

## **Helping Older People Be Active at Home: The Effectiveness of the Home Support Exercise Program**

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*“Physical activity improves health”  
(Health Canada, 1999a)*

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## Background to this Report

*An appropriate fitness program for the middle-aged or older worker can boost their maximal oxygen intake by 5 to 10 ml [kg/min] and their muscular strength by 10 to 20%. Such gains are equivalent to a 10- to 20-year reversal of the normal aging process...”*  
(Shephard, 1997, p. 345).

The Alberta Centre for Active Living aims to promote the health of older adults in Alberta by helping communities and practitioners through the Home Support Exercise Program (HSEP). This provincial initiative, aimed at updating and training health care and community practitioners, is founded on the premise that “Physical activity improves health”—a Health Canada (1999a) statement based on an overwhelming collection of scientific evidence over the past 50 years.

The accumulated evidence is strong, universal, and significant (O’Brien Cousins & Horne, 1999), from randomized, controlled intervention trials (Blair et al., 1989), to large population studies in epidemiology (Palmore, 1989), to in-depth individual case studies (Burgess & O’Brien Cousins, 1998). People get extra years of life for extra effort (Elmer-DeWitt, 1986; Paffenbarger, Hyde, Wing, & Hsieh, 1986). At any age in the human lifespan, physical activity at leisure or at work, for up to 60 minutes a day, is effective in promoting physical health, social and psychological well-being, and functional fitness (Blain, Vuillemin, Blain, & Jeandel, 2000).

Ample evidence suggests that enjoying later life in better health is possible for most people simply by choosing to age more actively (Astrand, 1992). Since physically active lifestyles delay mortality by maintaining or improving function (Blair et al. 1989), active living can be considered an anti-aging strategy (Butler, Fossel, Pan, Rothman, & Rothman, 2000). Seniors can experience a better old age if they follow the recommendations in Health Canada’s *Physical Activity Guide to Healthy Active Living for Older Adults* (1999b), i.e., everyday involvement in strength, endurance, and flexibility activities. In the variety, duration, and intensity of active living, Albertans can make choices about how they will experience late life.

## Purpose of this Report

This report reviews the known benefits and cost-effectiveness of formal and informal activity programs aimed at older adults, especially for those adults trying to be more active where they live. In this document, we specifically focus on the Home Support Exercise Program (HSEP) and its known costs and impact on house-bound elders receiving home-care support. A larger report examines the cost-effectiveness of active living more generally among older Canadians.

## The Problem: The Norm Is Inactivity

Half or more of Canadian elders 65+ and 63% of elders 75+ are considered insufficiently active (National Advisory Council on Aging, 2003). The prevalence of sedentary living is considered an even bigger health issue than smoking (fewer than 25% of seniors smoke). Both smoking and sedentary living act independently to double health risks from all causes, and in combination, they quadruple risks of future health problems.

Physical activity during leisure is considered the preferred route over work activity (offering more enjoyment and contribution to quality of life). A recent physical activity study in the US reports that for adults 65–74, only 5.2% of their energy spent in a 24-hour day is on leisure-time physical activity (LTPA) and 35% is on household-related activity (Dong, Block, & Mandel, 2004). For adults 75+, only 1.9% of energy is spent on LTPA and over 92% of them have no participation at all in LTPA.

About 60% or more of older Canadians are insufficiently active, and the activity levels decline even further with ever-advancing age ([www.cflri.ca/cflri/pa/surveys/2002survey/2002survey.html](http://www.cflri.ca/cflri/pa/surveys/2002survey/2002survey.html)). In addition, the percentage of Canadians rating their health as very good or excellent generally decreases by age. Thus, we can say with some certainty that most older Canadians are not aging as well as they could.

*Physical inactivity remains stubbornly high among seniors 75 years and older, although even mild activity has proven physical and mental benefits for seniors of all ages. Changing from a sedentary, physically inactive lifestyle, to do mild to moderate physical activity regularly is an important step toward maintaining or improving health (National Advisory Council on Aging, 2003, p. 3)*

Older people tend to become institutionalized when they become too stiff, too weak, too stooped, and too unsteady to live safely in their homes (O'Brien Cousins, 2003a). Functional issues such as falling may be linked to certain medications, but falls can also result from poor posture, musculoskeletal weakness, poor circulation mechanisms, and reduced kinaesthetic awareness from years of sitting (O'Brien Cousins & Goodwin, 2002).

Such functional issues related to inactivity are generally reversible to some extent (Burgess & O'Brien Cousins, 1998), but the strongly preferred course of action is *prevention*. Petrella, Lattanzio, Demeray, Varallo, & Blore (2005) reported on the unique biological trajectories of active living vs sedentary living. At 10 years of regular exercise for formerly sedentary patients, active subjects demonstrated a 3.5% increase in fitness levels vs. a 13.8% decrease in sedentary patients—a 17% gap in aging outcomes!

Years of inactivity lead to serious disadvantages such as increased dependency and reduced quality of life (pain, stiffness, weakness, and lethargy) and exacerbates future health and functional concerns (O'Brien Cousins, 2003a). Those who suffer most with acute disease or mounting chronic problems tend to differ from other seniors in one profound way—their lifestyles are (and have been) too inactive. Inactivity, quite simply, leads to increased dependency.

The proof of this disadvantaged aging is seen in the exponential increase of care costs with increasing age. According to the National Advisory Council on Aging (<http://www.naca-centra.ca/expression/11-1/expe11-1.htm>, 1997), of all seniors' disabilities, the most common are those affecting mobility (74.2%) and agility (65%). Yet mobility and physical agility are relatively easy to maintain with simple and easy stretches, t'ai chi, or dancing. Lack of mobility begets immobility.

A worrisome statistic mentioned earlier is that activity levels in later life drop off at an alarmingly linear rate. We also know that as age increases, health-care costs skyrocket. We could simply ignore the active living factor and blame these health-care statistics on age, but then how do you explain Charlie Booth at age 99 sprinting to a gold medal at the 2002 World Masters Games? How do you explain the good health of so many vibrant 80- and 90-year-old Canadians? Is it really as simple as “good” genes?

Genetic theories weaken with government data that reveals a shocking acceleration of disease after age 75. If genes are that protective, why do they suddenly shut down at 75? With the human life span established at 120 years, the number 75 has no particular biological meaning, except that 75 is 10 years after the formal retirement at age 65 when we may be seeing the effects of a decade of sedentary living.

Ageist policies and social practice (e.g., slowing down) encourage self-stereotyping. These policies and practices are potentially enormous contributing factors to the passive lifestyle choices people tend to make in later life (O'Brien Cousins, 2005). If we ignore chronological age for a moment, these incremental decreases in active living in later life are clearly profound. Such decreases in daily activity would be expected to accelerate disease at any age or stage of life. Therefore, we should not be surprised that the costs of disease as a result of inactivity are likely to equal an overwhelming statistic.

### **Advanced Age and Overcoming Frailty Studies**

Relatively little is known about the feasibility of restoring function and independence once disability sets in. However, available evidence suggests that 45 minutes of seated exercise five times a week for six months can substantially improve eating and dressing activities (Julman & Wilkinson, 1989).

After exercise classes for one hour, once a week, and for ten minutes twice a week, nursing home residents averaging 83 years of age reduced the time needed to stand from a sitting position and used less hand assistance (O'Hagan, Smith, & Pileggi, 1994).

Burgess and O'Brien Cousins (1998) report on a one-year case study of an 80-year-old woman with mounting serious and multiple health issues. The woman's physicians considered her no longer treatable. However, by not giving up and with the help of a seasoned physical educator, she not only recovered some function, but made a successful reversal of her "downward spiral." Through a variety of regular exercises almost daily over the course of a year, the elderly woman's efforts led to remarkable success in overcoming her breathlessness, reducing her hypertension, mobilizing her frozen shoulder, and regaining single up-and-down stairclimbing on her osteoarthritic knee. She lived five more years, enjoying high-quality function that permitted her to re-engage socially and entertain friends at her home for dinner.

### What Is the Best Activity to Promote Health?

Comparative research that specifically examines the "best exercise" for a particular health benefit or economic benefit is not available. However, the best exercise is one that is enjoyed enough to do regularly. While we do not know the specific health contribution or risk of every specific movement pattern, exercise, or sport, there is research support for the following.

- *Gentle stretches* through a range of motion add mobility and ease movement almost immediately in older joints, supporting a freedom of movement especially appreciated among the elderly (O'Brien Cousins & Horne, 1999).
- *Balance, reaction time, and agility* can be maintained by participating in a variety of activities that activate the muscles of the lower body (notably hips, knees, ankles, and toes) in challenging tasks such as t'ai chi or other balance tasks (Buchner et al., 1993; Conright et al., 1990; Jirovec, 1991; Judge, Whipple, King & Wolfson, 1993; Lord & Castell, 1994; Mills, 1994; Myers et al., 1996; Roberts, 1989; Rosenstein, 2001; Sauvage et al., 1992; Schlicht, Camaione & Owen, 2001; Topp, Mikesky, Wigglesworth, Holt, & Edwards, 1993; Wolfson et al., 1993).
- *Strength or resistance activities* using small to large weights and various resistance machines make the working muscles stronger. Age is no barrier, as strength can increase *by up to 200% in frail elders* (Fiatarone et al., 1990).
- *Endurance activities* effectively build fitness among older adults. In the last 30 years, many studies have accumulated on the beneficial effects of the following activities.
  - *Walking* (Allegrante, Kovar, MacKenzie, Peterson, & Gutin, 1993; Bonder, 1998; Bunse, Klemp & Bisler, 1992; Conright et al., 1990; Dowling, 1986; Freidman & Tappen, 1991;

- Gueldner & Spradley, 1988; Hatori et al., 1993; Heyneman & Premo, 1992; Holmberg, 1997; Koroknay, Werner, Cohen-Manfield, & Braun, 1991; Kovar et al., 1992; Milligan, 1992; Mutrie & Blamey, 2000; Narula, Kulig & Jackson, 1994; Nelson, Fisher, Dilmanian, Dallal, & Evans, 1991; Peterson et al. 1993; Pronk, Crouse & Rohack, 1995; Rantananen et al., 1998; Ready et al., 1992; Ready, Drinkwater, Ducas, & Fitzpatrick, 1996; Roberts, 1989; Roberts, 1990; Tucker & Mortell, 1993; Winter, Patla, Frank, & Walt, 1990)
- *Dancing* (Asci, Kin, & Kosar, 1998; Berryman, 1986; Dowdy, Cureton, DuVal, & Ouzts, 1985; Hopkins, Murrach, Hoeger, & Rhodes, 1990; Milchrist, 2001; Munns, 1980; Valentine-Garzon, Maynard, & Selznick, 1992)
  - *Cycling* (Buccola & Stone, 1975; Fleg et al., 1993; Kauffman, Sforzo, Frost, & Todd, 1977; Magnus, Matroos, & Strackee, 1979; Mittleman, Crawford, Holliday, Gutman, & Bhaktan, 1989; Namey, 1990; Smith, 1979; Turner, 1986)
  - *Swimming* (Hartley & Hartley, 1986; Hastings, Kurth, & Meyer, 1989; Joseph, 1974; Kanaar, & Hecht, 1992; Sorg, 1993; Swan & Spitler, 1989; Vaccaro, Dummer, & Clarke, 1981; Vaccaro et al., 1984)

Overall a variety of physical activity leads to a variety of health benefits (Health Canada, 1999a). Thus, there is no best exercise. Walking (often described as “a good way to start”) on its own does not provide that variety. A variety of physical activity would add exercises for arm strength, more intense aerobic challenges, and full range of motion in most joints.

Moreover, we know that even 10 minutes count toward the optimal total of 30 to 60 minutes daily, regardless of age (Health Canada, 1999a). Daily physical activity of 30 to 60 minutes is considered optimal to adult health promotion and maintenance and particularly benefits older adults who often lack encouragement to stay active (Health Canada, 1999a).

Leisure-time physical activity (LTPA) is generally considered to be preferable and additional to work-time physical activity (WTPA). There are significant enjoyment benefits to self-selected or volitional activities that motivate people to continue (O'Brien Cousins, 1998). Paffenbarger, Hyde, Wing, & Hsieh (1986) recommend 2000 kcal per week as an ideal energy expenditure on LTPA during midlife for men. Less is known about work energy requirements, and no data is available yet on women. Among retired older adults, leisure-time and work-time activity can blur in definition (e.g., is gardening work or leisure?), and thus it is recommended that *all* physical activities undertaken by elders count toward the daily total.



## Evidence on the Effectiveness of Home Exercise

Lack of facility access, lack of transportation, and psychological barriers are key reasons why home exercise programs may work to improve older adult involvement. Discussing the results of the Strong-for-Life Program, Jette et al. (1999) reported that the program used a home-based approach particularly suited to people with disabilities. As Jette et al. noted, “if regular exercise is to be widely adopted and maintained by large numbers of older persons, it must be enjoyable, inexpensive, and achievable with minimal levels of supervision.”

Jette et al.’s study involved 215 older adults, with 107 participating and 108 acting as controls. The structured exercise program involved 35 minutes of strength training while following a videotaped routine. The program included a warm-up, cool down, and 11 strengthening exercises using elastic bands of varying thickness. The movements selected were related to normal functional activities and were done three times a week over a six-month period. Assessments of muscle strength, balance, functional mobility, disability status, and mood state were assessed at 0, three, and six months.

The study found that participants adhered to 89% of the recommended exercise sessions over the six-month period (and 57% had 100% adherence rates). Compared to controls, participants had

- leg strength improvements of 6% to 12%;
- a 20% improvement in tandem gait (a measure of balance);
- a 15% to 18% reduction in overall disability at six months.

*The Strong-for-Life program was considered safe, low-cost, and effective in increasing the physical activity of older people. In a time of rising health care costs and a steadily aging population, these are crucial program attributes (New Brunswick Council for Fitness and Active Living, 2005).*

Nutritionists advocate home-based exercise programs as effective accompaniments to nutrition interventions targeting undernourished seniors (Division of Aging and Seniors, 2002c). For example, consuming liquid supplements has been considered helpful in curbing weight loss and even in restoring weight. However, in a landmark study by Fiatarone et al. (1994), improved nutritional status did not translate into significant clinical improvement in muscle strength or



other functional indicators unless combined with progressive increases in physical activity. Clearly, nutrition alone does not lead to functional fitness.

## The Home Support Exercise Program (HSEP)

In 1996, the Canadian Centre for Activity and Aging (CCAA) developed the Home Support Exercise Program, an evidence-based physical activity intervention delivered through the home-care system. Later, in 2003, the Alberta Centre for Active Living partnered with the CCAA to disseminate the program across Alberta. Funding from the Alberta government also allowed healthy eating content to be added and the program to be offered to the health regions in a subsidized way.

Keeping elders functioning well in their own homes is considered the optimal course of action for individual life quality. Designed for home-care clients (older adults who already receive home-care services), HSEP is offered through community-health services and accessed by the Regional Health Authorities. HSEP clients are frail, face declining mobility, and lead sedentary lifestyles. These older adults are often considered at risk for institutionalization—a traumatic and costly event. Readers are encouraged to see the latest findings on the HSEP Alberta implementation and evaluation (Alberta Centre for Active Living, 2005) at [www.centre4activeliving.ca/Education/OlderAdults/HSEP/CalgaryReport.pdf](http://www.centre4activeliving.ca/Education/OlderAdults/HSEP/CalgaryReport.pdf).

### ***What Is Involved in HSEP?***

To begin implementing the program, home-care staff first participate in HSEP training and orientation. A trained community-care coordinator/home-care nurse introduces the client to the program, assesses their interest and ability, and authorizes the health-care aide to start the client on the program. Using one-on-one coaching, an HSEP trained health-care aide and client begin working through the ten exercises and seven healthy eating tips with the client, along with the HSEP resources and a progress chart (Jacob Johnson, Myers, Scholey, Cyarto, & Ecclestone, 2003).

Originally, this one-time orientation took approximately 60 minutes (Jacob-Johnson et al., 2003). With the healthy eating addition, we now encourage allowing 60–90 minutes and spreading the information over three half-hour visits. This is proving to be more manageable and effective for staff and clients. Once the client is familiar with the program, ongoing encouragement and spot-checks, but not supervision, on regular visits are usually required (Alberta Centre for Active Living, 2004).

Costs of this program are higher at the initial point of personal instruction and then decrease over time to be a non-time-consuming intervention for the home-care staff. On their regular visits with

the client, maintenance and support (helping client establish a daily routine, praise, reviewing the exercises as needed, help in filling out the progress chart, and encouraging progression) become the home-care staff's main role and should take no longer than five minutes during their regularly scheduled visit.

### ***Does HSEP Work?***

HSEP differs from prior interventions in several important respects:

- physician referral is not required;
- no equipment or client transport is needed;
- specialized activity trainers are not used;
- there is ongoing support and monitoring through regularly scheduled home-care visits (Jacob Johnson et al., 2003).

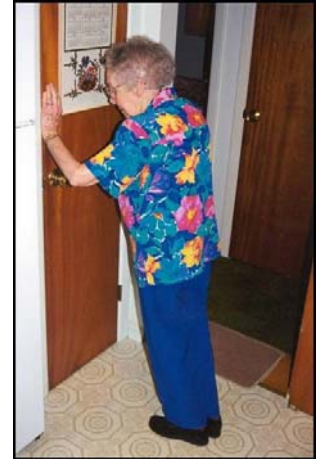
A non-random intervention study by Tudor-Locke, Myers, Jacob, Lazowski, & Ecclestone (2000) followed 60 elderly clients and 38 older adults in the control group. This group's most common problems included

- arthritis (74%);
- high blood pressure (55%);
- vision problems (51%);
- heart problems (44%);
- bladder conditions (43%).

For reasons of standardization, the researcher presented the HSEP intervention in the company of the home-support worker. Thus, it is not clear if the results can be generalized to home-support workers intervening on their own.

Tudor-Locke et al. (2000) established a 75% return rate (exercise-compliance) using the completion and submission of individual activity progress charts at the end of the four-month intervention. Ages ranged between 65 and 98, and members of both groups were predominantly female (73%, 92%). Both groups averaged over six health problems per individual and about six daily medications. About 25% had fallen in the past year. Only 12% were classified by the home-support worker as "very steady" on their feet (Jacob Johnson et al., 2003).

From 60 starters, a 67% participation rate was obtained for both baseline and follow-up interviews and pre-post assessments at four months. Clients carried out one or more of the exercises on between 10 and 112 days of the four-month intervention, with an average involvement of 5.6 days per week. Over 90% of clients did at least one of the exercises three times a week or more. No



significant differences in demographic, health, or mobility characteristics were found between those returning and those not returning progress charts.

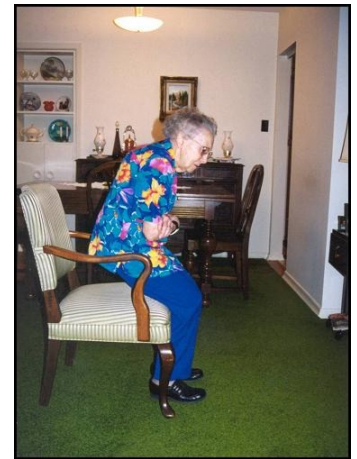
Slowing age declines or even maintaining function among very elderly adults is worthwhile. Improvements over baseline, as seen in this study, are thus especially impressive outcomes. The HSEP group significantly improved on all indicators except functional reach. Significant group differences emerged in mean change scores for the

- Timed Up and Go (TUG) walking-agility test;
- single sit-to-stand test;
- six-minute walk for distance, balance, and confidence;
- Vitality Plus Survey (VPS) (general well-being).

Of the 40 clients completing, 25 (or 63%) improved on five or more functional assessments. Improvements at post-intervention were moderate to impressive (26% to 300%). Frequency of days exercising was significantly correlated with TUG scores ( $r=37$ ,  $p<.05$ ). No clear pattern of change was evident with the number of home-support worker visits.

Supporting the statistical findings, home-support workers observed a number of functional improvements leading to greater independence in daily activities. Moreover, item analysis for clients showed an overall positive change score for

- morning stiffness (63%);
- falling asleep quickly (52%);
- energy (44%);
- feeling rested (41%);
- sleeping well (36%);
- reduced constipation (34%);
- fewer aches and pains (28%).



In contrast, 46% of the comparison group declined on five or more of the indicators. Diminished performance at four months was particularly evident on the six-minute walk and sit-to-stand measures, although the magnitude of decline was relatively small. Only small improvements were seen on some measures in some of the comparison group members.

### ***Cost-Effectiveness of HSEP***

A home exercise study by Gill et al. (2002) involving 16 home visits by therapists for instruction and supervision was estimated to cost about \$2,000 per participant based on staff time, equipment, and supplies. In contrast, clients do not pay anything to be part of HSEP.

Although formal cost analysis was not done in this HSEP intervention, the hourly wages of home-support workers are lower than those of professional staff (e.g., nurses, physical or occupational therapists) (Jacob Johnson et al., 2003). Because of employee wages, decreased implementation time, and minimal supervision time during regularly scheduled home visits, the HSEP program is very cost-effective. Once staff are trained, it may take home care staff a total of two hours to completely and successfully implement HSEP with a client.

**Table 1: The Costs of Training, Preparation, and Implementation of HSEP in Alberta**

<b>Staff Member</b>	<b>HSEP Item</b>	<b>Amount</b>
<b>Training and Orientation Costs</b>		
Health-care aide (HCA) training	Workshop Cost (4 hours)	\$75.00
	Staff time cost average @ \$15/hour	\$60.00
	<b>Total:</b>	<b>\$135.00</b>
Community-care coordinator (CCC) Orientation (e.g., RNs, Physical & Occupational Therapists)	Orientation Cost (2 hours)	\$50.00
	Staff time cost average @ \$30/hour	\$60.00
	<b>Total:</b>	<b>\$110.00</b>
<b>Total Staff Training Costs (One HCA and one CCC)</b>		<b>\$245.00</b>
<b>Implementation Costs</b>		
Health-care aide (HCA)	Initial coaching (up to 1.5 hours @ \$15.00/hr)	\$22.50
Community-care coordinator (CCC)	Client assessment (on regular visit, approx time 20-30 minutes)	\$30.00
Administration	Administration and tracking (1.0 hour @ \$15.00/hr)	\$15.00
<b>Total Implementation Costs (per client)</b>		<b>\$67.50</b>

Each home-care client who begins the program costs home care approximately \$67.50 in implementation costs. This includes the assessment, initial coaching, and monitoring.

Added to these client implementation costs are the training costs of staff (at \$245.00 see Table 1). If 50% of a home care staff's 10 clients join HSEP, staff training costs become \$49.00 per active client (training costs @ \$245 divided by five clients). If, over time, the case coordinator and

health-care aide are able to mobilize as many as 10 clients, training costs drop to \$24.50 (training costs @ \$245 divided by 10 clients).

Thus, for about \$92 per client (total implementation cost (see table 1) @ \$67.50 + training cost of \$24.50), we can expect to improve functional status for muscle strength, joint mobility, confidence in balance, and increase walking performance. To add to the list of positive results, clients report falling asleep better, improved sleep, more energy and endurance, and improved mood.

Are these physical benefits worth the cost? Reducing one medication (such as a sleeping pill) alone would justify implementation. Lessening the severity of a future illness and so avoiding one physician visit, would clearly make the program very cost-effective. If a single medical test is avoided or one overnight hospital stay prevented, then the program becomes overwhelmingly valuable.

In addition, clients using HSEP generally feel better and function more independently, putting less of a load on the health-care aide. This time can be traded in on more support or encouragement for healthy lifestyle choices such as active living everyday. In this way, “downriver care” is shifted to less expensive “upstream management.”

### ***Sustainability of the Program***

Long-term stability of the implemented program depends on a system to train facilitators. The tendency for a high rate of turnover in home care staff can greatly hamper the success of the program in many communities. Health regions with facilitators in-house, as opposed to hiring external facilitators, are more able to train and observe new staff, thus decreasing the cost of sustaining the program. The program material costs, such as the manuals, will stay the same, but facilitator costs will be reduced. Table 2 represents the cost of getting an HSEP facilitator trained.

**Table 2: Estimated Train the Trainer Costs of HSEP**

Course cost per facilitator	\$300.00
Compensation for 8-hour training day @\$30/hr	\$240.00
<i>Total</i>	<b>\$540.00</b>

Once facilitators within the health region or agency are trained, they are able to provide ongoing training of new staff or refreshers for existing staff. Programs such as HSEP will have short-term results unless maintained. Sustainability costs are not large but involve serious discussion among support agencies and families about who pays for keeping older adults at home. The costs suggest that this is a bargain financially for the public purse. HSEP underscores the importance of

fostering collaborative partnerships with various local agencies to promote the health and well-being of adults in later life.

### Evidence Linking Active Living to Reduced Medical Costs

*Available cost-benefit analyses suggest that the expense of simple exercise programs for seniors can be more than met through savings in both medical expenses and the demands for institutional support (Shephard, 1997, p. 375).*

Elderly members (ages 63–93) of the American Framingham cohort with risk factors for cardiovascular disease (implying a sedentary lifestyle) had 19% higher medical claims than those who did not have those risk factors (Schauffler, Agostino, & Kannel, 1993).

Fries, Bloch, Harrington, Richardson, & Beck (1993) initiated a low-cost health education program for American bank retirees that included a health-risk appraisal and reinforcement materials. The health costs of participants were reduced by 20% over the controls across three different elderly age groups.

Fries, Harrington, Edwards, Kent, & Richardson (1994) showed increased minutes of weekly exercise and reductions in the annual costs of medical visits, hospital days, and sick days for control subjects in a sample of over 12,000 employees and former employees. These changes resulted from conducting health risk appraisals every six months and mailing out healthy lifestyle materials that included information on habitual activity.

### Ethical Challenges in Not Promoting Active Living

People say, “if you don’t have your health, you have nothing.” Knowing how to extend health span to the end of life is a magnificent and priceless achievement. Knowing that inactive people do *not* age well and do not enjoy old age to the same degree as healthier, more active individuals presents an ethical challenge.

How forceful should a “free” society be with inactive people who, even if “healthy now,” can eventually expect more suffering, pain, and difficulties than necessary? Their sedentary lifestyle over the long term has consequences for their health, quality of life, family dependence, and society at large, as they will present more social and medical challenges than active living adults. In an aging society that knows how to age better, do they (or we) really have a choice?

Lifestyle decisions are not simple choices. The stakes are very high. Who chooses to age with aches and pains, consume a number of potent chemicals in the form of pills at every meal, experience the helplessness of a body turning frail, and the depression of never again being able to

do things for yourself? Is this how sedentary people really want to live out their later years? The sad irony of our aging society is that many people think that it is safer to sit out old age than to test their energy and muscle power. They first defer to lethargy and poor fitness in their middle years. Later, there is little option but to defer to medical treatment.

Contrary to popular belief, a sedentary body wears out faster. Bones and muscles waste away. A weak heart muscle pumps ineffectively, depriving all the organs of needed oxygen and nutrients. With such poor function, parts eventually need replacing—hips, hearts, arteries, valves. Our society is appalled when a so-called healthy, active adult dies enjoying life with their sneakers on, but it's okay to die after many months bedridden and in pain. How do we find ways to overcome these ageist and destructive ways of thinking and flawed perceptions?

Two approaches are worth pursuing.

1. We need to find out what works in the specific settings in which we find sedentary people. We can apply social and behavioural theory, remove local environmental barriers, and offer personal incentives.
2. In addition, health policy needs to be reconsidered. The only way to get a free fitness test is to have a heart attack. Wellness costs, while illness is subsidized or financially covered. Inactivity currently costs the country \$2.1 billion a year, leading Alberta Health and Wellness Minister Iris Evans to suggest tax-deductible gym fees (Thorne, 2005). We have to make the healthy choices the easiest choices at home, work, and play.

*Regular enjoyable exercise is currently the most significant route to better health and is a more straightforward and economical means to lifelong health than medication and acute care. In light of the strength of the evidence on the benefits of physical activity, the focus of future action resides mainly in the identification and implementation of successful interventions for older adults (Division of Aging & Seniors, 2002a).*



## Time to Apply What We Know

It's time to try implementing this knowledge and evaluating as we go. Whether it be government initiatives or small community programs, we know that “active living works” for promoting health among individuals, groups, or populations. To keep doing more research is very important, but we know more than enough about how to promote health through physical activity. What is needed now is more evidence on what works for individual motivation and behaviour change, for community mobilization and environmental impact on behaviour change, and for social policy incentives and reinforcements for regular involvement in physical activity.

The experiment we need to undergo is in our homes, workplaces, communities, parks and public settings, and private institutions. This experiment should take place under everyday *uncontrolled conditions* and involve non-scientific people trying to help more Canadians increase the frequency, intensity, and variety of daily physical activity.

Recent research on older adult motivation reinforces the notion that “exercise” is disliked and that the preferred route to active living is enjoyable, voluntary, and self-chosen leisure-time physical activities. Such enjoyment emerges from a basic level of functional fitness—basic abilities such as those promoted in the Home Support Exercise Program. Getting beyond exercise in the home would be the ultimate goal of HSEP.

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