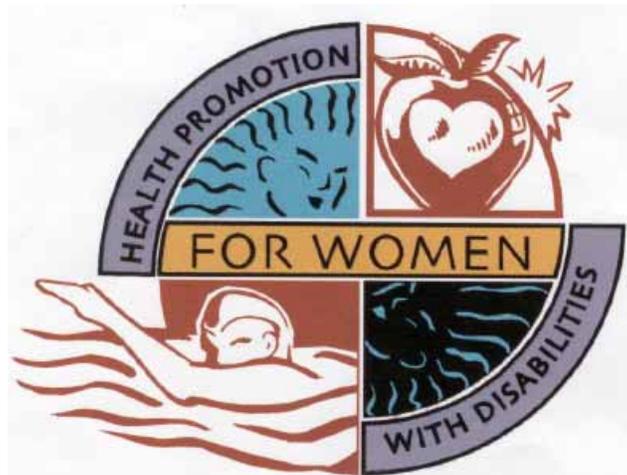


# Health Promotion for Persons With Disabilities and Prevention of Secondary Conditions

## Executive Summary

Project Number: # R04/CCR717707-01  
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The health-benefits of participation in regular physical activity are great. Accumulating 30 minutes of moderate-intensity activity on most days of the week substantially reduces risk for cardiovascular diseases, some cancers, stroke, and diabetes and can help maintain healthy cholesterol levels, blood pressure, and weight (US Department of Health and Human Services [USDHHS], 1996). Unfortunately, most Americans are sedentary or not active enough to enjoy these health benefits (USDHHS, 1996). People with disabilities are even more sedentary than the general population (Heath & Fentem, 1997). However, the benefits of physical activity may be even greater for people with disabilities (Rimmer, Braddock, & Pitetti, 1996). Not only is it possible for people with disabilities to reduce their chronic disease risk through becoming regularly physically active, but physical activity may also improve their day-to-day health by lowering blood pressure or cholesterol and increasing strength and endurance. Further, increased strength and endurance may also facilitate improved function and enhance individuals' ability to be more independent.

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Heath, G. W., & Fentem, P. H. (1997). Physical activity among persons with disabilities: A public health perspective. *Exercise and Sport Sciences Reviews*, *25*, 195-234.

Rimmer, J. H., Braddock, D., & Pitetti, K. H. (1996). Research on physical activity and disability: An emerging national priority. *Medicine and Science in Sports and Exercise*, *28*, 1366-1372.

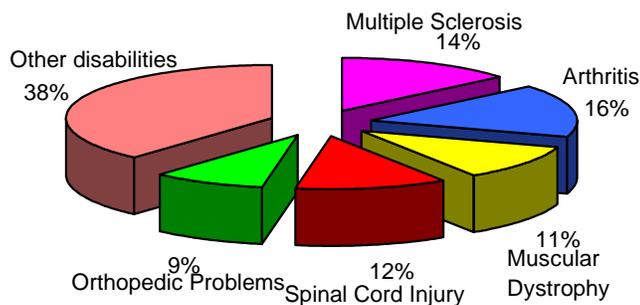
U.S. Department of Health and Human Services. (1996). *Physical activity and health: A report of the Surgeon General*. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion.

This randomized-controlled clinical trial assessed the effectiveness of an intervention to promote physical activity by women with mobility impairments. To allow maximum flexibility for individual differences in abilities and interests and to promote maintenance of activity beyond the intervention, this intervention was a six-month, home-based program. Participants attended a mandatory day-long educational workshop, were provided individualized physical activity counseling with an exercise physiologist, asked to monitor their weekly physical activity levels, asked to talk weekly with another woman in the program for support, and reward themselves each week they met their activity goals. Participants were also assessed on numerous outcome measures to determine the effect of physical activity on physiological, psychological, and their self-reported experience of secondary conditions. Ninety-three women enrolled in the study. Their demographic information and results of the physical activity intervention are summarized in this report. This study was designed so that the control group served as a waiting-list control, and the intervention was replicated with this group. Additional analyses were conducted by collapsing data for both groups to increase the statistical power for detecting differences over time. Thus, data are also presented regarding the intervention's effect over a year, which represents the time period from baseline to the six months after the six-month intervention ended.

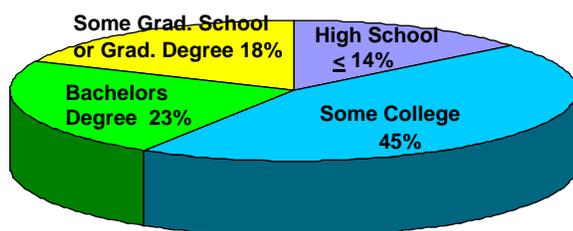
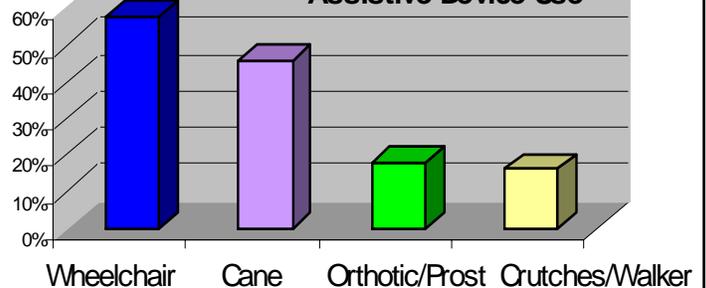
## PARTICIPANT DEMOGRAPHICS

The mean age of participants was 44.4 years,  
73% of the women were Caucasian, 26% were African American

### Disability Types Represented

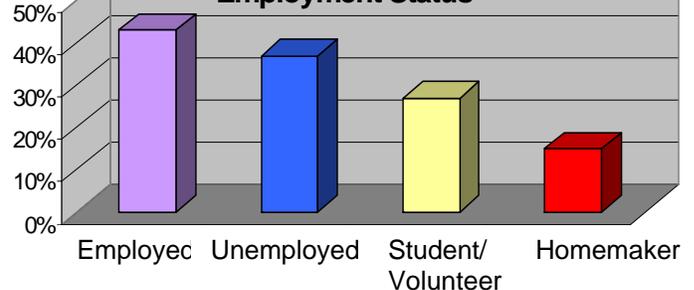


### Assistive Device Use



### Education Level

### Employment Status

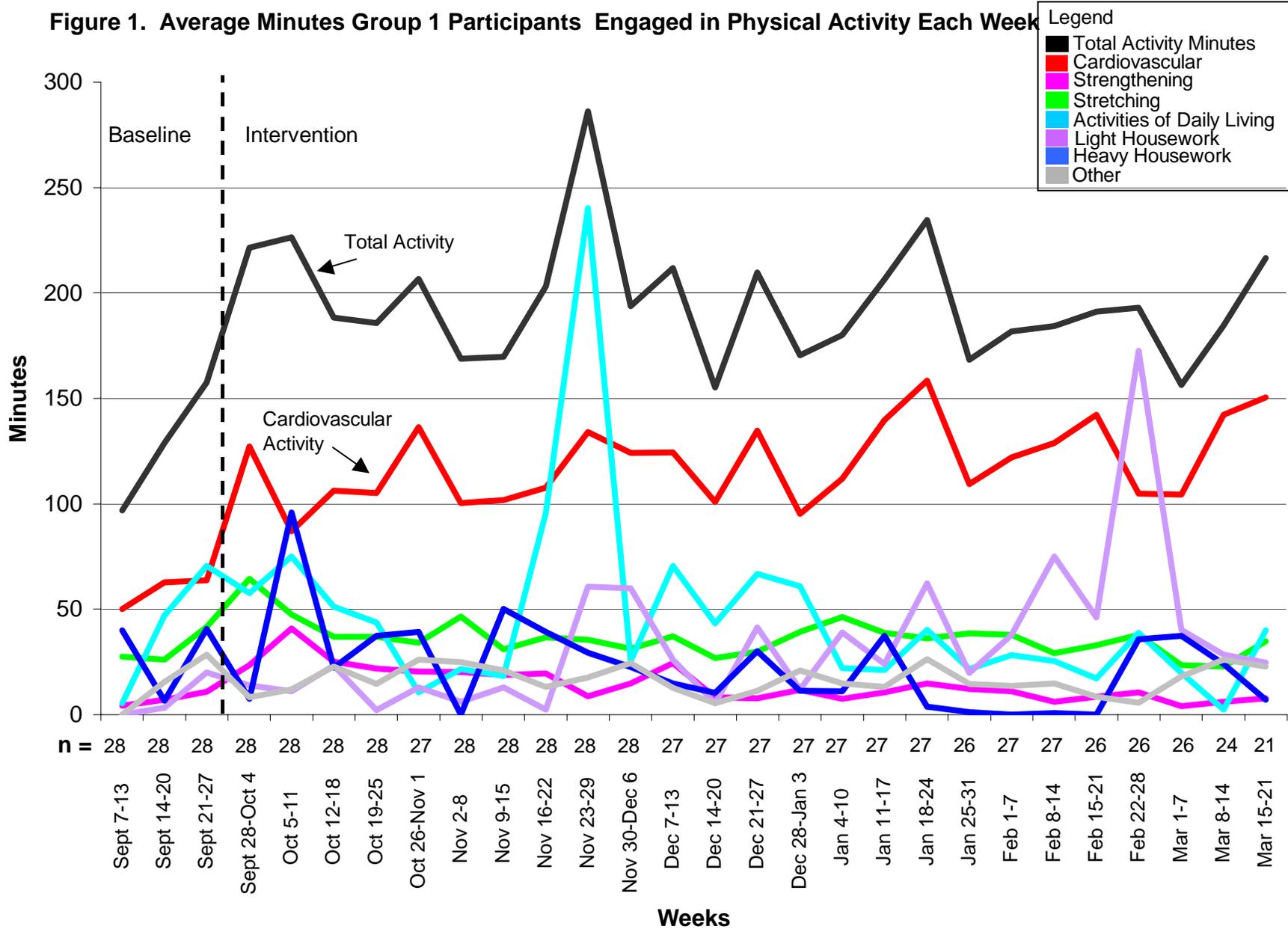


## **RESULTS**

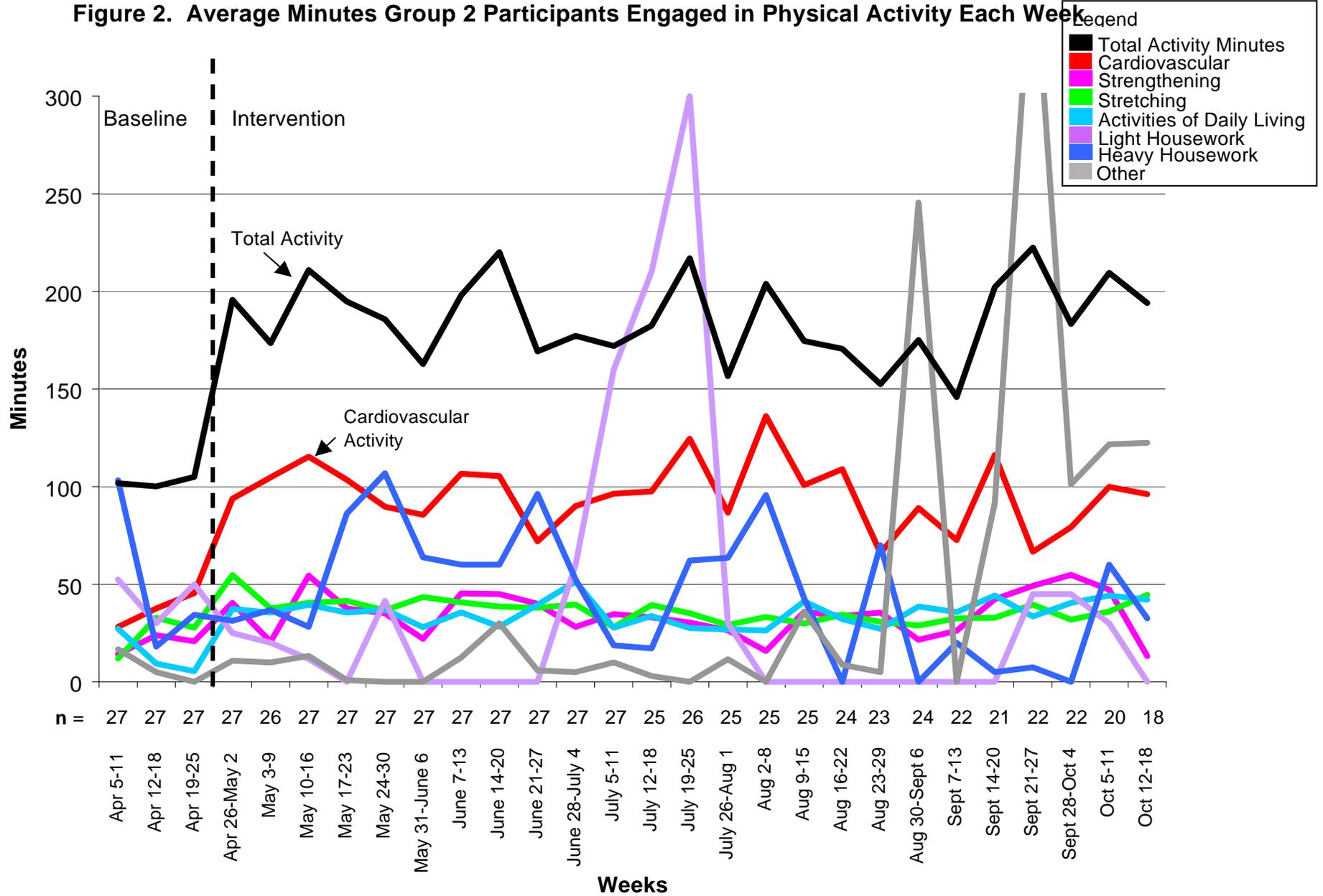
### *Self-Reported Physical Activity*

Women's weekly self-reports of physical activity revealed that they increased their activity over the six-month intervention. Baseline data collected for the 3 weeks before the program began were compared to data from the 25 intervention weeks. The data reveal that participants in the first experimental group more than doubled the amount of time they engaged in cardiovascular activity. See data in Figure 1. During baseline, this group reported doing an average of 59 minutes of cardiovascular activity each week, which increased to an average of 119 minutes for the 25 intervention weeks. Although there were weekly fluctuations in activity, participants were always more active during the intervention than before it began. However, program adherence varied. More than half (57%) of the participants reported being inactive for an average of 4 of the 25 program weeks. Although 79% of the participants were adherent for 20 to 25 weeks of the program. Self-report data from the waiting-list control group showed similar trends, although on average, this group engaged in less cardiovascular activity and had lower adherence than the first group. See data in Figure 2. During baseline women reported an average of 37 minutes of cardiovascular activity each week which increased to an average of 96 minutes for the six-month intervention. Forty-one percent reported being inactive for an average of 6.7 weeks and in this group only 67% adhered to their activity program for 20 to 25 program weeks.

**Figure 1. Average Minutes Group 1 Participants Engaged in Physical Activity Each Week**



**Figure 2. Average Minutes Group 2 Participants Engaged in Physical Activity Each Week**



## RESULTS

### *Analyses between the experimental and control groups*

Although participants reported increased activity over the six-month intervention, there were few significant physiological or psychological changes immediately following the intervention. Thus, participants did not show significant changes in weight, body fat, cholesterol levels, resting heart rate, resting blood pressure, depression, stress, self-reported health, or the number of secondary conditions experienced over the previous six months. However, the experimental group was able to significantly increase their heart rate following the intervention compared to the control group, which may indicate an increased ability to exert themselves. Further, although not significantly different, the experimental group reported experiencing fewer secondary conditions on a chronic basis during the intervention whereas the control group reported experiencing approximately the same number of conditions on a chronic basis at both time points.

### *Follow-up Analyses*

Analyses of the data collapsed for both groups over 12 months from baseline to post-testing and then six-months after the intervention revealed significant changes in participants' level of perceived stress, physical functioning and vitality on the SF36, diastolic blood pressure while at rest, resting heart rate, their velocity on the ADL course, and the number of conditions they reported as chronic problems.

Measure	n	Mean at Pretest (SD)	Mean at 6 months posttest (SD)	Mean at 12 months posttest (SD)	P value
Perceived Stress	44	28.79 (6.90)	28.19 (8.92)	23.64 (10.48)	0.000
SF36 - Physical Functioning	44	31.02 (20.79)	33.45 (24.70)	36.72 (23.74)	0.003
SF36 – Vitality	45	32.93 (19.68)	35.11 (22.45)	40.33 (24.29)	0.045
Resting Diastolic Blood Pressure	40	82.50 (8.9)	79.14 (7.28)	79.83 (9.79)	0.036
Resting Heart Rate	40	96.15 (12.25)	92.37 (13.16)	92.08 (13.90)	0.003
Velocity on the ADL Course	40	0.771 (.313)	0.866 (.326)	0.854 (.323)	0.003
Chronic Secondary Conditions	35	6.25 (3.35)	5.53 (3.40)	5.31 (3.67)	0.016

## Conclusions

This intervention successfully promoted increased participation in physical activity for women with disabilities over six-months. While activity adherence varied over the 25 weeks, participants' activity patterns revealed they occasionally had short bouts of inactivity and then resumed activity within one to four weeks rather than stopping activity altogether.

Despite participants increased activity levels, they did not experience significant physiological and psychological changes immediately following the six-month intervention. However, qualitative data collected from phone interviews after the intervention revealed that 78% of participants felt that increasing their physical activity fostered positive changes in other life areas. Women talked about things like gaining more self-confidence, feeling more energetic, becoming more active and doing things like going back to school and visiting friends, and being prompted to think more about their health. More than one-quarter of the women reported having increased strength, 23% reported increased energy, and 23% reported increased endurance. Further, more than half of the women reported positive changes in their mental state such as having better concentration, feeling motivated, and feeling a sense of accomplishment and confidence about doing something they had not thought they could do.

Data collected at three time points over a 12 month period revealed that participants had significantly reduced their level of perceived stress, physical functioning and vitality as measured by the SF36, diastolic blood pressure while at rest, resting heart rate, their velocity on the course, and the number of conditions they reported were chronic problems. Thus, these data suggest that maintaining moderate levels of physical activity for a year can result in significant physiological and psychological changes.



We also created an **exercise manual** for those interested to initiate their own physical activity program. The manual covers:

- Barriers to physical activity and ways to overcome them
- Why physical activity is important for people with disabilities
- Strategies for becoming more physically active
- Informational resources about exercise equipment, exercise videos, and magazines and websites for people with disabilities.