



# Benefits of Investing in Sport

## Executive Summary

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In the past, Canada's physical activity strategy has increased participation in physical activity. A total of \$3.4 billion in health related costs were avoided due to the increased rate of physical activity over the 10 year period of 1981 to 1991 (CFLRI, 1995).

Current strategies at the federal, provincial and municipal levels are continuing to encourage citizens to participate in sport, recreation and healthy lifestyles. However, between 1994 and 1999, the percentage of overweight children in Canada has increased to almost 40% with almost two-thirds of Albertans not physically active enough for optimal health benefits (Tremblay & Willms, 2000; 2001; CFLRI, 2002). Clearly, continuing to encourage people is important but alone it does not appear to be further increasing participation.

The current barriers to participation in physical activity are well documented (Alberta Community Development, 2000). Strategies need to be implemented, particularly at the municipal level that will remove these obstacles and allow more people to get involved. The cost of these strategies must be shared by all levels of government, as the benefits of a more active and healthy population are universal.

It is particularly critical that children and youth are participating in sport and active recreation. Early development of fitness, skills and attitudes encourage lifelong participation and better physical and mental health. The delivery of physical education and sport in the school system needs to be improved to provide quality daily physical education to every student and unrestricted opportunity for participation in school-based sport. Community based sport and recreation must identify and remove barriers to participation for residents of all ages.

The current governmental fiscal arguments for reduced spending on sport facilities and programs are not supported by a long-term financial analysis of the true costs of an inactive population. Expenditures in health care, social services and justice are all reduced by having an increasingly active population. The multiplier effect also indicates that investment by government is more than returned by the community participants in sport and active recreation

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# **Benefits of Investing in Sport**

## **Introduction**

The benefits of participating in sport and active recreation are wide-ranging and most are available to everyone, regardless of age or ability. Research has shown benefits to an individual's current physical and mental health, their future health and their perceived quality of life. Social benefits of active communities include reduced adverse behaviour(s) among youth, lower medical and social costs coupled with job opportunities in sport, recreation and support services, and greater social cohesion and integration of people into the community.

## **1. Personal Health Impacts**

Physical inactivity in Canada is increasing at the same time that health care costs are skyrocketing. In 1999, the direct health-care costs of physical inactivity totalled \$2.1 billion, and approximately 25% of the total health-care costs of diseases are linked to physical inactivity. If 40% of the Canadian population became involved in regular physical activity, the net savings to health care alone would be \$6.5 million per day (Manitoba Sport Federation, undated). An investment in sport will lead to a healthier population and reduce the demands on the health care system.

### **General Health**

Research has shown that participation in sport has broad beneficial effects on physical and mental health. Sports participants tend to have significantly lower body mass index values, lower blood pressures, and lower resting pulse rates as well as better self-perceived health than members of the general population (Lamb et al, 1991). A person's level of physical activity is positively related to general well-being, lower levels of anxiety and depression, and positive moods. The relationship is particularly strong for women and persons over 40 years of age (Stephens, 1988). Establishing sport competition goals in particular, can motivate adults to remain physically active. Setting goals and achieving realistic objectives can lead to feelings of competence and personal responsibility (Olsen, 1992; Grove, 1984).

### **Mortality**

Participation in sport and active recreation can have a positive effect on life expectancy. Katzmaryk et al (2000) estimated that over 10% of deaths in Canada could be attributed to the negative effects of inadequate physical activity. This represents over 21,000 deaths from diseases affecting the cardiovascular system, cancer and Type II diabetes. Research indicates that risk factors for cardiovascular disease, including obesity, hypertension, and elevated blood cholesterol levels, develop during childhood and are attenuated by increased physical activity (Tremblay & Willms, 1999).

The prevalence of childhood obesity in Canada has tripled from 1981 to 1996 (Tremblay & Willms, 2000). Obesity during childhood increases the risk of adult obesity, with 40% of obese seven-year-olds and 70% of obese adolescents becoming obese adults (Mossberg, 1989). Peeters et al (2003) followed several thousand people for 42 years and

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found significantly reduced life expectancies for adults who were overweight or obese at 40 years of age.

Regular moderate sports-playing increases life expectancy, while initially sedentary men and women who started in moderately vigorous sports or other physical activity had a lower risk of death than those who remained inactive (Paffenbarger et al, 1986; 1993; (Gregg et al, 2003). Death rates in sedentary individuals are approximately twice as high as for physically active persons (Blair, 1993). Blair also states that beginning moderately vigorous sports is as important to risk reduction as stopping smoking.

Andersen et al (2000) showed that physical activity is inversely associated with mortality in men and women in all age groups (20-93 year old subjects). Interestingly, sport participants experienced reduced mortality risks of 53% (women) and 37% (men) when compared with moderately and highly physically active people in this study. Clearly, sport provided the greatest benefit to men and women of all ages.

### **Cardiovascular Disease and Stroke**

Not surprisingly, regular involvement in sport and active recreation has a great impact on the cardiovascular systems of participants. Moderate to brisk physical activity is associated with lower rates of heart disease and stroke in men both with and without pre-existing heart disease (Wannamethee & Shaper, 1992). Men who were more active also had a significantly lower risk of stroke than did their less active counterparts. Combined high intensity strength and aerobic training significantly enhanced the quality of life for individuals with congestive heart failure (Swank et al, 2002).

Women also benefit from increased physical activity. The risk of having a heart attack was reduced by 50% among post-menopausal women who partook in modest physical activity (Lemaitre et al, 1995). Increasing physical activity was also strongly associated with reduced risk of stroke (Hu et al, 2000), with brisk or striding walking pace was clearly associated with lower risk compared with average or casual pace walking.

Regular physical activity significantly decreases blood pressure levels in both borderline hypertensive, and hypertensive, men and women (Fagard & Tipton, 1994). This effect was greater for those who exercised every day as opposed to only three times per week, and was similar to the effects achieved with drug therapy.

The total cost of heart disease and stroke to the Canadian economy was approximately \$18.5 billion – more than any other disease (in 1998) (Health Canada, 1998).

### **Diabetes**

Increased physical activity has a tremendous impact on the development and course of diabetes. Researchers have concluded that increased physical activity appears to offer the greatest potential benefit in the primary prevention of Type II diabetes, particularly for those who have one or more known risk factors for the disease (Manson et al, 1991; Gudat et al, 1994; Canadian Fitness and Lifestyle Institute, 1995). Regular lifetime

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activity was one of the characteristics of diabetic patients with unusually long survival and few diabetic complications, while low physical activity levels were associated with the presence of all complications (Giacca et al, 1994).

### **Cancer**

The effect of physical activity on the incidence of cancer is quite variable, with results depending on the type of cancer. Research has demonstrated that physical activity decreases the risks of colon cancer (especially in men) (Sternfeld, 1992) and breast and reproductive cancer in women (Blair et al, 1992). Women who have been active throughout their lives, as well as women who start to be physically active, significantly reduce their risk of breast cancer (Friedenreich, 2001). Women who were college athletes reported a lower lifetime prevalence of breast cancers and cancers of the reproductive system, and lower prevalence of diseases affecting the breast and reproductive system than women who were not college athletes (Frich et al, 1987).

### **Asthma and Chronic Diseases**

Sport and physical activity can benefit children and youth suffering from a variety of physical ailments. Long term, regular physical exercise was effective in reducing asthmatic symptoms, frequency of hospitalization and use of medication by children 5-14 years old (Szentagothai et al, 1987). Physicians should be prescribing sport and exercise programs to improve the psychosocial development and quality of life for children with cystic fibrosis, congenital heart disease, juvenile rheumatoid arthritis and asthma, to allow them to reach their potential (Goldberg, 1990).

### **Osteoporosis**

The development and maintenance of sufficient bone density to prevent osteoporosis is a particular concern for girls and women. Prolonged exercise has been found to increase bone density, not only in international class athletes, but also in ordinary athletes and exercising control subjects (Panush, 1994). Women who participated in organized sport and fitness programs as children have significantly higher bone densities as adults than women who were not active as children (McCulloch et al, 1990).

The national cost of treating all fractures associated with osteoporosis in Canada was estimated at \$250-300 million in 1988 (Health and Welfare Canada, 1988). Young women who increase their level of physical activity and calcium intake by a modest amount can reduce the risk of osteoporosis at age 70 by almost one-third. The resulting reduction in hip fractures due to osteoporosis through increased physical activity and calcium supplementation could result in substantial savings (Osteoporosis Society of Canada, 1992 March).

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### **Special Populations**

The benefits of sport and active recreation extend to the physically and mentally challenged as well. Sport participation among individuals who are physically challenged promotes health, physical appearance, and coordination (Brasile et al, 1991). Greenwood et al. (1990) found that playing tennis resulted in significant reductions in depression among individuals with a physical disability. Modified judo practice was shown to improve physical fitness, developmental skills, fine and gross motor skills, and psychosocial attitude in a study involving children who were blind and developmentally delayed (Gleser et al, 1992).

Studies indicate that disabled and wheelchair athletes have higher self-esteem and more educational, occupational, and athletic aspirations, when compared to those who are physically disabled and non-athletic (Hopper & Santomier, 1985). They also exhibited greater life satisfaction and happiness, are more externalized, and attain more education than non-athletes (Valliant et al, 1985). Participation in sport also significantly increases acceptance of disability (Sherrill & Rainbolt, 1988).

Sport has been shown to help emotionally disturbed adolescents become more confident, more expressive, and more independent and autonomous (Dozier et al, 1978). Sport also helped them feel more self confident and more capable of making new friends.

## **2. Development of Children & Youth**

With the increasing inactivity of children and youth come the increasing challenges to help them develop good academic, physical, psychological and social skills. “If the physical, psychological and social benefits available through sport are to occur, they must be purposely planned, structured and taught as well as positively reinforced” (Weiss & Gould, 1984). Parents in Alberta report that more than half of children and youth (5-17) are not active enough for optimal growth and development (CFLRI, 2001). Only 25% of these students received daily physical education in their schools and only 36% reported participating in organized activities after school. Participation in sport and vigorous physical activity during a childhood is essential to optimal physical, psychological and social development. An investment in sport is an investment in all facets of the development of our children and youth.

### **Physical**

A child’s development of gross motor skills, normal bone and muscle structure and adequate strength, cardiovascular function and flexibility requires regular physical activity. Between the ages of nine to twelve, children are developmentally ready to acquire fundamental movement skills that are the cornerstones of all athletic development (Balyi and Hamilton, 1995; Rushall; 1998; Viru et al., 1998). Youth strength training programs increase the muscular strength of children and adolescents, enhance motor fitness skills (*e.g.*, sprinting and jumping) and may also decrease the incidence of some sports injuries by increasing the strength of tendons, ligaments and bone (ACSM, 1998).

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Data from a national survey of Icelandic adolescents concluded that club sport participation provided physiological benefits (Vilhjalmsson & Thorlindsson, 1992).

### **Academic**

Studies replicated across Canada showed that students who were involved in physical activity programs had better self-concepts and were academically superior to children who were not active (Robbins, 1992). Children who participated in 5 hours of physical activity a week had significantly higher marks in academic programs than children who did not participate in physical activity.

### **Social**

Evidence suggests that elementary school children competent in motor skills attain greater social success and status than the less competent, and that leadership and peer acceptance is related to proficiency in motor skills (Evans & Roberts, 1987). A study of fourth and fifth graders showed that sport has the potential of developing pro-social behaviour with children, (particularly females) like courage, achievement motivation, independence, perseverance, and positive interpersonal behaviour such as generosity, fairness and cooperativeness (Kleiber & Roberts, 1981).

Sport also fosters desirable values as well as social interaction as long as winning is kept in perspective and the emphasis is on a positive, enjoyable youth sport experience which facilitates the development of desirable skills and behavioural practices for all participants (Wankel & Berger, 1991).

### **Psychological**

Ulrich (1987) suggested that lack of success in motor activities at young ages may in turn have a significant impact on the motivation to participate in physical activities at later ages. Those who have more prior experiences with sports and physical activity at 15 years of age have a more positive view of their body and capabilities in sport and a more positive attitude toward fitness activities at 30 years of age; males more so than females (Engstrom, 1991).

Youth involved in sports demonstrate greater levels of perceived physical competence compared to those who are not involved (Feltz & Petlichkoff, 1983). In a well designed sport program, children can gain strong task oriented skills, develop self confidence, become more autonomous, and develop feelings of self-worth (Coop & Rotella, 1991; Canadian Fitness and Lifestyle Institute, 1995). Among young people, high levels of fitness are associated with increased self-esteem (Guzman, 1992).

## **3. Quality of Life Benefits**

Access to sport and active recreation programs and facilities are critical to an individual's quality of life. A survey of Toronto, Montreal and Vancouver residents showed a strong relationship between a city's recreational amenities and whether or not residents found

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happiness in their city; thus recreation is important to urban well-being and personal satisfaction (Muller, 1990 June). Teenagers generally report that involvement in sports, games, art, music performance, and hobbies are the most demanding and enjoyable activities in their lives, whether done in school or out of school (Csikszentmihalyi & Kleiber, 1991; Vilhjalmsson & Thorlindsson, 1992).

### **4. Preventative Benefits**

Participation in sport and physical activity is correlated with several positive lifestyle choices. More than 80% of Canadians between 10 and 24 years of age who are active have never smoked (Stephens & Craig, 1990). Adolescents involved in club and group sport smoke and drink alcohol less than non-sport participants (Vilhjalmsson & Thorlindsson, 1992), with higher levels of fitness associated with a decline in smoking and drinking behaviour (Guzman, 1992). Girls who are involved in sports are 92% less likely to use drugs than girls who do not participate in sports, and 80% less likely to have an unwanted pregnancy (Institute for Athletics and Education, 1993). Montelpare et al (1993) suggested that "encouraging adolescents to become involved with demanding physical activity could be an effective strategy to decrease drug use."

Research on the relationship of athletic involvement and delinquency rates has generally indicated that athletes are less likely to be involved in delinquent behaviour. This relationship has been found to be strongest for elementary and high school athletes of lower socioeconomic class (Donnelly, 1981; Wankel and Berger, 1991). High quality sport programs in public housing locations could significantly reduce the incidence of behavioural and emotional disorders in these children and youth (Offord et al, 1989).

The benefits of recreational sport opportunities for young offenders include enhanced self-esteem, development of self-awareness, more disciplined attitude, greater awareness of health and hygiene, gains in confidence and peer group socialization (Crompton, 1993). The availability of summer sports camps for children and community sport programs was correlated with a reduction in crime rates within those communities. There were also increased levels of happiness, reductions in stress and anxiety, alertness, enjoyment, greater levels of involvement in physical activities as well as more positive perceptions of leisure and attitudes towards police (Searle et al, 1989; 1994; Trust for Public Land, 1994; Guardian Unlimited - January 13, 2003).

### **5. Societal Benefits**

Participation in sport and active recreation can bring diverse social groups together and improve the social cohesion and inclusion of minority groups in other settings. Research on soccer teams at the community level has indicated that assimilation of ethnic groups into the mainstream society may occur when the team represents diverse ethnic groups (McKay, 1975; Pooley, 1976). Ethnic groups have used sport as a means of coping with urban life, and to also help develop and grow communities (Lewis, 1976). Sport is considered to be valuable in teaching self-discipline, promoting the development of fair play and fostering authority and good citizenship (Spreitzer & Snyder, 1975).

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Eighty-six percent of respondents to a 1993 survey at the Canada Games agreed that "sport unites Canadians and makes them proud of their country" (Manitoba Sport Federation, undated).

### **6. Financial Impact of Sport**

Sport and active recreation have an enormous direct and indirect financial impact on every community. Money is invested directly in facilities, equipment, memberships, and competition, and indirectly through volunteering, watching and support services. In 1986, the Sport and Fitness industry contributed \$5.6 billion to the Canadian economy (Ontario Ministry of Tourism and Recreation, 1991).

An Edmonton Sport Council study reported that over half a billion dollars was spent on sport and active recreation in Edmonton in 2000 (Berrett, 2001). Specifically the study found:

- \$347 million total gross Private Household Consumption (\$1,455 per household).
- \$ 93 million Balance of Trade.
- \$ 32 million in preparatory spending associated with the 2001 World Championships in Athletics and World Triathlon 2001 ('one-time' event funding).
- \$ 21 million in provincial expenditures.
- \$ 20 million in spending by public educational institutions.
- \$ 14 million in net municipal spending.
- \$ 6.7 million in private investment.
- \$ 6.2 million in post secondary institutional spending.

The estimated impact on economic output, wages, and employment for the Edmonton economy was found to be:

- \$320 million overall Gross Domestic Product (value added) impact.
- \$213 million total impact on wages and salaries.
- 7,360 person years of employment effect.

For the province of Alberta, the impact on economic output, wages, and employment was found to create an additional:

- \$104 million Gross Domestic Product impact.
- \$ 48 million impact on wages and salaries.
- 1,259 person years of employment effect.

In addition, the study found that following can be attributed to amateur sport and active recreation:

- 0.98% of greater Edmonton's gross domestic product, which is larger than Edmonton's GDP attributed to agriculture (\$292 million).
- 1.5% of Edmonton's employment, which exceeds the number of employees reported for the Telus Corporation in Edmonton (5,034) or the Public School Board (7,125).

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- \$28 million in visitor spending from 370,000 sport tourist visitors associated with 101 Edmonton sport groups.
- \$73 million contribution through 4.4 million hours of volunteer time at market wages (not included in the formal economic analysis).
- Twenty-three (23) times the municipal government expenditure.

The value of various non-economic benefits associated with participation in amateur sport, such as increased personal health, social or community development, and reductions in crime rates for participants were not accounted for in the study.

In Ontario almost 400,000 people volunteer for sport, fitness, and recreation organizations, committing 45 million hours annually with an estimated value of over half a billion dollars (Abbey-Livingston, 1989). Direct and indirect payment to Saskatchewan's labour in sport and recreation is estimated at \$200 million. This corresponds to approximately 13,400 person years of employment annually (Saskatchewan Sport Inc, 1991).

The Local Economic Impact of Public Recreation in the City of Burlington showed that sport groups' expenditures contributed over \$2 million to the community. Hotel revenue contributes yet another \$400,000 thereby bringing the financial return to approximately 1.5 times the city's original investment of \$1 million in 1992 (Sailor et al, 1993). In Europe, governments also receive substantially greater returns in taxation than they make available in sport expenditure (Jones, 1990).

Major sport events provide a significant financial benefit to the host community. Organizers of the 1991 Canada Winter Games in Prince Edward Island projected that \$49.7 million would be added to the economy, visitors to the province would spend \$11 million and the games would create 175 direct and 432 indirect new jobs (Business Institute, 1990). The 1996 World Figure Skating Championships in Edmonton was projected to generate \$10 million in new revenue with a multiple effect of \$43 million (Alberta Sport, Recreation, Parks and Wildlife Foundation, 1995).

Sport and active recreation also impact workplace costs. Recent studies reported significant decreases in absenteeism related to the fitness level of participants (Shephard, 1992). Another study found reduced absenteeism for employees who participated on a regular basis in a fitness program as compared to non-participants. Productivity has been shown to increase plus large economic gains were realized because fitness program adherents showed less turnover than non-participants (Cox et al, 1991). A Los Angeles study of fire fighters showed significant decreases in disabling injuries, and reduced workers' compensation costs for those participating in fitness activities (Cox et al, 1991).

Increases in the price of residential property are positively affected by the quality of recreation facilities and negatively affected by the distance from them. Proximity to open space improves the visual environment and the quality of life. These two positive attributes result in higher prices for homes and land (Colorado Parks and Recreation Association, 1993).

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