" with the program. Eighty-one percent stated that they thought the



material covered in the SO program was “very helpful” and 19% reported that the information was “a little helpful.” When asked about their interest in continuing with the health promotion program, 98% of participants stated that they wanted to continue with the health promotion program and 2% were not sure about ongoing participation. In regards to the SO coaches, 86% of the participants reported that the SO coach was “very helpful” and 14% stated that the coach was “a little helpful.”

## What did athletes like the most about the health promotion program?

- **Having more social activities**  
*being able to interact with people with disabilities, hang out with friends; talking to friends about steps to health, exercise and food; liked the company; coming and being with peers*
- **Being involved in physical activities**  
*using the machines; the bike (bought one at home); doing sit-ups and walking; playing basketball with group; going on trip; getting fit; doing leg lifts; exercising; losing weight and toning muscles; walking more; stress class; playing softball; trips to town; having a notebook*
- **Improving mood**  
*making me happy to work out; program was fun*
- **Improving knowledge**  
*learning about health and food choice; drinking more water; learning how to eat better, to lose weight; coach’s instruction and support help get in shape and stay same weight; liked the teacher; learning new exercise; learning about food; learning new things*

## What did athletes like the least about the health promotion program?

- **Not enough activities**  
*more volleyball, more soccer, baseball; having to walk all the time; difficult to learn some concepts*
- **Not enough time**  
*only 8 weeks, we could have done it longer*
- **Specific activities**  
*sit-ups; sit and reach; push-ups; weights-hard to use; treadmill; having to weigh every week; not*

“The Healthy Athletes Pilot Project helped us realize that the fitness activities we had in place were more recreational in nature, and just a few adjustments could make the programs more effective for special needs populations, especially teens and adults.”

*being able to eat cookies everyday; talking about exercise; talking about not smoking*

- **Lack of specific activities**  
*Would like to have Yoga classes, stretching classes*

## LESSONS LEARNED: PROCESS AND STRUCTURAL ISSUES

Program directors were interviewed by the research team at UIC after the health promotion program was completed at each site. Questions asked about program goals and issues included the following:

- **Was program effective in meeting its stated purpose, goals, and objectives?**
- **What positive and negative changes/difference were made?**
- **What would they have done differently or what would they have added and deleted to the program?**
- **What did athletes and/or coaches think were program’s strengths?**
- **What were the outcomes of the program – intended and unintended?**
- **What were the outcomes for athletes?**
- **What were the lessons learned?**

**Starting the health promotion program.** Common themes emerged in regards to program effectiveness. One key comment was the necessity of having people’s **buy-in** (including athletes, coaches, family members, and caregivers) to the program prior to starting the health promotion program. Without buy-in, a lack of support was experienced at the outset. For example, logistical

**“Our involvement with this project has allowed us to restructure our current programs to be more responsive to the needs of the participants.”**

issues made it difficult to figure out how to get the program started (e.g., many families were not familiar with the YMCA). Small group discussions were needed to make a personal connection. One site reported that *“verbal reminders and descriptives about the program a month before the program started”* was useful to introduce the program to athletes and carers in order to achieve buy-in.

Developing effective **recruitment strategies** was another crucial issue. One site director reported that 3 ALPs (athlete leadership program club) and 8 coaches responded with an interest in the program after contacting 3000 ALPs facilitators and coaches within the state.

Having **existing relationships** with athletes before starting the program was a critical step in the process of starting a health promotion program. One site reported that they would probably not pair up the athletes with someone they do not know in the future as they noticed that it was more effective to have the athlete’s parent or caregiver paired up with them to effect lifestyle change.

A site director reported that **time constraints** limited their connection with coaches (although the coaches were very supportive). At this site, while this might have become a complicating factor, it actually *“proved to be beneficial”* as it allowed parents and staff from group homes to increase their involvement with the program; and athletes were able to *“look at others as their coaches and get positive reinforcement about their health from different sources not just SO specific sports.”* Another site director reported that they started out with high expectations but interest level within the state was not high and coaches were too busy for the actual health promotion program. In hindsight, one site stated that it was important to

*“keep the program more simple and start small.”* Getting people involved and interested at the local level would be helpful to *“keep the quality of the program high.”* Similarly, while some pilot programs were not able to operationalize all of the components of their original design, sites found the process of building rapport with community partners extremely beneficial in driving positive outcomes.

The greatest challenge for several sites related to the **cost** of the program. In particular, a site director noted that as people age out of services for children, parents expect adult services to kick in without any cost to the



family. When the program ended, cost became an issue in trying to obtain a reduced membership through the local YMCA. *“Though all were encouraged to take out a reduced rate membership, no one seemed interested or comfortable in coming to work out alone; nor were they interested in working out with a parent or staff person.”* One site director reported that participants all expressed a strong interest in being able to continue coming to the program so that they could work out with their *“personal trainer,”* but it was difficult to get *“athletes to understand that there are some costs associated with doing this program.”*

Another issue related to **transportation**. Transportation was especially problematic for people living in group homes. In certain geographic areas, public transportation barely exists, which makes relying on others a necessity. Even if public transportation does exist, it may not be a viable alternative for people with intellectual disabilities. Staff initially thought that it might be more difficult for family-based participants to have continuous, reliable transportation, but learned that obtaining consistent transportation was most difficult for athletes living in group homes. Scheduling issues added an additional complication to the ongoing transportation problems in getting people to the health promotion program.

Staff at each of the sites had varying opinions regarding the national **assessments**. Some sites reported problems in interviewing athletes (i.e. questions may not have been fully understood, some acquiescence) and getting informants to respond to questionnaires (parents were often unavailable to respond to questionnaires that required historical information). In regards to the physical assessments, staff experienced some “*resistance from athletes*” in following instruction when doing assessments (i.e., push-ups were very difficult for many participants to either do or maintain form). Some staff were also challenged in doing the 6-Minute Walk Test, while other site directors thought it was a useful measure as walking is something that people are able to do but often can not do because of their sedentary lifestyles. One site director found it useful to describe assessments to athletes ahead of time and to talk about the program informally before it started. “*Coaches sat down with family members and athletes and introduced the program and fitness testing.*” This seemed to minimize any fears associated with doing something new and mitigate any problems related to the assessments.

**The strength of the health promotion pilot project was that it “hit a niche that was not hit before!”**

Some site directors reported that they were very happy with the assessments and are currently adapting the assessment protocol to use with other groups in their organization. Another site director is incorporating some of the assessment measures as a part of the exercise program.

**Improving/expanding existing programs.** A few site directors noted that the Healthy Athletes Health Promotion Program brought forth concern that more support was needed for **fitness training**. In particular, a site director reported “*fitness activities that were previously in place were more recreational in nature;*” moreover, another director stated that athletes were not used to doing strenuous workouts and they “*needed to*

*convince athletes more to be fit.*” This resulted in some projects focusing more on motivation strategies and restructuring current programs to be more responsive to the



needs of the participants with disabilities. For example, individualized training appointments were arranged for those who need one-to-one instruction and could afford personalized attention. One site director is currently pursuing grant funding or recruiting a community partner to help underwrite the expansion of small group fitness programs for special needs teens/adults.

Another issue was related to using **existing resources**, such as health-related educational materials for persons with intellectual disabilities. One site director reported that they had a “*feeling that the wrong direction was taken with the curriculum*” (they developed their own curriculum) in that they discovered that “*there were community organizations that were doing similar types of curricula.*” In hindsight, this director thought that instead of developing curriculum during the grant process, it may be better to connect with community organizations who are doing similar types of health promotion activities for persons with disabilities and “*adapt those activities and/or materials for your needs, rather than re-creating existing materials.*” One example put forth was to “*develop a referral list for facilitators to access health information from community partners.*” Reportedly, “this would be helpful in teaching athletes health-related issues.”

Similarly, another site supported the notion of “*resource sharing*” by reporting that it was useful to have an existing curriculum to meet it’s stated goals as it was easy to fit the curriculum into athlete’s schedule, which allowed day-to-day activities to be more flexible. One example that was cited related to teaching more complex information to athletes. If a group is trying to fit a program into an existing schedule, this may become an obstacle as some health-related concepts were too complicated to explain in a short session. With some sessions, athletes needed more time to “*soak up the*

*knowledge.*” By using an existing curriculum with a variety of sessions, instructors could be more flexible with the classes and adapt the materials to meet athletes’ individual needs. For example, if athletes found a particular session to be complex, instructors could expand the session over two days.

With the complexity related to teaching athletes health concepts, several site directors reported that the **program duration** was an issue that needs to be addressed in future programs. In hindsight, some directors thought that it might be better to make the program longer. For example, one director thought that a 12-week program would allow coaches to teach the curriculum over a longer period and enhance athletes’ ability to learn concepts related to health and fitness. More time was needed to motivate athletes to be fit.

Athletes were often very familiar with the recreational/social component of the sports activities and coaches sometimes found it difficult to introduce new fitness components that they were not doing on a regular basis. Directors cited a need to develop **motivational strategies** and a need to encourage athletes to become more accountable for their health behaviors. Using motivational strategies over a longer period of time would be beneficial in sustaining positive lifestyle changes. One director also reported that fitness testing was one effective way to increase motivation as it gave athletes a baseline measure that they could use to monitor their progress. However, in using motivational strategies to support changes in health behaviors, more one-to-one interaction was required over a longer time period.

**Perceived Outcomes.** Site directors reported positive outcomes as a result of the health promotion program. In particular, parents and athletes at several sites strongly endorsed the programs. Site directors reported that *“instructors were great at encouraging and making sure that athletes tried everything.”* Athletes liked the consistency that was created by the health promotion program. Athletes also enjoyed trying different cardio machines, some liked weights, some did not. In one site that utilized a YMCA, athletes liked owning a membership card and showing that ownership as a statement of being equal participants at the YMCA. Athletes reported that they did not want the program to



end. Some athletes suggested more stress management activities such as a *“yoga class.”* One site director reported surprise that athletes’ were motivated to do more physical activity and make healthier food choices at the end of the program.

### NEXT STEPS/RECOMMENDATIONS

The sites are all to be commended for their efforts to initiate a structured health promotion program for individuals with intellectual disabilities. Throughout the course of the pilot programs, unanticipated issues arose which made it difficult for program implementation. However, this was not unusual given the scope of the program goals and the involvement of many community stakeholders. The uniqueness of these pilot programs was the focus on community-based interventions that were implemented by Special Olympics volunteers and their community partners. Although the evaluation did not include a controlled clinical trial design, it provides valuable information on the implementation issues and on effectiveness of different models of health promotion for this population.

Overall, while the projects had a variety of different approaches, many positive psychosocial and health benefits occurred across the sites. The evaluation showed successes across different domains including improved perceived health, reduction in body weight, improved self-confidence, enhanced attitudes toward physical activity, increased fiber intake, and decreased barriers. Additionally, findings showed significant changes in upper



body and lower body muscle strength and endurance and aerobic fitness at a site that incorporated an 8-week structured circuit training program for athletes.

Recommendations for future initiatives in the **Healthy Athletes Health Promotion Program** include the following activities.

- **Incorporating a control group**, such as a lag group, and increasing the sample size in future research may increase the validity of the findings.
- **Including explicit participatory procedures** in future health promotion programs may enhance communication across all levels. Specifically, establishing clear expectations of required deadlines will ensure accountability in achieving proposed project goals. Additionally, addressing *staff turnover* through ongoing training for the evaluation process may enhance the quality of data that is collected. Simplifying the *assessment protocol* in regards to nutrition and upper body strength may also improve the quality of the data.
- **Broadening the health promotion programs** to include more sites would increase the generalizability of findings. As was suggested by some of the pilot site directors, developing mechanisms to enhance effective sharing of resources and to involve more coaches in the program may be useful.
- **Choosing partners that athletes** know and are committed to train consistently for the duration of the program was found to be very important for success. Conversely, having a “*buddy*” system seemed to be effective for athletes in that they were able to “*hold each other accountable*” and have fun together. Several sites noted that having a trainer was very helpful for athletes.
- **Introducing the program to athletes** before they start was identified as a useful strategy to give the program a better and faster start. Verbal reminders and descriptives about the program a month before the program started were reported to be another beneficial strategy.
- Lastly, **having a strong working relationship** with community partners is paramount to achieving a wide

spectrum of successful health promotion that will ensure active, ongoing participation from athletes, coaches, and carers; and long-term positive health benefits for athletes.

## Model Health Promotion Program

A prototype of a health promotion program related to exercise and nutrition for persons with ID needs to incorporate several key components:

1. **Theoretical support.** First, the program needs to be based on **sound and tested theory**. For example, the Transtheoretical Model of Behavior Change<sup>16,17</sup> and Bandura's Social Cognitive Theory<sup>1,2</sup> can offer a framework for structuring activities for participants and coaches to learn the processes of modifying or changing health behaviors and improving one's self-confidence to change his or her behavior.
2. **Supportive environments.** Mounting evidence suggests that sustainable health promotion programs include supportive environment and attitudes within your organization. The Transtheoretical Model incorporates organizational level behavior change as another critical factor in health promotion programs that lead to behavior change on an individual and organizational level. Health promotion programs must incorporate an assessment of organizational capacity to evaluate the logistics of the program (e.g., existing services, programs, available equipment and facilities, current policies and procedures, and existing time constraints).

Health promotion programs should also secure “**buy-in**” from all program partners including athletes, coaches, family member, non-family carers, and community partners while developing the health promotion program. Scheduling preliminary meetings with everyone can provide an opportunity to present the proposed program and address concerns and respond to questions related to program implementation. Adequate buy-in will insure supportive attitudes among all partners for healthy lifestyles for persons with ID and themselves.

**3. Educational focus.** Health promotion programs should incorporate and/or adapt existing health promotion curriculum that have been developed and tested with persons with intellectual and developmental disabilities. For example, *Steps to Your Health* (South Carolina Interagency Office agency on Disabilities and Health) and the *Exercise and Nutrition Health Education Curriculum for Adults with Developmental Disabilities*<sup>11</sup> have been used with individuals with intellectual disabilities. Each program should incorporate components of **caregiver support, physical activity and fitness training, and health education related to nutrition and physical fitness.**

**4. Core activities.** To address the critical health needs related to physical activity and nutrition among persons with ID, health promotion programs must include four core activities. Each program should have include **caregiver support** that encourages persons with ID to **increase physical activity, engage in regular, targeted fitness activities** to change body composition, and **to make healthier food choices**. Additionally, programs must include targeted motivational strategies that support lifestyle changes.

**5. Evaluation.** Program evaluation is an important step from program initiation to program completion. It enables you to continuously improve and adapt your program to meet needs of SO athletes and each SO site. Specifically, the evaluation allows you to do the following: 1) record and understand the benefits of your health promotion program for athletes, 2) assess the degree to which you meet your stated goals and objectives, 3) identify your program strengths and weaknesses, and 4) make ongoing improvements in the program.

To evaluate program goals, questions may focus on the need to change priorities, timelines, and goals to secure additional resources to operate the program.

Determining your program strengths and weaknesses is useful for all involved partners to identify problems in the program and solutions, along with the strengths of the

program. Outcomes for health promotion programs often consist of enhanced learning (knowledge, perceptions/attitudes or skills) or improvements in health status. **Health status outcomes may consist of the following:**

- **Improved psychosocial health status**
- **Improved physical activity and nutrition cognitions**
- **Improved physical activity adherence and eating nutritious foods measures**
- **Improved physiological health status**

Lastly, evaluation of your program provides an opportunity to describe your program so that it can be replicated throughout other Special Olympic sites.

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## SPECIAL OLYMPICS HEALTHY ATHLETES

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