



# Physiotherapy

## briefings for physicians



Spring 2004

### Physiotherapy in Preventing Falls Among Older People

Falling is an important and costly health care issue in Canada. Falls are the leading cause of injury and the sixth leading cause of death for seniors. Canadians spend about \$3 billion a year on medical care for fall-related injuries to seniors. (1)

In British Columbia, one in three older people in the community, and one in two in institutions, fall every year. Of these, about 15-20% require some medical attention as a result. Hip fractures are the most costly injury. (1)

About 900 Saskatchewan seniors fracture a hip each year. Three-quarters of these seniors are women. (2)

#### Multifactorial Causes

Research has shown that falls can be caused by a variety of factors or by a combination of factors, including poor balance, side effects of medication, impaired vision, reduced physical mobility and environmental hazards. There are more than 20 risk factors linked to falls. Physiotherapists help older adults prevent falls and also provide post-injury rehabilitation in the event of a fall.

#### Prevention

According to a Cochrane Library systematic review, interventions likely to be beneficial in preventing falls include a program of muscle strengthening and balance retraining, individually prescribed at home by a trained health professional. (3)

A 2004 systematic review of 40 randomized clinical trials showed that a multifactorial falls risk assessment and management program was

the most effective component of a falls prevention program; followed by exercise as the next most effective component. (4)

In a 2003 systematic review of evidence-based guidelines for falls prevention, strong evidence was found for balance exercises, and for a home physiotherapy program for women over 80 regardless of their risk factor status. (5) A study recently published in the BC Medical Journal showed that a 12-week program designed to improve lower-body function was also able to improve the static balance and overall well-being of women age 70-86. (6)

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*"I can't think of any other physiotherapy intervention (preventing falls in the elderly) in which the evidence so clearly tells us that we can prevent death and loss of independence for a growing proportion of our population"*

— Cathy Arnold,  
BSc (PT), MSc  
Assistant Professor,  
University of Saskatchewan

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## **Resistance training program improves strength, gait and balance in older adults**

In a randomized clinical trial of 44 older adults, a progressive resistance training program of 10 weeks' duration produced greater strength, gait and balance gains than did a flexibility exercise program of the same length. Participants in the study were generally healthy and were randomly assigned to a community based progressive resistance program or a flexibility program. Both programs consisted of two one-hour classes per week for 10 weeks and were led by fitness instructors trained by a physiotherapist in the specifics of the programs. After 10 weeks, all participants were assessed by a senior physiotherapist on quadriceps and biceps strength, 10m fast walk, and balance. Participants in the progressive resistance training group showed statistically significant improvements in all measurements compared to the flexibility group.

*Aust J Physiother.* 2002;48(3):215-9

## **Physiotherapy program improves balance in seniors over 75**

94 adults age 75 and over participated in a clinical trial in which they were randomly assigned to a group receiving balance training or to a control group. The balance training group participated in 12 individualized sessions over 4-6 weeks, led by a physiotherapist. Participants were assessed using the Berg Balance Scale and the Dynamic Gait Index. The experimental group improved significantly more on both measures than the control group. A short individualized exercise program can improve functional balance in people aged 75 and older.

*Clin Rehabil.* 2001 Dec;15(6):624-36

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An evidence briefing from the UK Chartered Society of Physiotherapy reports, "overall, available evidence strongly supports the use of physiotherapists in fall prevention, either as part of a multi-factorial fall prevention team, or in higher risk groups, by therapy alone." (7)

## **Rehabilitation**

In November 2003 the Saskatchewan Health Quality Council published the results of a study of 2,677 Saskatchewan residents over 65 who fractured their hips between 1997 and 1999. The study tracked the treatment they received and their health outcomes.

54% of patients had their fracture treated by reduction, while 30% required a total hip replacement. The median hospital stay was 10 days.

Patients who received post-fracture rehabilitation (in a rehab centre, special-care home or through home care) had double the survival rate of patients who did not receive rehab services.

The British Columbia Ministry of Health Services is currently compiling an inventory of falls prevention initiatives for older adults.

## **Screening for Risk Factors**

Every day, physiotherapists across Canada assess and treat older adults for a wide range of physical challenges. Many of these people are at increased risk of falling due to mobility impairments, a stroke, Parkinson's disease or dizziness. Regardless of whether or not an older person has had a fall, a physiotherapist will assess the person's postural stability, muscular strength and risk of falling, and offer the appropriate physiotherapy treatment and exercise prescription.

Working together with physicians and occupational therapists, physiotherapists can help reduce falls among older people and prevent the medical, emotional and economic consequences.

## **References:**

1. BC Interior Health Authority website, September 22, 2003
2. "First Three Months Critical", Saskatchewan Health Quality Council, November 2003. [www.hqc.sk.ca](http://www.hqc.sk.ca)
3. *The Cochrane Library*, issue 3, 2001. Oxford: Update Software
4. *BMJ* 2004;328:680-3
5. *Gerontology*, 2003 Mar-Apr;49(2):93-116
6. *BC Medical Journal*, 2003 November;45(9):449-455
7. *Evidence Briefing: Effectiveness of falls prevention and rehabilitation strategies in older people: implications for physiotherapy.* Chartered Society of Physiotherapy, UK, 2001.

## **Find a Physiotherapist!**

- **In BC:** Check the Physiotherapy Association of BC directory of physiotherapists (mailed to all family physicians each summer) or search online at [www.bcphysio.org](http://www.bcphysio.org).
- **In Saskatchewan:** Consult the Directory of Physiotherapy Services or contact the Saskatchewan Physiotherapy Association at 1-888-606-7265.

## Older Canadians are Losing Their Physical Mobility

Canadians age 55 and over represent a growing proportion of our population, and the age group that is most vulnerable to diseases and conditions that can lead to loss of physical mobility.

In the Canadian Physiotherapy Association's 2001 nationwide poll about physical mobility, Canadians age 55 and over were asked about their perceptions of their physical mobility, their actual ability to move and do specific activities and personal initiatives to maintain mobility in the future.

The poll showed that only half of older adults are very satisfied with their current level of physical mobility. Only 4 out of 10 are very satisfied with the strength of their back, torso, arms and legs, and just one third of older adults are very satisfied with the flexibility of their joints and say they can do physical activity without becoming exhausted or short of breath.

Two thirds (66%) of older adults feel that their mobility is worse today than it was 10 years ago. Only 10% think their current mobility level is better, and 23% believe it is about the same.

A significant proportion of Canadians age 55 and over cannot easily complete tasks that require physical mobility. At least half of them can't climb several flights of stairs or engage in vigorous activity. Older women are significantly more likely to have difficulty with these tasks than older men.

### Percentage of older adults (age 55 plus) who cannot complete each task easily

	All	Men	Women
Vigorous daily activities*	83%	77%	88%
Climb several flights of stairs	55%	55%	65%
Bend, kneel or stoop	44%	39%	47%
Walk more than one kilometre	37%	28%	45%
Moderate daily activities**	28%	17%	36%
Lift or carry groceries	28%	17%	37%
Walk several blocks	28%	15%	25%
Climb one flight of stairs	21%	18%	37%
Walk one block	14%	9%	18%
Bathe or dress themselves	10%	5%	12%

\*Vigorous activity examples: Running, lifting heavy objects or participating in strenuous sports.

\*\*Moderate activity examples: Moving a table, pushing a vacuum cleaner, bowling or playing golf.

The joint CPA/Ipsos-Reid poll, conducted in November 2001, surveyed 2000 Canadians regarding physical mobility. The results of this poll are accurate +/- 2.2%, 19 times out of 20.

### Multiple intervention program reduces incidence of falls

A team of researchers at the University of Melbourne School of Physiotherapy conducted a randomized clinical trial of the effectiveness of a multiple intervention program in reducing falls in a sub-acute hospital. 626 men and women with an average age of 80 years participated in the trial. The intervention group received a falls risk alert card with information brochure, exercise program, education program and hip protectors, while the control group did not. Participants in the intervention group experienced 30% fewer falls than participants in the control group; a significant difference that was most obvious after 45 days of observation. In addition, 28% fewer falls resulted in injury for the intervention group. *BMJ, 2004 Mar 20;328(7441):653-4*

### Stronger back muscles reduce incidence of vertebral fractures in postmenopausal women

The long-term protective effect of stronger back muscles on the spine was determined in 50 healthy postmenopausal women, aged 58-75 years, 8 years after they had completed a two-year randomized, controlled trial. 27 participants had performed progressive, resistive back-strengthening exercises for two years and 23 had not. At 8 years after completing the trial, mean back extensor strength was still significantly greater in the exercise group. Moreover, the incidence of vertebral compression fractures was 1.6% in the exercise group, compared to 4.3% in the control group, a statistically significant difference.

*Bone, 2002 Jun;30(6):836-41*

The American Geriatric Society Clinical Practice Guidelines recommend that in the "routine care of older persons", clinicians ask about fall history annually, conduct a gait and balance screening for those patients who report a single fall, and refer patients who have difficulty to a physical or occupational therapist.

[www.americangeriatrics.org/products/positionpapers/abstractPF.shtml](http://www.americangeriatrics.org/products/positionpapers/abstractPF.shtml)



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### Physiotherapy Association of British Columbia

402 - 1755 West Broadway,  
Vancouver, BC V6J 4S5  
Phone 604-736-5130 or  
toll-free 888-330-3999  
pabc@bcphysio.org www.bcphysio.org


### Saskatchewan Physiotherapy Association

118 - 1121 College Drive,  
Saskatoon, SK S7N 0W3  
Phone 306-955-7265 or  
toll-free 888-606-7265  
info@saskphysio.org www.saskphysio.org

### Patients Say Physiotherapy is Worth It

*Satisfaction with physiotherapy treatment is very high: 83% of respondents to a BC-wide poll in October 2001 said they were satisfied with their physiotherapy treatment and outcomes. Over 90% say the reason for their satisfaction is that physiotherapy resolved the problem or relieved their pain, or that the physiotherapist provided helpful techniques and exercises.*

*Source: MarkTrend Research Inc.,  
Physiotherapy Public Opinion Survey, 2001.*



## Paying for Physiotherapy

### British Columbia

On January 1, 2002, physiotherapy was de-listed from the British Columbia Medical Services Plan, meaning that the considerable majority of people in BC must pay for physiotherapy through extended health benefits, their own money or a combination of the two. For people with low incomes who are on premium assistance, MSP will contribute up to \$23 per visit for up to 10 total visits to physiotherapy. School-age children in the At-Home Program are also funded for 24 physiotherapy treatments every six months.

About two-thirds of BC adults have extended health benefits through a group insurance plan. These plans tend to cover a varying percentage of the cost of treatment, with an annual ceiling amount. Workers' Compensation Board and the Insurance Corporation of BC still provide coverage for physiotherapy services.

### Saskatchewan

Physiotherapy provided in hospitals, special care homes, community agencies or by private clinics that have a contract with the health regions are covered by the provincial medical system. Services provided in private physiotherapy clinics that aren't under contract with a Regional Health Authority are not covered.

Many Saskatchewan residents have extended health benefits through a group insurance plan. These plans tend to cover 50-100% of the cost of physiotherapy treatment, with an annual ceiling amount. The Saskatchewan Workers' Compensation Board and Saskatchewan Government Insurance also provide coverage for physiotherapy services.

### What It Costs

On average, an initial visit to a physiotherapist in BC or Saskatchewan costs \$45-65. In this initial visit, the physiotherapist takes the patient's history, assesses the current problem, makes a physical examination, provides a physical diagnosis, outlines a treatment protocol and provides the first treatment. Subsequent treatment visits cost, on average, \$30-55. Fees vary with the duration of treatment and other factors.



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