

# NEWSLETTER

WINTER 2003 VOLUME 1 ISSUE 2

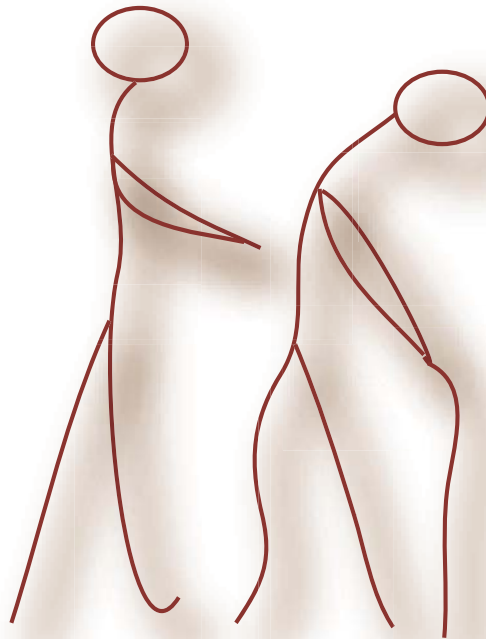
OSTEOPOROSIS EDITION

Healthy Bones and  
Healthy Joints...Keep  
**Canada Moving**



It's Your "Move"...

It's Your "Choice"





It's Your "Move"...

It's Your "Choice"

# Healthy Bones and Healthy Joints...Keep Canada Moving

Volume 1 Issue 2  
Winter 2003

## The Bone and Joint Decade - 2000 - 2010 - for Prevention and Treatment of Musculoskeletal Disorders

### INSIDE THIS ISSUE - Osteoporosis

BJD Press Release	2
Update from Dr. James Waddell	4
Gilding the BMD Gold Standard bone geometry might better predict hip fractures	5
CaMos (Canadian Multi-Centre Osteoporosis Study)	6
Inter-University Graduate Program Brings Excellent Opportunity	6
Tools For Living Well	7
Tools For Living Well - Devices	8
Osteoporosis PT management	9
NIH National Resource Center Links People to Resources on Osteoporosis and Related Bone Diseases	10
Nova Scotia Osteoporosis Initiatives	11
Alberta Focus on Bone and Joint Health	12
COA Osteoporosis Symposium: October 4, 2003 - A brief overview	13
Our Next Step in Managing Osteoporosis	14
Lunenburg - Queens Falls Prevention Program	15
The Surgeon General's Report on Osteoporosis and Bone Health	16
Using Cochrane Musculoskeletal Group systematic reviews to make health care decisions about osteoporosis	17
Bone and Joint Decade 2000-2010 Infoletter 32	18
Activities, Upcoming Events and Updates	19



FOR IMMEDIATE RELEASE  
27 October 2003

### PRESS RELEASE

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*Urgent need to address the impact of musculoskeletal conditions World Health Organization [WHO] report reveals the true extent of musculoskeletal disease and the impact that these conditions have on society*

27 October 2003, LUND,  
SWEDEN -

The WHO identifies the urgent need to address the impact of musculoskeletal conditions across the globe in an extensive report released today. Musculoskeletal conditions are the most frequent cause of disability severely affecting individuals' ability to carry out their activities of daily living. The problem is just as important in developing as in developed countries. Musculoskeletal conditions are amongst the most costly illnesses because of the long-term care and support they require, and they consume on average 3% of total GDP in developed countries. With an increasing prevalence in both developed and developing nations, the financial and healthcare burdens are set to escalate dramatically.

"Longer life expectancy with an increasing number of elderly in all population groups have led to an escalating prevalence of musculoskeletal diseases

worldwide," said Professor Anthony Woolf, Professor of Rheumatology and lead investigator, UK. "This will continue to increase, particularly in developing countries, with the harmful changes in lifestyle associated with urbanization and motorization. This report is the first attempt to look at the effect that these conditions have on societies throughout the world, and the results will inform the debate on health priorities and the development of preventative strategies for musculoskeletal conditions."

A WHO Scientific Group of experts has been working over the last three years in collaboration with the Bone and Joint Decade to map out the burden of the most prominent musculoskeletal conditions, with the long-term aim of helping prepare nations for the increase in disability brought about by musculoskeletal conditions. In particular the Group has gathered data on the incidence and prevalence of rheumatoid arthritis,

osteoarthritis, osteoporosis, major limb trauma and spinal disorders. The Group also considered the severity and course of these conditions, along with their economic impact.

"Although the diseases that kill attract much of the public's attention, musculoskeletal conditions are the major cause of morbidity throughout the world, having a substantial influence on health and quality of life, and inflicting an enormous burden of cost on health systems," said Dr. Gro Harlem Brundtland, then Director General, WHO, at the launch meeting of the project. "The ongoing work of the WHO and the Bone and Joint Decade aim to highlight the situation and encourage action to bring relief and hope to the millions who suffer from musculoskeletal conditions."

Musculoskeletal conditions are common in all regions of the world and encompass about 150 diseases and syndromes affecting children and adults, which

*continued on page 3*

continued from page 2

*A dramatic increase in suffering caused by musculoskeletal conditions is imminent and will result in severe financial pressures for health services around the world.*

are usually associated with pain and loss of physical function. The most common conditions, and those upon which the report focuses, include joint diseases rheumatoid arthritis and osteoarthritis, osteoporosis, spinal disorders (including low back pain), and conditions arising from severe trauma.

Within a decade of onset, rheumatoid arthritis leads to work disability, defined as a total cessation of employment, in no less than 51% of patients and maybe as high as 59%. 80% of patients with osteoarthritis have some degree of limitation of movement, and 25% cannot perform their major daily activities of life.

In 1990, a worldwide estimate of 1.7 million hip fractures occurred as a result of osteoporosis. This number is expected to exceed 6 million by 2050. Low back pain has reached epidemic proportions being reported by about 80% of people at some time in their life.

In the developed world, where these conditions are already the most frequent cause of physical disability, ageing of the most populous demographic groups will further increase the burden these conditions impose. In the developing world, successful care of childhood and communicable diseases and an increase in road traffic accidents is shifting the burden to musculoskeletal and other non-communicable

conditions. A dramatic increase in suffering caused by musculoskeletal conditions is imminent and will result in severe financial pressures for health services around the world.

Total costs of musculoskeletal disease in the US in 2000 have been calculated at US\$254 billion. In developing countries, the costs for injuries care is estimated at US\$100 billion, a figure nearly twice that of total foreign aid for these nations.

“The enormous impact of these conditions requires urgent action” said Professor Lars Lidgren, chair of the Bone and Joint Decade. “This has already been called for by Kofi Annan, UN Secretary-General, when endorsing the Bone and Joint Decade who stated that there are effective ways to prevent and treat these disabling disorders, but we must act on them now.”

- ENDS -

Please also refer to the press statement released by the World Health Organisation, contact their press office for a copy - Fadéla Chaibf ([chaibf@who.int](mailto:chaibf@who.int)) or Gilbert Padey ([padey@who.int](mailto:padey@who.int)) Telephone: + 41 22 791 2544

“The Burden of Musculoskeletal Conditions at the Start of the New Millennium” is the result of three years of work by an international scientific group of experts. It was undertaken as a collaboration between the WHO and the Bone and Joint Decade. It is published

in the WHO Technical Report Series.

An electronic version of the report is available at: <http://www.who.int/ncd/cra/>

For additional information on ordering The Burden of Musculoskeletal Conditions at the Start of the New Millennium (TRS 919) or other WHO publications, contact: Marketing and Dissemination, World Health Organization, 20 avenue Appia, 1211 Geneva 27, Switzerland (tel.: +41 22 791 2476; fax: +41 22 791 4857; email: [bookorders@who.int](mailto:bookorders@who.int))

THE BONE AND JOINT DECADE is an independent global non-profit organization whose mission is to improve the health-related quality of life for people affected by musculoskeletal disorders worldwide. It is the umbrella organization by which National Action Networks, professional medical societies, patient advocacy groups, governments, industry and researchers partner to effect change by: (1) Raising awareness of the growing burden of musculoskeletal disorders on society; (2) Empowering patients to participate in their own care; (3) Promoting cost-effective prevention and treatment; and (4) Advancing understanding of musculoskeletal disorders through research to improve prevention and treatment. For more information, visit the web site at [www.boneandjointdecade.org](http://www.boneandjointdecade.org).

## Update from Dr. James Waddell, National Action Network (NAN) Coordinator

**A**t the recent international NAN meeting in Berlin we received updates from around the world. Some of the highlights are:

1. The Bone and Joint Decade has joined with the United Nations in a worldwide campaign to reduce the incidence of death and injury from road traffic accidents. Partnering with the World Bank and other international organizations, a sustained effort will be made to improve pedestrian safety as well as improve medical care for people injured in road traffic accidents. This is a tremendous undertaking particularly in emerging countries where industrialization and mechanization has far out-stripped the capacity of the infrastructure such as roads, traffic controls, etc.
2. Consensus is developing around the best management practice for arthritis patients. This is being led by a group of rheumatologists associated with the Bone and Joint Decade with input from a number of patient advocacy groups and patients themselves. Bone and Joint Decade meetings allow the type of interaction between caregivers, patients and governmental agencies to discuss the issues so that everyone feels they have had an opportunity to influence the outcome.
3. Osteoporosis continues to be a significant and ongoing problem for all parts of the globe. Strategies to reduce the incidence of osteoporosis and treat established cases are being developed in a number of areas under the active sponsorship of the Bone and



Joint Decade. It is anticipated that at the next annual meeting of the Steering Committee with the Coordinators of the National Action Networks from around the world we will develop a consensus

position on osteoporosis in terms of management of osteoporotic fractures, treatment of established osteoporosis without fracture and, most importantly, prevention.

These are just a few of the items that were discussed at the meeting in Berlin. I feel that this type of interaction between the different countries is an essential part of moving ahead with the many facets of musculoskeletal care around the world. I was very pleased and proud to receive on behalf of Dr. Cy Frank of IMHA (Scientific Director for the Institute of Musculoskeletal Health and Arthritis) an award celebrating the private public partnerships that have been developed in musculoskeletal care in Canada. There is no question that we have a leadership role in this area and it was nice to see this recognized by our colleagues from around the world.

James P. Waddell, MD, FRCSC  
Coordinator, Canadian National Action  
Network for the Bone & Joint Decade

*The Bone and Joint Decade has joined with the United Nations in a worldwide campaign to reduce the incidence of death and injury from road traffic accidents.*

## Gilding the BMD Gold Standard bone geometry may better predict hip fractures

by Dennis Jean, Freelance Writer  
for the Institute of Musculoskeletal Health and Arthritis (IMHA)

**T**he high morbidity and mortality associated with osteoporotic hip fractures makes it paramount to accurately predict who is at highest risk - all the more so, since the incidence of hip fractures is expected to double by 2025.

Currently, the gold standard for assessing fracture risk is bone mineral density (BMD), a quantitative measurement derived through dual-energy x-ray absorptiometry (DXA). "The more mass you have, the more strength you have. That's how simplistically we looked at things not too long ago," says McMaster University's Dr. Rick Adachi, who along with principal investigator Jacques Brown at Laval University and post-doc fellow Shawn Davison, is re-evaluating the accuracy of BMD.

Recent clinical trials of drugs that increase BMD (such as bisphosphonates) have revealed that changes in BMD do not reliably predict fracture-reduction rates. Despite their almost uniform anti-fracture efficacy (40-60%), different drugs can have different effects on BMD change (0-8% per year). Further analysis of the data suggests that increases in BMD account for only 15-30% of the reduction in fracture-rate, which means that other important factors are at play.

Bone strength is determined by its "material properties, internal trabecular architecture and overall geometric structure," says Adachi, who is particularly interested in the latter since it can be easily analyzed *in vivo*. Some general principles of bone geometry dictate bone strength: a wider bone is stronger than a narrower bone of equal length,

and a shorter bone is stronger than a longer bone of equal width. To a great degree, bone geometry is shaped by body mass or loading. The main mechanical stresses placed on long bones like the femur, Adachi explains, are "during bending moments. In a long bone undergoing bending or twisting, the strain is lowest at the central axis and increases radially outward to the periosteal surface, where strains are the highest."

From a mechanical-engineering perspective, tubes fracture in two ways when bent beyond tolerance: in a thick-walled tube, a stress crack spreads inward from the outer curvature (convex surface) of the arc; whereas in the thin-walled tube, the wall buckles inward on the inner curvature (concave surface) of the arc.

"Sub-periosteal resorption is unknown in adults," says Adachi, "so bone cannot decrease in diameter. Rather, it's the cortical and trabecular bone tissue that thins with normal aging, from the inside out. If you think of a cross-section of bone as a donut, it's as if the hole in the donut was getting larger and larger."

As a person ages, bone is deposited on the periosteal surface and resorbed from their endosteal surface in an attempt to maintain mechanical integrity. Smaller amounts of periosteal bone apposition can biomechanically offset larger amounts of endosteal resorption, since the mass is being placed further from the central axis of bending.

Thus, long bones become wider as aging progresses and the body continues its attempts

to preserve mechanical sufficiency. But the cortical bone also continues to thin. The mechanical strength of the bone can be accurately predicted by the section modulus, which is defined as the cross-sectional moment of inertia divided by half of the subperiosteal width.

Osteoporosis accelerates this hollowing process until the buckling threshold is rapidly reached. When the cortical thickness approaches a tenth of the bone's radius, the probability of fracture (similar to local buckling in a thin tube) is precipitously increased. The thin wall of bone can no longer withstand bending or twisting and collapses in on itself, especially at the ends of long bones where fractures most often occur.

With funding provided by the Canadian Institutes of Health Research (CIHR), Adachi and his colleagues are set to prove their hypothesis that femoral section modulus and buckling ratio are sensitive predictors of hip fracture. In so doing, the research team is analyzing about 10,000 hip scans gathered by the 1997 Canadian Multi-centre Osteoporosis Study (CaMOs), correlating baseline DXA data with all hip fractures experienced during the subsequent five years.

"My gut feeling is that fracture risk in this study will turn out to be a mix of BMD and bone geometry," says Adachi. If their theory is validated, "we could then input an algorithm into densitometers that would add a bone-geometry figure to the BMD figure, which when combined would give us a more valuable and accurate estimate of fracture risk."

*Osteoporosis accelerates this hollowing process until the buckling threshold is rapidly reached.*

# CaMos

Canadian Multicentre Osteoporosis Study  
Étude Canadienne multicentrique sur l'ostéoporose



by Dr. Alexandra Papaioannou  
Research Director in the Division of  
Geriatric Medicine, McMaster University

It has been obvious for some time that in Canada osteoporosis is a major health problem, which is rapidly growing and

will continue to grow well into the next century. As early as the 1980's, Health Canada realized that fractures were also one of the most important causes of disability in the elderly and as such a huge burden to family and care givers and a serious drain on the health care system. The government's decision to support the Canadian Multicentre Osteoporosis Study (CaMos) emerged from the conviction that a rational, successful program to eliminate or reduce fractures in the elderly depended entirely on a detailed understanding of the dimension of and causes of osteoporosis in Canada.

CaMos is a population-based cohort study of approximately 9500 randomly selected Canadians, residing within 50 km of nine urban centres, from Vancouver to St. John's. Begun in 1995, the cohort, men and women aged 25 to 80+ years old, has contributed extensive baseline data on quality of life, medical history, aspects of nutrition and physical activity, and many other lifestyle habits, as well as hip and spine bone density measures (DXA) and spine x-rays (the last only among those 50+ years old). The cohort members are followed annually. The study,

originally designed to be completed in five years, has been extended a further five years.

We have established that 16% of women and 6% of men age 50 years and older have osteoporosis as defined by the World Health Organization, however, approximately 60% of women and 50% of men in this age range have a decreased bone mineral density and therefore an increased risk to fracture. It has also been found that up to 20% of women and men 50 years and older have a prevalent vertebral deformity and that 2% of women and 1% of men sustain an osteoporotic fracture each year. This means that the 10-year risk of fracturing in people over age 50 years is 20% for women and 10% for men. These fractures are not without long term consequences as evidenced by the fact that those who sustain a fracture have a significant decrease in the quality of life. These findings apply to all Canadians in that no differences were found between the nine CaMos centres across the country in prevalence of osteoporosis or spinal deformity. Incident fracture rate was also found to be the same in all regions of the country.

Our next task is to determine those factors that increase the risk of developing osteoporosis and fracture in Canada. We will then have the information needed to establish effective, safe, affordable methods for osteoporosis and fracture prevention.

## INTER-UNIVERSITY GRADUATE PROGRAM BRINGS EXCELLENT OPPORTUNITY...



Meena Sran is the first graduate student admitted to the *Alberta Provincial CIHR Training Program in Bone and Joint Health* to complete a one-year component of her degree at the University of Calgary. Meena is from the University of British Columbia and is currently a PhD Candidate in the Faculty of Medicine.

In addition to her past research training, Meena brings with her more than eight years of clinical experience as a physiotherapist. In her current position as a physiotherapist in the Osteoporosis Program at the Children's & Women's Health Centre of BC, she is involved in multidisciplinary clinics for new patients, rehabilitation and exercise prescription for individuals with or at high risk for osteoporosis, in addition to educating the public and health care professionals about osteoporosis. Meena has been invited to present nationally and internationally on the role of physical therapy in the prevention and management of osteoporosis and the role of exercise in bone health. She also lectures on Osteoporosis in the School of Rehabilitation Sciences at UBC. On March 2, 2004, Meena will give a one-day course on osteoporosis for rehabilitation professionals at Grace Osteoporosis Centre in Calgary.

While at the University of Calgary, Meena is studying under the guidance of Drs Ron Zernicke and Steve Boyd. "The University of Calgary and the Zernicke lab have provided me with an environment that is very well suited to my training as a clinician-scientist in the area of bone health. I am thankful for the opportunity to train in the Bone and Joint Training Program. The experience and knowledge gained in my year at the University of Calgary will greatly benefit my future career as a clinician-scientist."

For further information on the Alberta Provincial CIHR Training Program in Bone and Joint Health please visit the website at:

[www.boneandjoint-training.ca](http://www.boneandjoint-training.ca)  
or telephone 403.210.9702.

## Tools For Living Well

by Mary Lou Boudreau  
National Project Coordinator, Canadian Occupational Therapy Association

**T**ools for Living Well is a pilot project that brings a new and exciting approach to the important battle to prevent falls among seniors and veterans.

Falls in older adults can have a devastating effect, robbing an active and vital individual of confidence, mobility, independence, and even life. Preventing falls can help seniors and veterans maintain their life styles, allowing them to live in their homes and neighbourhoods longer.

Assistive devices are one way that seniors and veterans can keep themselves safe and active. Using a cane can allow individuals to continue to walk and maintain their leisure and fitness. Bath safety devices, including grab bars, non-slip bath mats both inside and outside the tub, and bath seats can enhance safety and allow seniors continued independence when bathing or showering. Hip protectors can help prevent hip fractures if falls do occur.

To promote the use of assistive devices, we are working with seniors and veterans to approach businesses in their communities to encourage:

□ Retailers to increase the availability and visibility of canes, hip protectors, grab bars, bath/shower seats and non-slip bath mats;

□ Hoteliers to increase the number of guest rooms equipped with grab bars, non-slip mats, and bath seats;  
□ Home Builders to display grab bars in model homes, and to offer them as options to homebuyers.

We are also providing community education, education to business employees and "point of purchase" information to help everyone become more informed consumers.

To date, we have over 30 business sites involved, with more coming on board. Although most are retailers, we also have some hotels and at least one homebuilder involved.

It is our hope that, if the program is successful in our four pilot sites, it will be made more widely available. The pilot project is funded by Health Canada/Veteran's Affairs, Canada Falls Prevention Initiative, and operated by the Canadian Association of Occupational Therapists and the University of Ottawa's Community Health Research Unit.

For more information, see our web link at [otworks.ca](http://otworks.ca) and try our consumer quiz at [http://www.otworks.com/otworks\\_newquize.asp?pageid=778&quizid=12](http://www.otworks.com/otworks_newquize.asp?pageid=778&quizid=12).

*Tools for Living Well is a pilot project that brings a new and exciting approach to the important battle to prevent falls among seniors and veterans.*

Watch our next edition of the Bone and Joint Decade Canada Newsletter for details on the International Bone and Joint Decade Conference to be held in the Fall of 2005.



## Tools For Living Well- Devices

by Mary Lou Boudreau  
National Project Coordinator,  
Canadian Occupation Therapy Association

**C**an you remember life without your television remote control? Have you gotten used to the feeling of safety that comes with putting on your seat belt every time you get in your car?

These items are tools of your daily life, created for your convenience and safety. They are in common, used by people of all ages, and don't create a feeling of self-consciousness or embarrassment when used. Why then do some people consider bathtub grab bars or canes to be symbols of infirmity when, in fact, they are just tools available for us to use for our safety and convenience? Tools like these can prevent falls and the injuries that can result.

One in three persons over the age of 65 experiences a fall each year. Although the costs to the health care system are large - \$2.4 billion annually - the cost to the senior who falls can be even more devastating. Seniors are more likely to be admitted to hospital from an injury as a result of a fall than any other age group. Also, those who fall face a greater risk of permanent institutionalization than those who don't. Preventing falls can keep seniors in their homes, doing the activities they enjoy.

Here are a few tools worth considering that make your life safer and easier:

**Grab Bars:** A grab bar is a bar that firmly attaches to a wall in your bathtub or shower, giving you something to hold on to when entering or leaving the bathtub. Most people need a grab bar placed vertically along the faucet wall of the bathtub to hang on

to when they lean over to turn the water on and off, and to help them step over the side. Another is placed horizontally along the back wall to assist you in rising after sitting in the bathtub. It is particularly important that grab bars be securely screwed into the studs in the wall so that they can safely take your weight.

**Non-slip mats:** It's important to have non-slip mats both inside and outside the bathtub or shower to provide traction for your feet when they are wet.

**Bath or shower seat:** A bath or shower seat can be useful if getting down to sit on the bottom of the tub is difficult or if you tend to get weak or dizzy when standing in the shower. Look for a bath seat with height-adjustable legs and non-skid rubber tips on the feet. A seat with a backrest may be more comfortable. Be sure to check the manufacturer's weight limitations to see if it is the right one for you. A hand-held shower spray is necessary to allow you to direct the water where needed.

**Cane:** A cane can provide you with balance and support if you are unsteady on your feet or have a "bad" (weak) leg. Canes are now available in various colours, patterns and styles allowing users to make a fashion statement while providing them with the confidence to enjoy their lives and independence.

A cane needs to be the correct length, or it may cause shoulder and back pain. The cane should come to the point in your wrist where you wear a wristwatch when you stand with your arms at your side. When walking, always hold the cane on your

strongest side. Always move the cane and the opposite (weaker) leg together. When going up the stairs, take the first step up with your strong leg and then move the cane and the opposite leg together. When going down the stairs, take the first step down with the cane and the weaker leg. Then lower the strong leg to the same step. Useful accessories such as ice picks and hand loops are also available.

**Hip Protectors:** Some people may be particularly vulnerable to injuries if they fall, possibly because of osteoarthritis. Others may have a fear of falling that prevents them from doing the activities that they enjoy. Hip protectors can allow you to continue enjoying independence and an active lifestyle while reducing the risk of hip fracture if you do fall.

There are several styles of hip protectors, including a belt style similar to a small hockey belt and a style that builds thin hip pads into briefs (underwear). The hip pads can be made of specialized foam or plastic that absorbs impact. Whichever type you prefer, it is important that they fit properly and are comfortable when you wear them.

All of these devices are designed for your safety and convenience. Remember, they are tools for your use - tools to help you live well.

*Can you remember life without your television remote control? Have you gotten used to the feeling of safety that comes with putting on your seat belt every time you get in your car?*



## Osteoporosis PT Management

by Carol Miller, Sr. Project Coordinator  
Practice and Policy, Canadian Physiotherapy Association

**T**he Osteoporosis Society of Canada reports that there are over 1.4 million Canadians suffering from osteoporosis. That number is expected to rise sharply in the next few decades as the baby boomers age. It is clear that the disease merits significant consideration in the planning and delivery of quality health care for Canadians.

Osteoporosis was defined by the World Health Organization in 1994 as a disease characterized by low bone mass and microarchitectural deterioration of bone tissue, leading to increased bone fragility and risk of fracture. It occurs primarily in men and women over 50, although its onset can begin at any age. Women are more affected than men. Treatment includes hormone and medical interventions as well as dietary modification, and exercise is also believed to have an important role in the prevention and management of osteoporosis.

Exercise therapy, comprised of weight bearing aerobic training and/or strength training, contributes to the management of bone health: the mechanical stresses put through the bone during exercise can affect bone density and stimulate bone remodelling. As health care professionals, physiotherapists are able to offer programs of care that will support the overall goals of treatment.

Britain's Chartered Society of Physiotherapists (CSP) and the National Osteoporosis Society (NOS) have endorsed a physiotherapy specific Clinical Guideline<sup>1</sup> for the management of osteoporosis. The Guideline, first published in 1999, provides an evidence-based framework for physiotherapy management of three categories of patients: those with osteopenia, or mild changes to bone density, (also appropriate for prevention); those with a diagnosis of osteoporosis but have no history of fracture; and those frailer individuals diagnosed with osteoporosis and who have

experienced fracture(s). It was developed in consultation with other professions, researchers, exercise experts and the NOS.

### Guideline Highlights

The Guideline provides a framework for physiotherapy management from assessment through to exercise, education and lifestyle management and risk factors for each client category.

In addition to a base line record of height and weight, the physiotherapist will carry out a detailed **assessment** that includes an evaluation of, for example, spinal mobility and chest expansion, strength assessment, aerobic capacity, balance and function, as well as a pain measurement.

**Treatment** will be based on assessment results, but as the goals for each category are different, the program will vary.

For the osteopenic and prevention group, the Guideline identifies the goal as reducing the early rapid loss of bone density that occurs after menopause and maintaining (or increasing) bone mass. For women who are pre-menopausal, the Guideline recommends high impact exercise such as skipping, in combination with medium and low impact exercise as part of a well balanced, safe exercise program. The risk of injury is minimized with instruction in proper exercise technique. Women over 50 or who are sedentary may benefit from medium impact programs like step aerobics.

Treatment goals in the Guideline for the second group, those with osteoporosis but who have not experienced a fracture, include improving posture, muscle strength and balance, and maintaining bone strength along with education in fall prevention. Strength training is geared to the specific muscle groups around the hip, the thigh and ankle. Weight bearing exercises target areas of the body affected by osteoporosis, such as the spine

and wrist, as there is evidence that high load, low repetition programs significantly increased bone mass in post-menopausal women<sup>2</sup>. The Guidelines list both high impact exercise and trunk rotation with weights in the precautions for people in this category.

The third group has more complex needs. Recommendations in the Guideline for people with osteoporosis and who have sustained fracture(s) include treatment to help improve, gait, strength, balance and co-ordination, and education to help prevent further falls and/or fractures. Low impact and low intensity programs are recommended, and in some cases, the exercise therapy program may be started in a hydrotherapy pool depending on the individual's level of function and/or pain. Strength training is also begun at a reduced level, for example, using body resistance or single joint exercises (i.e. wrist extension, not the whole arm). Various electrotherapeutic modalities may be used to help manage pain.

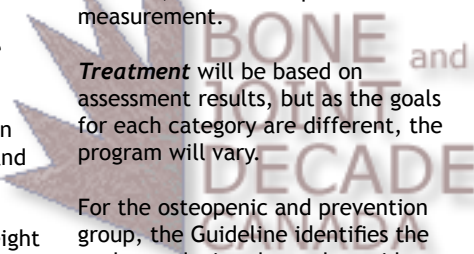
Individuals in each category may benefit from exercises to improve balance, co-ordination and posture and the Guideline includes recommendations for programs that will meet these goals safely.

Finally, the Guideline recommends that exercise programs be designed to encourage ongoing participation, as there is evidence that change in bone density requires nine months of exercise and the effects may reverse if the program is discontinued. Collaboration with community groups and programs can help promote continuation of exercise.

### References:

1. Available from the CSP website [www.csp.org](http://www.csp.org).
2. Kerr D, Morton A, Dick I, Prince R (1996) Exercise effects on bone mass in post-menopausal women are site specific and load dependent. *Journal of Bone and Mineral Research*. 11: 218-225

*The Osteoporosis Society of Canada reports that there are over 1.4 million Canadians suffering from osteoporosis.*



## NIH National Resource Centre Links People to Resources on Osteoporosis and Related Bone Diseases

by Ray Fleming

Deputy Director, Office of Communications and Public Liaison  
National Institute of Arthritis and Musculoskeletal and Skin Diseases  
U.S. Department of Health and Human Services

**T**he National Institutes of Health Osteoporosis and Related Bone Diseases - National Resource Center, a part of the US Department of Health and Human Services, provides patients, health professionals, and the public with an important link to resources and information on metabolic bone diseases. The National Resource Center is dedicated to increasing the awareness, knowledge and understanding of physicians, other health professionals, patients and the general public, especially underserved and at-risk populations (such as Hispanic and Asian women, adolescents and men), about the prevention, early detection and treatment of these diseases, as well as strategies for coping with them.

The Center collects information on materials, programs, and support services on metabolic bone diseases and disseminates this information widely through publications, online services, professional and patient meetings, and other outreach. The major metabolic bone diseases that are addressed by the National Resource Center include osteoporosis, Paget's disease of bone, osteogenesis imperfecta, primary hyperparathyroidism and other disorders of bone and mineral metabolism.

Specific services provided by the National Resource Center include:

**Inquiry Response** - The Center provides a link between current resources and the individuals (e.g. health professionals, patients, and the public) who are trying to locate these resources.

**Materials Development** - The Center develops new materials to fill important gaps in information, such as osteoporosis in men and patient information on other

rare bone diseases. Materials in Spanish and Asian languages, for low literacy populations, and for individuals with visual impairment are also available or planned. Some of the materials distributed by the National Resource Center include fact sheets (on Asian American women and osteoporosis, kids and their bones, osteogenesis imperfecta, and Paget's disease) and large-print materials (Fall Prevention for Older Adults, Bone Basics for Men of All Ages, Talking with Your Doctor About Osteoporosis, and a Spanish-language brochure on Latino women and osteoporosis).

**Materials Dissemination** - The Center distributes information packets, pamphlets, fact sheets and other materials related to metabolic bone diseases. Information on treatment options, coping strategies and referral to appropriate organizations for additional information is also available. Materials are available free of charge, and fact sheets may be reproduced for distribution as educational handouts.

Recently, the National Resource Center developed two innovative osteoporosis education programs, the Hispanic Girls Theater Project and the Asian American Osteoporosis Education Initiative. In the Hispanic Girls Theater Project, the Center partnered with the National Alliance for Hispanic Health to develop and test a culturally relevant model program in which theater was used to educate Hispanic girls and their families about the importance of bone health and osteoporosis prevention. In the Asian American Osteoporosis Education Initiative, the National Resource Center partnered with the National Asian Women's Health Organization to develop and test community-based,

ethnic- and language-specific osteoporosis education seminars for Asian American women.

The Center is supported by the National Institute of Arthritis and Musculoskeletal and Skin Diseases with contributions from the National Institute on Aging, National Institute of Child Health and Human Development, National Institute of Dental and Craniofacial Research, National Institute of Diabetes and Digestive and Kidney Diseases, NIH Office of Research on Women's Health, and DHHS Office of Women's Health. The National Institutes of Health is a component of the US Department of Health and Human Services.

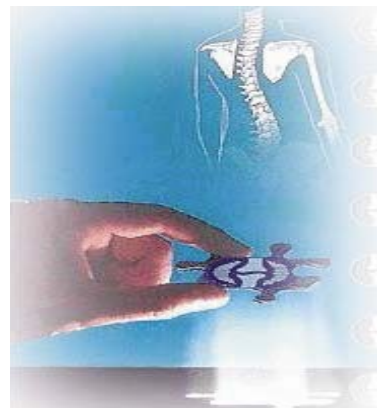
To take advantage of the National Resource Center's resources and services, contact them as follows:

**National Institutes of Health  
Osteoporosis and  
Related Bone Diseases -  
National Resource Center**

2 AMS Circle, Bethesda, MD  
20892-3676

Phone: 800.624-Bone or  
202.223.0344  
TTY: 202.466.4315  
FAX: 202.293.2356

Internet:  
<http://www.osteoporosis.org>  
Email: [OsteoInfo@osteoporosis.org](mailto:OsteoInfo@osteoporosis.org)



*The Center collects information on materials, programs, and support services on metabolic bone diseases and disseminates this information widely through publications, online services, professional and patient meetings, and other outreach.*

## NOVA SCOTIA OSTEOPOROSIS INITIATIVES

by Dr. Alexandra Papaioannou  
Research Director in the Division of  
Geriatric Medicine, McMaster University

**J**une 9 to 15, 2003, was declared Osteoporosis Week in Nova Scotia by the Honorable Jane Purves, Minister of Health for the Province. During that week, several special events were held including:

1. Public Forums on osteoporosis in Antigonish, Halifax, Sydney and Yarmouth.
2. Education sessions on osteoporosis for health care professionals in Sydney, Truro, Antigonish and Halifax.
3. A "Building Bridges" Reception facilitating meeting and discussion between members of the Osteoporosis Society of Canada (OSC) from across the country, Nova Scotia osteoporosis interest groups and key officials from the Nova Scotia Department of Health working on the Osteoporosis Project. The Honorable Jane Purves was among the invited speakers.
4. The Annual General Meeting for the OSC was held on Saturday, June 14 in Halifax.

The Osteoporosis Project of the Nova Scotia Department of Health is moving forward and implementing the 12 recommendations set forth in the June 2002 report "Managing Osteoporosis: A Nova Scotia Approach." The recommendations address the following issues:

1. Prevention (including healthy living for children and adolescents, fall prevention in the community and in the health care setting)
2. Standards and Guidelines for Diagnosis and Treatment (including Guidelines for Bone Density Testing,

charges to the Nova Scotia Senior's Pharmacare formulary, introduction of primary and secondary prevention plans in the District Health Authorities)

3. Quality Standards, Performance Monitoring and Reporting (standardization and quality monitoring of bone densitometry units, indicators to be developed to monitor fractures/falls)
4. Resources/Access (increase the access to bone densitometry)
5. Education and Communication (for various health care providers)
6. Leadership (to be shared between the Department of Health and the District Health Authorities).

### Canadian Database for Osteoporosis and Osteopenia (CANDOO)

The CANDOO Project is work that has been ongoing since 1994. It is an academic collaborative Network of Canadian physicians who are specialists in treating patients with osteoporosis. The project is based on the fact that during normal clinical practice, medical specialists routinely obtain a detailed set of core clinical data from their patients for diagnosis, treatment and follow-up. The CANDOO investigators have developed the CANDOO dataset, a common standard for the core information considered clinically important to routinely obtain during office visits of patients with osteoporosis and osteopenia. The investigators have defined the CANDOO dataset for new patient visits and a modified dataset for follow-up visits. One database record, with over 400 data fields, is generated for

each individual at each clinical visit. The CANDOO dataset includes demographics, fracture history, female reproductive history, male reproductive history, medication history and status, past medical history, lifestyles, family history, patient-administered questionnaires, physical examination, and clinical investigations. Currently, a paper form questionnaire is used to collect the data. After the subject completes the form at the investigator's office, the form is sent to the CANDOO Data Management Centre, and incorporated into the CANDOO database. CANDOO consists of approximately 10000 patients from Quebec, Ontario, Saskatchewan and Alberta.

There are two primary aims of the CANDOO project. The first is to contribute new and relevant knowledge about the real-world outcomes of osteopenia and osteoporosis in patients receiving tertiary care for their condition, including the examination of the long term effectiveness and safety (out of reach of randomized controlled trials) of less well-studied populations, including but not limited to patients with drug-induced bone loss, men with low bone mass and early postmenopausal women. The second is to develop innovative software solutions for enhancing the value of the CANDOO project for the investigators, by developing and implementing innovative, effective informatics systems to collect, maintain and analyze relevant clinical data and to develop and implement further innovative informatics systems to enhance the integration of the CANDOO project into routine clinical practice, and thus enabling the project to become

*continued on page 12*

The CANDOO Project is work that has been ongoing since 1994. It is an academic collaborative Network of Canadian physicians who are specialists in treating patients with osteoporosis

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self-sustaining.

Recent findings include vertebral and non-vertebral fractures in men and women are associated with a decrease in iliocostal distance, which may be helpful for the clinician in everyday practice (1). Non-adherence to medications is a significant barrier in many chronic conditions. Understanding of the factors that contribute to adherence may be important in improving quality of care. Incident non-vertebral fractures and older age have been found to be independent predictors of adherence to osteoporosis therapies (2). A podium presentation at the American College of Rheumatology Annual Scientific Meeting on "Predictors of Early Failure of Bisphosphonate Therapy" identified key factors which may predict early bone loss (3).

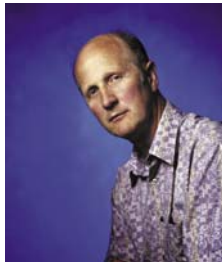
#### References:

1. Olszynski WP, Ioannidis G, Sebaldt RJ, Hanley DA, Petrie A, Brown JP, Josse RG, Murray TM, Goldsmith CH, Stephenson GF, Papaioannou A, Adachi JD. The Association Between Iliocostal Distance
2. Papaioannou A, Ioannidis G, Adachi J, Sebaldt R, Ferko N, Puglia M, Brown J, Tenenhouse A, Olszynski P, Boulos P, Hanley D, Josse R, Murray T, Petrie A, Goldsmith C. Adherence to bisphosphonates and hormone replacement therapy in a tertiary care setting of patients in the CANDOO database. *Osteoporos Int* March 2003 (In-Press).
3. Sawka A, Ioannidis G, Josse RJ, Hanley DA, Petrie A, Murray TM, Goldsmith CH, Papaioannou A, Olszynski WP, Davison K, Adachi JD. Predictors of Early Failure of Bisphosphonate Therapy: The Canadian Database of Osteoporosis and Osteopenia. *Arthritis and Rheumatism*, 2003 Annual Scientific Meeting, October 2003, Orlando, Florida. October 2003. Podium Presentation

*The Collaboration was established to ensure that patients, physicians, researchers and policy makers have reliable information to make decisions about treatments.*

## ALBERTA FOCUS ON BONE AND JOINT RESEARCH

Excerpts provided with permission from the McCaig Centre for Joint Injury and Arthritis Research from the publication "Advances In Motion" October 2003, Article by Dr. Nigel Shrive, Chair of the Joint Injury and Arthritis Research Group



On October 23, 2002, the Federal Health Minister, the Right Honorable Anne McLellan, declared Canada as a participant in the United Nations "Bone and Joint Decade". Canada was the 43rd country to recognize the decade. In Canada the objectives are to:

- coordinate and improve patient educational material;
- support access to care documents;
- coordinate Canadian research efforts in musculoskeletal health;
- increase the quality and quantity of musculoskeletal training in Canada;
- support international collaboration; and
- hold a Bone and Joint Decade conference (in 2005).

Some of these objectives are starting to be met. For example, research coordi-

nation is beginning to happen through the efforts of The Arthritis Society, the Canadian Arthritis Network (CAN), and the Institute of Musculoskeletal Health and Arthritis, which is an Institute of the Canadian Institutes of Health Research (CIHR).

In Alberta we have the CIHR-funded Alberta Provincial Bone and Joint Training Program, which offers research training for health professionals. The intent is to produce a cadre of practicing health professionals who are also researchers. The objectives of creating such a group of people is to increase the amount of research being performed on topics of direct application to patients. Quebec has connected with the Alberta program, but there is a need for other provinces to increase their research personnel if the dire shortage of arthritis researchers is to be overcome in the next few years.

Anne McLellan's declaration is good news, and we hope that over the decade, public awareness of Bone and Joint issues will

grow, and with that, increasing activity to support the Canadian objectives.

The University of Calgary and JIARG [Joint Injury and Arthritis Research] will see big improvements in their ability to perform multidisciplinary research in this area over the next few years. One of the articles in this issue [*Advances in Motion*] gives a brief outline of a project involving eight faculty members, some of them new to arthritis research. More such integrated, multidisciplinary investigations are required to make more rapid progress in combating the arthritic diseases. The national bodies mentioned earlier are pushing for multidisciplinary teams to tackle some of the big problems through targeted research initiatives. There is now a recognition that the musculoskeletal system is diverse both in the range of scale involved - from molecules to communities - and the related problems.

The Provincial Government announced the intention to create a Bone and Joint Institute in the province, with the hub in

## COA Osteoporosis Symposium: October 4, 2003

### A Brief Overview

by Dr. ER Bogoch, Professor, Division of Orthopaedic Surgery, St. Michael's Hospital and University of Toronto and Elizabeth Snowden, OOA Osteoporosis Coordinator

Chaired by Dr ER Bogoch from St. Michael's Hospital and University of Toronto, the topics presented at this symposium included presentations on: Bone Quality presented by Dr Thomas Einhorn from Boston; Ian Macnab Lecture on the Economic Impact of Fractures by Dr Laura Tosi from Washington DC; Vertebroplasty and Kyphoplasty by Dr Christopher Bono from Boston; and a status report on Canadian Orthopaedic Osteoporosis initiatives by Dr Bogoch.

*There are research projects in Vancouver, British Columbia ("Wrist Watch") and in Kingston, Ontario where orthopaedic surgeons and colleagues are studying the issue of improving osteoporosis diagnosis and treatment after wrist fracture.*

#### Bone Quality

Dr Einhorn presented an elegant overview of the determinants of bone strength and the biomechanical properties of bone from childhood periosteal bone formation to senile bone quality. The patho-mechanics of fracture were presented with a discussion of the structure of cortical and cancellous bone, as it relates to bone strength and fracture. Age and related changes for bone metabolism were identified as increased risks for fracture independent of bone mass were by Dr Einhorn during his presentation.

#### Key Points:

- A wider bone (greater diameter with thinner cortex) is a better load carrying structure than a solid bone with a smaller diameter.
- Trabecular connectivity greatly increases the strength of cancellous bones.

#### Economics of Fractures

Dr Tosi presented data from Canada and the USA related to the exploding health care costs of fracture. Data presented demonstrated the increased risk for future fracture after the "sentinel" event even when bone mineral density (BMD) is normal or osteopenic. One very interesting slide showed the majority of

fracture patients did NOT have osteoporosis at the time of their first fracture but rather low bone mass. The take away message was the patient population with fractures has unique bone quality issues that are not captured by current imaging techniques (BMD) and are also the population who achieve the most benefit with treatment. Orthopaedic surgeons are in a unique position to change outcome by referring a patient or initiating treatment after fracture.

#### Key Points:

- First fractures often happen before the patient reaches BMD levels equaling osteoporosis
- Males with fracture are at particularly high risk and need to be assessed and treated
- Fractures lead to future fractures if there is no intervention independent of BMD

#### Vertebroplasty and Kyphoplasty

Dr Bono presented an overview of the procedures of vertebroplasty and kyphoplasty. The process of patient selection and the procedure risks and benefits for the two procedures were presented. The patient populations who benefit most from these procedures were identified, and the procedural techniques described. Pain control is achieved in a high proportion of cases with both procedures. However, the rate of pain is similar to controls at six months.

#### Key Points:

- An effective intervention for pain control after osteoporotic collapse fracture.
- Evidence for some restoration of vertebral height in kyphoplasty of pain is similar to controls at six months.
- Relatively low complication rate
- The indications for these less invasive spinal procedures, and the relative merits of vertebro-

plasty vs kyphoplasty are as yet not clearly defined. Trials are underway.

#### Canadian Status Report

Dr Bogoch presented what is happening in fracture clinics across Canada with the involvement of orthopaedic surgeons. There are research projects in Vancouver, British Columbia ("Wrist Watch") and in Kingston, Ontario where orthopaedic surgeons and colleagues are studying the issue of improving osteoporosis diagnosis and treatment after wrist fracture. There are also other projects ongoing in Canada that do not have active orthopaedic participation at the present time.

In Toronto, the detailed and well resourced "Exemplary Care" program at St. Michael's Hospital has increased the rate of osteoporosis diagnosis and treatment to over 90% for both inpatient and outpatient fragility fracture populations.

In the last twelve months, the OOA-OSC "lucky break" education program of posters, pamphlets and tear-off sheets for orthopaedic fracture clinics has been implemented by the coordinator across the province at all 72 sites where there is an orthopaedic surgeon attending. This initiative is focused on increasing awareness of the clinical issue. A curriculum for orthopaedic programs is currently in development to assist in osteoporosis education for orthopaedic residents.

#### Key Points:

- Orthopaedic surgeons are currently engaged in osteoporosis care in Canada
- The assignment of a coordinator to the fracture clinic in an urban hospital has increased treatment to >90% of patients who presented with a fragility fracture.

## Our Next Step in Managing Osteoporosis

...by Susan Jaglal, PhD, Assistant Professor, Graduate Department of Rehabilitation Sciences and Research Scientist, Osteoporosis Research Program Sunnybrook and Women's College Health Sciences Centre

**R**esearch Team: Earl Bogoch MD, FRCS; Suzanne Cadarette PhD(cand), June Carroll MD, CCFP, Dave Davis, MD CCFP, LMCC; Gillian Hawker MD, MSc, FRCPC; Hans Kreder MD, MPH, FRCS; Liisa Jaakkimainen MD, MSc, CCFP; Warren McIsaac MD, MSc, CCFP

Interest in osteoporosis by family physicians and patients has increased dramatically in recent years due to the increased availability of treatment options and public awareness of osteoporosis as a health issue. As a result family physicians are primarily responsible for managing osteoporosis and related fractures but at the same time there is a shortage of family physicians in Ontario. The long-term goal of our research program is the implementation of an integrated model of care for the management of osteoporosis and associated fragility fractures. In the first phase of our research we concentrated our efforts on exploring the experiences, perceptions and opinions of family physicians about osteoporosis and to identify their information needs. The overall finding emerging from the focus

groups is that osteoporosis is an evolving area of family medicine in which both family physicians and patients are very interested [ref CFP paper]. Physicians are trying to order bone densitometry and manage osteoporosis appropriately, but are lacking a rationale for ordering these tests and are very confused about the management of this condition. Family physicians see themselves as being responsible for osteoporosis management but according to our survey they lack clinically useful information resulting in a knowledge gap [OI paper]. There is consensus among family physicians and other health care professionals that it is the family physician's responsibility to investigate and manage patients for osteoporosis. These physicians concurred that *"they treat more than just osteoporosis"* that *"in reality, osteoporosis is a complex issue"*, and that *"it is hard to keep up with the current literature"*. They acknowledged that they often do not follow-up with the patient or investigate for osteoporosis following a fracture *"there definitely has to be a trigger to remind people to think about osteoporosis amongst the 209 other things"*. They also recognized that *"it is definitely a missed opportunity if nothing happens."* Family physicians would like to have a reminder to investigate for and treat osteoporosis after a fragility fracture, including having the patient raise the issue, orthopaedic surgeons flagging cases and they would like specialist support for complex/difficult cases. A key component of our program of research is to develop and evaluate dissemination and implementation strategies to improve the detection and treatment of osteoporosis in family practice.

In our research we also found that family physicians are not currently optimally equipped to deal with fragility fracture patients. Compounding this, there is a lack of integration between health care professionals who provide fracture care and those who provide osteoporosis management and fall prevention. In response to this, in 2002/03 we conducted a study for the Ontario Women's Health Council to develop an evidence-based best practice model for integrated post-fracture care in Ontario that would be applicable to areas of the province without access to osteoporosis clinics. We synthesized the peer-reviewed literature, profiled the scope of post-fracture care in Ontario, detailed human and organizational factors that influence the post-fracture

care received, identified best practice initiatives and developed a model for integrated post-fracture care. Our model follows the trajectory of a patient with a fragility fracture through the health care system following a fracture integrating services along the way (Exhibit 1 see on page 3).

The model reflects the complexity of post-fracture care from acute care to the community. The first component focuses on the hospital setting where the fracture is first treated, with the aim of improving emergency department/ fracture clinic communication to the patient and their family physician. The second component is the primary care setting for the investigation and follow-up for osteoporosis linking family physicians with other health care professionals and a telemedicine multidisciplinary osteoporosis clinic linking patients by video-conferencing. The intent of the telemedicine clinic is to ease the burden on overworked family physicians in under-served areas and to ensure continuity of care for individuals without access to a family physician. The third component links patients to the community for rehabilitation and fall prevention. We are currently investigating mechanisms and processes required to link eligible patients to existing infrastructure and/or an osteoporosis telemedicine program and to identify current barriers and constraints to providing post-fracture care and osteoporosis follow-up in areas under serviced for family physicians. Our next step is to conduct a demonstration project to test this model and we have also teamed up with researchers in Calgary to examine the roles of orthopaedic surgeons more closely.

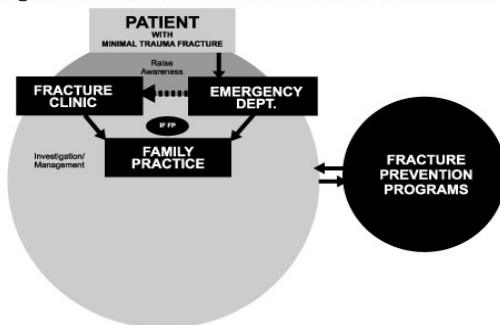
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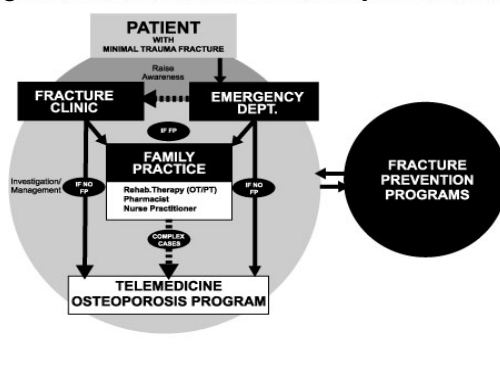
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Jaglal SB, Hawker GA, Jaakkimainen L, et al. A Survey of Information Needs of Family Physicians for the Management of Osteoporosis. Osteopor Int 2003;14:672-76.

**Local Resource-Based Integrated Post-Fracture Care Model: Minimal Model**



**Local Resource-Based Integrated Post-Fracture Care Model: Expanded Model**



## LUNENBURG - QUEENS FALLS PREVENTION PROGRAM

by Sheila Woodcock, Program Coordinator  
George McKiel, Program Chair



*"I have become quite depressed since I broke my arm and pelvis. I am 82 years old yet I feel like a dependent child again. I wish that I had known more about what it really means to have osteoporosis before my fall happened."*

- Patient with Osteoporosis in Nova Scotia

The Lunenburg - Queens Falls Prevention Program was funded as one of several pilot programs under Health Canada and Veterans Affairs Canada. It was designed to extend over a two-year period to achieve two key goals:

1. To increase the awareness of the risk factors associated with falls among veterans and other seniors in Lunenburg and Queens Counties, using a range of communication methods and tools, and
2. To reduce the risk of falls among veterans and other seniors by active intervention where appropriate.

"Slips, Trips and Broken Hips - Preventing Falls in our Home" is a thirty-five minute educational tool about the prevention of falls, packaged with a checklist for home risk assessment.

For those aged 65 or more, falling is the most common of all injury events. Within this age group, one in three who live in the community will fall in a given year. This in turn leads to use of health services at significant cost to the system. A recent study shows that seniors' falls are costing Nova Scotia \$72 million a year. Veterans and other seniors account for more than 15% of the population in Lunenburg and Queens counties and that number continues to grow. Those with osteoporosis have a higher than average risk of being injured by a fall. A provincial report released in 2002, *Managing Osteoporosis A Nova Scotia Approach*, recommended

"community based initiatives to reduce the incidence of falls in the elderly population must be strengthened and endorsed." There is evidence that a community based approach to increasing awareness of the risks and actively intervening to reduce specific risks can reduce the rates of falls.

A wide range of partner organizations are involved in the project that seeks to enhance the personal autonomy and independence of veterans and other seniors in the community. Senior citizens groups, Legion Branches, Community Health Boards and municipalities can all contribute to the achievement of the project goals and objectives. A volunteer falls prevention committee was initiated by the sponsoring organization Elderfit-Lunenburg to prepare the proposal for funding and to steer the project forward.

After communicating with the intended audience to assess their current awareness and preferred means of receiving new information, a range of communication tools was developed to deliver key messages. Brochures, talks to seniors groups, workshops and home assessments were all part of the overall plan. Partner organizations are key to the dissemination of information and materials into the community. Home risk assessments are a feature of

the program, supported by trained volunteers, who go to seniors' homes by invitation and go through room by room, using a detailed checklist. Volunteers also went out into the community to photograph fall hazards on sidewalks, curbs and public stairs. The photos became part of presentations made to local municipalities, with a request that they take responsibility for ensuring a safe community environment.

As part of the sustainability of the program, corporate funds were solicited for the professional production of a video on falls prevention. "Slips, Trips and Broken Hips - Preventing Falls in our Home" is a thirty-five minute educational tool about the prevention of falls, packaged with a checklist for home risk assessment. Copies can be purchased for twenty-five dollars (\$25.00), plus five (\$5.00) shipping and handling by calling 902.766.4295.

With the involvement of a strong community known for its volunteer contributions, support networks have been built in an already caring and concerned community. The expectation is to reduce the risk of falls, expand the disability-free years of life and improve the health of veterans and others seniors in Lunenburg and Queens Counties, Nova Scotia.

continued from page 12 -

The Alberta Focus on Bone and Joint Research

Calgary. There are many cardiac, neurological and other institutes around the world; the first Bone and Joint Institute will be in Alberta, thanks to the efforts of Mr. McCaig and colleagues. Great progress has already been made on the people and organizational aspects. A framework for operation has been established and links made throughout the province. We expect an announcement on a physical facility in the next few months. Construction on the Health Resources Innovation Centre is now underway: the ground has been broken for this much needed expansion to laboratory space. Confirmation of the building released \$4.1 million for equipment - mainly from the Canada Foundation for Innovation.

"Advances in Motion" is the annual newsletter of The McCaig Centre for Joint Injury and Arthritis Research. For further information please direct your inquiries to:

Judy Crawford  
The McCaig Centre  
The University of Calgary  
3330 Hospital Drive NW  
Calgary AB T2N 4N1  
Phone 403.220.4554  
Email: jrcrawfor@ucalgary.ca

## The Surgeon General's Report on Osteoporosis and Bone Health

**O**steoporosis and other bone diseases inflict an enormous toll on our aging population in terms of morbidity, mortality and health care costs. Effective prevention and treatment programs have been developed, but are often not being applied to the individuals at risk. For this reason the U.S. Surgeon General has commenced work on a Surgeon General's Report on Osteoporosis and Bone Health. The first step in this process was a Surgeon General's Workshop on Osteoporosis and Bone Health held on December 12 and 13, 2002. This was preceded and followed by substantial public comment that has helped to define the needs and goals of this effort.

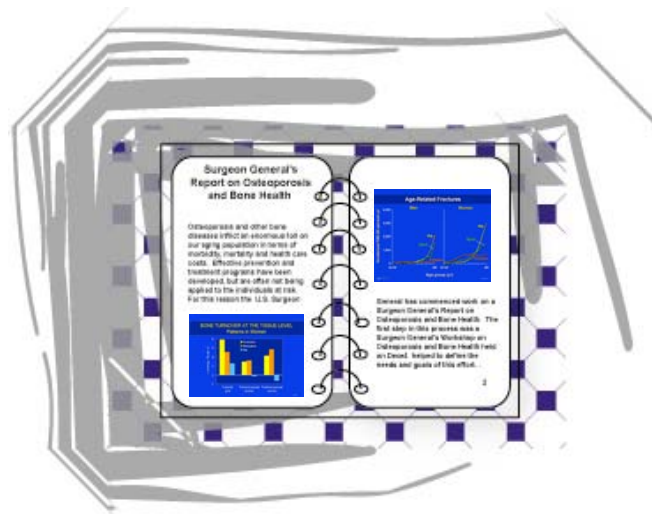
The next step to development of a comprehensive Surgeon General's Report on Osteoporosis and Bone Health, which will provide the background and evidence for the causes and risk factors and outline approaches to prevention and treatment of osteoporosis and other bone diseases. This report will also review the ways in which individuals at risk, health care providers and government and private agencies can promote bone health. A major emphasis of the report will be to identify the best public health approaches that can lead to increased awareness and better application of current knowledge. The report will describe the preventive measures that can be taken from childhood through old age and provide relevant approaches for all of the populations at risk. It is particularly appropriate that this effort was inaugurated at the beginning of the bone and joint decade.

The publication date for the Surgeon General's Report on Osteoporosis and Bone Health will be in the summer of 2004. The report has already involved over 100 contributors representing many different

constituencies. Dr. Joan A. McGowan, PhD, Director of the Musculoskeletal Diseases Branch of the National Institute of Arthritis, Musculoskeletal and Skin Diseases is the Senior Scientific Editor of the report, assisted by Dr. Allan S. Noonan, MD, MPH, Senior Advisor in the Office of the Surgeon General, Dr. Lawrence G. Raisz, MD, of the University of Connecticut Health Center and Ms. Ann L. Elderkin, PA of the Health Systems Research, Inc., the Managing Editor.

The Surgeon General, Vice Admiral Richard H. Carmona, MD, MPH, FACS, has emphasized the importance of following up this report with effective action. Thus the report is considered to be the beginning of an effort to improve bone health. Moreover he has pointed out the need to coordinate this effort with other programs to improve health and prevent disease. Successful actions will involve partnering with professional and lay groups as well as industry in creating effective messages and programs to increase awareness and hence improve diagnosis, prevention, and treatment of bone disease at all ages.

*Successful actions will involve partnering with professional and lay groups as well as industry in creating effective messages and programs to increase awareness and hence improve diagnosis, prevention, and treatment of bone disease at all ages.*



## Using Cochrane Musculoskeletal Group systematic reviews to make health care decisions about osteoporosis

by Nancy Santesso, Knowledge Translation Specialist  
Cochrane Effective Practice and Organisation of Care Group and Cochrane Musculoskeletal Group  
Institute of Population Health, University of Ottawa

**W**hether you are a person with osteoporosis making a decision about a treatment for osteoporosis or bone loss, or a health care professional making a decision about which treatment to recommend or prescribe - you need reliable information about those treatments that are based on evidence. Unfortunately, we are often bombarded with information from many studies that may have different conclusions or information that may be unreliable or based on poor research.

To ensure that people can find reliable and useful information, the Cochrane Musculoskeletal Group (CMSG), one of 50 groups in the Cochrane Collaboration, pulls together or synthesises the results of high quality studies to determine the effects of treatments for musculoskeletal diseases, such as osteoporosis. Members of the CMSG conduct and write reports, or systematic reviews, of treatments that are based on strict methods: members perform a thorough search for studies about a treatment, assess whether the studies are of a high quality, run statistical analyses of the results and present the results without a bias to their own personal beliefs. The information from systematic reviews can then be used to make decisions. It is also

important to ensure that information from systematic reviews reaches the people who need it most. For this reason, Cochrane Systematic Reviews are being made widely available in the Cochrane Library and The Arthritis Society web site.

### Advancing understanding to improve treatment

To provide reliable, synthesised information about arthritis and osteoporosis to health care professionals making health care decisions, Cochrane systematic reviews are available on the Internet at The Cochrane Library (<http://www.update-software.com/Cochrane/>). This database includes all the systematic reviews produced by all groups of the Cochrane Collaboration. In Canada, you will require a subscription to search the Library to find systematic reviews of therapies for arthritis and osteoporosis. If you don't have a subscription, the abstracts of these reviews are available at <http://www.cochrane.org/cochrane/revabstr/g050index.htm>. You'll appreciate that these abstracts and reviews are written with health professionals and researchers in mind.

### Empower patients to participate in care

To provide reliable, synthesised and understandable information

about arthritis and osteoporosis to patients and consumers, the CMSG has been working with The Arthritis Society to provide summaries of the systematic reviews on their web site. We have learnt that different people want different amounts of information; some just want the 'bottom line' about a treatment, while others want to know the details about the research studies and results. Because of this, we have developed four ways of presenting the information: as a series of consumer summaries (1, 5, 15 minute handouts) and as a decision aid (45 minute handout).

**A short consumer summary** is a "5 minute" handout that includes a "1 minute" brief "bottom line" statement about the treatment and some additional general information about the condition and treatment and a brief description of the results from studies regarding benefits and harms (some numbers of benefits and risks are included).

**A long consumer summary** (a "15 minute" handout) provides more details about the evidence than the shorter summary. It provides more information about the condition and treatment, details about the types of studies analysed and the

*Whether you are a person with osteoporosis making a decision about a treatment for osteoporosis or bone loss, or a health care professional making a decision about which treatment to recommend or prescribe - you need reliable information about those treatments that are based on evidence.*

continued from page 17

review of the literature, numerical data from the studies depicting the benefits and harms of treatment and the “bottom line.”

A **Decision Aid** (a “45 minute” handout) provides guides for patients in making decisions by helping them consider the evidence, the choices they need to make, when they need to make them and what is most important to them in terms of benefits and harms. Patients can use the decision aids when speaking with their physician and when making decisions about possible treatments.

Both the short and long consumer summaries for treatment can be found at The Arthritis Society web site ([http://www.arthritis.ca/look\\_at\\_research/cochrane\\_reviews](http://www.arthritis.ca/look_at_research/cochrane_reviews)). There you will find consumer summaries of reviews of treatments for arthritis and osteoporosis.

For example, you can read about the evidence for:

- How well do calcium supplements work to prevent bone loss in women after menopause?
- How well does risedronate work to treat and prevent osteoporosis in women after menopause?

In the near future, the 1, 5, 15 and 45 minute handouts will be found in a newly released book from the British Medical Journal publishers called ***Evidence-Based Rheumatology***.

To find out more about the Cochrane Musculoskeletal Group (<http://www.cochranemsk.org>) contact Maria Judd at [mjudd@uottawa.ca](mailto:mjudd@uottawa.ca) or Nancy Santesso at [santesso@uottawa.ca](mailto:santesso@uottawa.ca) or reach us at 613.562.5800 ext 2397.

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## The Bone and Joint Decade 2000-2010 INFOLETTER 32

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Dear BJD Friends, Members of the Steering Committee, Network Participants and Sponsors,

We are now one-third of the way into the Bone and Joint Decade and through our combined efforts we are starting to influence change.

A change in awareness - priorities, strategies, education, research, funding and much more. We have received signed endorsements from 49 governments. We have 91 national coordinators and 54 National Action Networks (NANs). Two journals have dedicated entire issues to musculoskeletal disorders and the Decade. Technical Report in conjunction with the WHO was just launched on the 27<sup>th</sup> of October and a strategy for broad disseminations was discussed during the Berlin meeting. The core recommendations for a global musculoskeletal undergraduate curriculum have been accepted for publication by the Annals of Rheumatic Diseases 2003. The recommendations will be circulated widely to enable curricula to be developed locally that reflect the enormous burden of musculoskeletal conditions - a key target of the Bone and Joint Decade

The demand by the public to be better informed will rely on available, easily accessible information and raising the awareness of different treatment modalities

and prevention for musculoskeletal conditions and their outcome.

During the Global 24-hour eLecture Series with real time discussion boards on the 15<sup>th</sup> of October more than 6000 viewers visited our website and followed the web casts. The BJD MSeC portal has been growing in leaps and bounds and has now 12.000 registered members. Our latest focus is on enriching the library of resources held inside the portal.

The Bone and Joint Activity Week is now widely established during the 12 - 20 of October, with impressive national agendas.

I was delighted to welcome 50 participating countries to the Berlin meeting. The Network Meeting is not intended to be large but an important policy meeting where information can be shared across the borders.

I want to extend my thanks to you for your participation and all the hard work in the Bone and Joint Decade.

I wish you a Merry Christmas and a Peaceful New Year.

Lars Lidgren, MD, PhD, Prof  
Chairman  
International Steering Committee  
The Bone and Joint Decade

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It's Your "Move"...

It's Your "Choice"

Contact Us:

The Bone and Joint Decade Canada Newsletter provides communication between affiliated members, organizations and patients.

If you would like to share an idea, an article or conference information, please contact us at:  
Bone and Joint Decade Canada  
1-403-210-8706

**BONE AND JOINT DECADE CANADA**  
*Healthy Bones and Healthy Joints*  
*...Keep Canada Moving*

Canadian National Action Network  
for the Bone & Joint Decade  
Coordinator:

Dr. James Waddell, MD, FRCSC

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## THE BONE AND JOINT DECADE CANADA RECOGNIZES IT'S PARTNERS AND STAKEHOLDERS

Alberta Provincial CIHR Training Program in Bone and Joint Health  
Arthritis Health Professions Association  
Canadian Academy of Sports Medicine  
Canadian Arthritis Network  
Canadian Arthritis Patient Alliance  
Canadian Association of Occupational Therapists  
Canadian Association of Physical Medicine and Rehabilitation  
Canadian Chiropractic Association  
Canadian Institutes of Health Research  
Canadian Institute for the Relief of Pain and Disability  
Canadian Medical Association  
Canadian Operational Research Association  
Canadian Orthopaedic Association  
Canadian Orthopaedic Foundation  
Canadian Orthopaedic Nurses Association  
Canadian Physiotherapy Association  
Canadian Rheumatology Association  
Canadian Society of Orthopaedic Technologists  
Cochrane Collaboration  
Institute of Musculoskeletal Health and Arthritis  
Manus Canada  
March of Dimes  
Medical Devices Canada  
MedIT, Faculty of Medicine, University of Calgary  
Osteoporosis Society of Canada  
Pfizer  
Rehab Results Inc  
Stryker Canada  
The Arthritis Society

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Additional thanks to IMHA for providing resources for translating the Bone and Joint Decade Newsletter.

Our web site is under construction, so please visit  
**BONE AND JOINT DECADE** [click on Canada] at  
[www.boneandjointdecade.org](http://www.boneandjointdecade.org)

## ACTIVITIES, UPCOMING EVENTS, and UPDATES...

Coming up in the Spring Issue of the *Bone and Joint Decade Canada Newsletter* we will be featuring bone and joint Trauma related issues. *From health care providers, researchers, advocate groups and patients, we look for your comments, articles, submissions, conference notices and advertisements.* The deadline for submissions is **March 1, 2004**. Articles up to 650 words will be accepted.

Thanks to our partners and stakeholders for your continued support, and to those who contributed to this edition of the newsletter.

Please contact Dot Brown at 403-210-8706 or email at [dbro@ucalgary.ca](mailto:dbro@ucalgary.ca) with your submissions.





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