

NEWSLETTER

SPRING 2004 VOLUME 1 ISSUE 3

TRAUMA EDITION

Healthy Bones and
Healthy Joints... Keep
Canada Moving



It's Your "Move"...

It's Your "Choice"





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Healthy Bones and Healthy Joints...Keep Canada Moving

Volume 1 Issue 3
Spring 2004

It's All About People

- NAN Coordinator gives update on Canadian Work



This is the third newsletter in what we hope will be an ongoing series of communications between the many partners in the National Action Network for the Bone & Joint Decade in Canada. The focus of this newsletter is trauma; this is not only a personal interest of mine but one of the five designated areas in the original manifesto of the Bone & Joint Decade.

Trauma is frequently referred to as "the silent epidemic" since the full extent of the problem both in terms of human suffering, direct costs and indirect costs is rarely appreciated by the general public or by government officials. Trauma is the leading cause of death in North America for people under the age of 40 and is the leading cause of disability for all age groups. Musculoskeletal trauma in particular frequently carries with it a burden of life long disability and, because of the residual effect of musculoskeletal trauma, often robs the patient of substantial enjoyment of life. Trauma care in Canada emphasizes

both prevention and treatment; we hope this newsletter accurately reflects this dual emphasis.

Canada is part of the international initiative relating to road traffic injury. World Health Day which is going to be celebrated on April 7th, 2004 is featuring a Bone & Joint Decade initiative relating to the escalating problem of road traffic accidents particularly in emerging countries. This is an example of the effect that the Bone & Joint Decade is having on the international scene - we were able to directly influence priorities of the United Nations and the World Health Organization. For more details regarding this initiative please visit our website.

Plans for the October 2005 International Steering Committee meeting in Toronto are moving ahead. We are hopeful that all of our partner organizations will sponsor members of their organization to attend this important meeting. Not only is this an opportunity to meet National Action Network Coordinators from many of

the countries involved in the Bone & Joint Decade but it is also an opportunity to meet members of the International Steering Committee who plan and promote the Bone & Joint Decade on an international scale. We are hoping to partner with a number of organizations around this meeting and hope to have a number of satellite meetings which will be of interest to all of our constituent members. I hope you enjoy this newsletter and look forward to the upcoming newsletter which will focus on paediatric musculoskeletal health.

James P. Waddell, MD, FRCSC
Coordinator, Canadian National Action Network

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Vol 1 Issue 3
ISSN 1710-419X

THE INJURY INITIATIVE

Many voices searching for a common language by Dennis Jean, Freelance Writer
for the Institute of Musculoskeletal Health and Arthritis (IMHA)

Personal injury is the leading cause of death for Canadians aged 45 and under. Each year, personal injury claims 13,000 lives and hospitalizes another 200,000 people. The burden on resources is enormous, and the number of different professionals involved in injury prevention and control is legion: police, firefighters, paramedics, emergency-room staff, neuro- and orthopedic surgeons, operating-room nurses, rehab specialists, family physicians, public-health professionals, epidemiologists, statisticians, health-policy planners, to name a few.

If front-line workers would routinely capture injury-event information (i.e. a car crash) to supplement the anatomical-injury information recorded in the ER, the analysis of this information could be useful to professionals involved in primary, secondary and tertiary injury-prevention.

"It seems to me that there's tremendous potential in an approach to research and programming that takes advantage of incorporating these levels of expertise," says Dr. Rob Brison, an emergency-room physician at Kingston General Hospital and injury researcher at Queen's University. As co-chair of a recent series of consultative workshops held under the aegis of the "Injury Initiative" co-sponsored by the Canadian Institutes of Health Research (CIHR) and the Canadian Injury Research Network (CIRNet), Brison is uniquely placed to appreciate the diversity of stakeholders and their kaleidoscopic points of view: "There are many disciplines involved in managing injuries — from those primarily interested in preventing injury events through to those

providing care in the ER and the rehab setting." Currently, however, there appears to be a difference in perspectives separating those involved in primary (of the injury event) and secondary prevention (injury sustained during the injury event; i.e. helmets, airbags) from those providing treatment for injuries in the acute care and rehab settings (after the event). Even so, each group does have perspectives and data that are crucial to the execution of effective research and programming in "Injury Control".

It will take a slight change in mindset, however, to recognize treatment as the tertiary level in a three-tier "continuum of prevention." Still, such a change in perspective could greatly improve the collection and recording of details required to evaluate injury patterns and planning interventions. "If we can gradually build the perspective," says Brison, "that there *is* a continuum of prevention, then the many disciplines active in Injury Control research and evaluation should find an easier path to common ground." And, ideally, prevention through treatment could close the circle by better informing health-policy developers and device designers about the patterns inherent in common injury-events — a type of multi-level reverse-engineering.

If front-line workers would

routinely capture injury-event information (i.e. a car crash) to supplement the anatomical-injury information recorded in the ER, the analysis of this information could be useful to professionals involved in primary, secondary and tertiary injury-prevention. The impact of such research would be felt in comparatively short order - priorities for research and prevention would be based on improved surveillance; public-safety messages could be honed and better targeted, for example. "Drive Sober, designs of protective gear refined (standard side-impact airbags) and ER protocols adjusted.

For example, a caved-in driver's door from a side-impact crash would be expected to cause certain types of injuries. "We have some sense that 'T-Bone' crashes to the driver are more often associated with injuries to the left arm, left chest, thoracic aorta, head and spleen," says Brison. "I think we could improve the speed and quality of trauma-care provided if we better defined the relationships between mechanism of injury and resulting patterns of anatomic injury." In anticipation of the type of injuries sustained by a T-boned driver, simple preparations in the trauma room might include having the IV nurse standing on the patient's right and the chest-tube tray set up on the left.

Brison believes that, if the

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many sectors of injury prevention and control could become more cohesive under the banner of the Injury Initiative, then there is huge potential to conduct “cross-cutting, multi-disciplinary research programs – big programs that have the potential to do world-class work through a bit of planning and cooperation. By putting people together, you get their shared experience, and after a while you also get to see what’s important to other people and what collective priorities can be addressed. *There’s ample room for interdisciplinary work with IMHA (the Institute of Musculoskeletal Health and Arthritis) researchers around fracture prevention and management. The*

potential for research on the many patterns of soft-tissue injury seen in our ER’s is virtually untapped.”

So how does IMHA fit into the big picture of injury prevention? High and low-impact fractures, soft-tissue injuries, secondary osteoarthritis, thermal injuries and rehab therapy are among the more obvious connections. “Right now there’s a focus on neural and brain injuries, because there’s a lot of competency in that area in Canada,” says IMHA’s scientific director Dr. Cy Frank, and who’s on the Injury Initiative’s scientific advisory committee. “My job is to build capacity in the under-developed MSK (musculoskeletal) area through RFAs (Request for

Applications) and other development tools once the Initiative’s priorities have been identified.”

According to Philip Groff of SMARTRISK (the national injury-prevention association that helped facilitate the workshops) one emerging priority from rehab professionals is developing “methodologies that help them quantify the effects of what they’re doing in the clinic. It would have to be a mix of qualitative and quantitative research, because a rehab intervention is much more complex than a drug intervention. You’d have to capture the full psycho-social aspects of the rehabilitation process and still have

the rigor and respectability of a randomized clinical trial.”

There’s also a lot to consider in primary prevention. Unintentional injuries among older adults aged 70 or over – most often falls – present a special challenge for primary prevention, says Groff, whose background is in cognitive neuropsychology, “because they tend to be set in their ways and resistant to change. By the same token, they’re strongly motivated to remain independent. That’s the real issue for them. So accent the positive. Wear the hip protectors and pick up the throw rugs so that you remain independent. The messages have to focus on the benefits.”

Given Canadian injury statistics, there’s a great deal of work to do at all levels of injury – especially since there is increasing evidence that the majority of injuries aren’t unfortunate “accidents” but are predictable and preventable events.

Alberta Provincial CIHR Training Program in Bone and Joint Health

...A unique opportunity for training health professional (clinician) scientists in Bone and Joint Health...



WHY THE ALBERTA PROVINCIAL CIHR TRAINING PROGRAM IN BONE AND JOINT HEALTH?

The Alberta Provincial CIHR Training Program in Bone and Joint Health provides an outstanding opportunity for transdisciplinary research and graduate training in bone and joint health for health professional (clinician) scientists. The Program’s foci include primary and secondary osteoarthritis, back disorders, and joint injuries. The program addresses the need for clinician-scientists conducting research related to such conditions of rapidly growing societal impact, and builds on the established record of the University of Calgary/University of Alberta complementary research strengths in bone and joint health; unprecedented university and provincial infrastructure development; and exceptional sustainable partnerships.

The Training Program will increase the number of highly qualified health professionals in bone and joint health, expose trainees to unique inter-university experiences and strengths, and cultivate professional and personal skills working in research teams and leadership development.



To find out more about
AVAILABLE FUNDING OPTIONS
and
HOW TO APPLY
please contact the

Alberta Provincial CIHR Training Program
in Bone and Joint Health at:
403-210-9702 (Calgary);
780-492-4355 (Edmonton)
Or visit our website at:
www.boneandjoint-training.ca

INFORMATION IS AVAILABLE ON ADMISSION TIMEFRAMES, FUNDING AND DIRECTED STUDY.

INVITATION TO QUALIFIED CLINICIANS AND HEALTH PROFESSIONALS FOR:

- 1) PHD GRADUATE PROGRAM FOR HEALTH CARE PROFESSIONALS (E. G. MD'S, DC'S, KINESIOLOGISTS, NURSES, DDS, PT'S)
- 2) CANADIAN OR INTERNATIONAL TRAINEES WHO ARE ELIGIBLE TO DO A ONE-YEAR COMPONENT OF THEIR GRADUATE DEGREE AT EITHER CALGARY OR EDMONTON
- 3) JOINT MD/PHD PROGRAM
- 4) CURRENT PHD STUDENTS DOING THEIR GRADUATE PROGRAM IN KINESIOLOGY, MEDICINE, REHABILITATION MEDICINE, MEDICINE AND DENTISTRY OR ENGINEERING.



The Alberta Provincial
CIHR Training Program in
Bone and Joint Health
supports the Bone and
Joint Decade

PREVENTION AND TREATMENT OF MUSCULOSKELETAL TRAUMA

by Peter O'Brien, MD, FRCSC, Associate Professor,
Head of the Division of Orthopaedic Trauma, University of British Columbia

In Canada and the United States, injuries are the leading cause of death in individuals aged 1 to 44 years and are the fourth most common cause of death among people of all ages. Overall, trauma is responsible for more lost years of productive life than any other disease. For every person who dies from injury there are many more who have non-fatal injuries and many of those suffer permanent disability. Musculoskeletal injuries to the extremities, pelvis and spine have the potential of producing significant disability. In the USA, it is estimated that annually 25 million people seek medical attention for injury and over 140,000 die from their injuries.

Injuries can affect people at all stages of life. Children and young adults are the frequent victims. Seniors are also at particular risk. The injury rate leading to death or hospitalization is higher for seniors than any other age group. As the Canadian population continues to age, it is expected that the problem of injuries in the elderly will continue to increase. In terms of the specific musculoskeletal injury, severe limb trauma can result in permanent disability including amputation, deformity from fracture, post traumatic arthritis, nerve damage and vascular compromise. Serious limb trauma requiring

hospitalization occurs as a result of falls in 50%, motor vehicle crashes in 20% and machinery and tool use in about 20% of cases. In Canada, severe injuries occur in two major groupings. High energy injuries usually occur in young people and are often associated with other system injuries. In the elderly, low energy falls are the greatest risk for causing limb injury.

There is a wide variety of activities that people in our society participate in that put them at risk of injury. Motor vehicle crashes are a particular problem. In 2001, 2,778 people died of motor vehicle related injuries in Canada (over 40,000 in the U.S.). Alcohol was a contributing factor in about 40% of those deaths. Falls are a common mechanism of injury and particularly involve the very young and the elderly. Both work and recreational activities are also common sources of injury.

The socioeconomic impact of trauma on our society is tremendous in terms of the medical resources used for treating injured people and the lost productivity due to both the morbidity and mortality. In Canada it is estimated that approximately \$9 billion is spent annually on the medical costs of treating trauma victims while in the USA the figure was estimated to be \$117 billion in 2000 (10% of total medical

expenditures). The total costs for road crashes to the Canadian economy are said to be as high as \$25 billion per year. The pain and suffering that injured people and their families endure cannot be quantified.

It would seem obvious, therefore, that prevention of trauma should be a priority public health issue. Impressive progress has been made in a wide range of injury prevention programs. Education, training and improved equipment have resulted in declining rates of injury in industrial accidents. Sports and recreation related injury rates are declining in many areas, for example the risk of injury from snow skiing is half of what it was 30 years ago.



Radiograph following modern techniques for open reduction and internal fixation of distal femur and proximal tibia fractures

Overall, trauma is responsible for more lost years of productive life than any other disease. For every person who dies from injury there are many more who have non-fatal injuries and many of those suffer permanent disability. Musculoskeletal injuries to the extremities, pelvis and spine have the potential of producing significant disability.

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Osteoporosis, falls and fracture prevention programs for the elderly are going to impact the looming epidemic of fragility fractures in the elderly. Motor vehicle related death and injury rates have declined dramatically over the past seventy-five years, but much work remains to be done to further improve automobile safety. Programs to increase seat belt use, increase child safety seat use and to reduce impaired driving are among the most important.

Proper use of seat belts has been shown to decrease the risk of death in motor vehicle collisions by 45 to 60% and to reduce the risk of head, chest and extremity injury by 50 to 80%. Seat belt legislation, education and enforcement programs are an important component of the prevention programs.

Correctly installed child safety seats have been demonstrated to decrease the risk of fatal injury for infants and toddlers in motor vehicle crashes by 70% and of serious injury by about the same amount. Again, education, legislation and enforcement are all important components of injury prevention programs.

Approximately 40% of fatal motor vehicle collisions are alcohol related. This represents a decline of about 10% from a decade ago and is related to programs directed against drinking and driving. Strategies include changing societal attitudes, laws that establish lower blood alcohol levels, graduated licensing programs, education and enforcement with the use of sobriety checks.

Though trauma rates can be and have been reduced through well-designed prevention programs, injury is and will continue to be a major health issue in our society. The treatment of trauma has improved dramatically over the

past quarter century. Effective protocols for assessment and management of injuries have been developed. Hospitals interested in the treatment of trauma victims have been developed as "trauma centers" and provide a coordinated, multidisciplinary approach to the diagnosis and management of the multiply injured patient. The outcomes in terms of both mortality and morbidity have improved as a result of these initiatives.

The management of musculoskeletal injuries in particular has improved for the trauma patient. Early and effective fracture care has important implications for patient outcome both in terms of general health and the specific fracture. In the multiple trauma (polytrauma) setting, early surgical stabilization of pelvic and long bone fractures has been shown to be a life saving intervention. Fracture stabilization

reduces inflammation, decreases pain and allows early mobilization of the patient. Each of these factors is important in improving survival in people with multiple injuries.

The basic goals in treating fractures are to obtain healing (fracture union) and to allow return to full function. Orthopaedic surgeons have a wide array of techniques available to treat musculoskeletal injuries. Many fractures require surgical management to restore anatomy, allow early mobilization and rapid return to normal activity (including work and recreation).

Much progress has been made in the prevention and treatment of musculoskeletal injuries. More needs to be done. Injuries have an enormous impact on individuals and on society. More attention to injury prevention and better patient access to modern treatment should be our goal.

We're in the preparation stages for the International Bone and Joint Decade Conference to be held in the Fall of 2005.

Check out our website at <http://www.bjdcanda.org>
(click to Bone and Joint Decade Conference 2005).



Alberta Bone and Joint Health Institute Kicks Off With \$10M Start

by Dot Brown
Project Coordinator, Western Canada
Bone and Joint Decade Canada

Mr. Bud McCaig, heralded as a community leader in Calgary, donated \$10-million during the launch of the Alberta Bone and Joint Health Institute on March 26, 2004. Premier Ralph Klein as well as other partnering organizations joined in as the new Institute was unveiled.

The Institute is an integrated approach to the delivery of bone and joint health care, research and education, and is designed to improve care for patients with musculoskeletal disorders as well as bone and spine diseases; the ultimate goal will be to reduce hospital stays and waiting times for treatment.

Mr. McCaig is a philanthropist who has contributed his time and resources to advance the provincial approach to bone and joint health care. He will co-chair the Institute's Board of Directors with Dr. Cy Frank, Scientific Director of the Institute of Musculoskeletal Health and Arthritis of the Canadian Institutes of Health Research, and Chief of Orthopaedics with the University of Calgary and Calgary Health Region.

In his speech, Dr. Frank asked, "What is this all about? The Alberta Bone and Joint Institute is the

beginning of something important and we won't be happy until we deliver." Frank went on to say, "The Institute builds on a primary health care reform



Ann McCaig stands between Alberta's Premier Ralph Klein and Health Minister Gary Mar

strategy that exist right here in Alberta. Our vision is to improve bone and joint health care for Albertans. We see changes that the average patient will see: reduced wait times and high quality care."

Under this initiative, patient care will be handled by a team of doctors, nurses and therapists who will be assigned to monitor a patient's progress and speak to them about their care.

Ann McCaig who spoke on her husband's behalf said, "By working together, we can and will create a world-class health and medical system that will outlive all of us as a legacy and an example of what we can do when we refuse to settle for anything less than the best." It is

Mr. McCaig's hope that the donation he made would be the start of \$50 million he wants to see raised from private and public partnering over the next five years. The provincial government has already committed \$125 million to the Institute.

Premier Ralph Klein, in his remarks at the unveiling said, "The Alberta Bone and Joint Health Institute represents a better delivery system of secondary care along with a greater emphasis on wellness. If this model works for bone and joint health, then I suspect it can transfer to other health care areas such as heart, brain and the list goes on."

Professional practitioners with the University of Calgary and University of Alberta, along with the Calgary Health Region, Capital Health Authority and Alberta Health and Wellness developed the initiative which will be implemented by the Alberta Bone and Joint Institute.

The future holds great promise as "this will be a dramatic improvement for health care in Alberta," said Dr. Cy Frank.

Calgary will be one of several places in the province where a Centre will be built and care will be delivered.

Photo courtesy of the
Calgary Herald;
www.calgaryherald.com

By working together, we can and will create a world-class health and medical system that will outlive all of us as a legacy and an example of what we can do when we refuse to settle for anything less than the best.

Osteoporosis and Trauma: Is there a connection?

by Beth Snowden
OOA Osteoporosis Coordinator

The Orthopaedic community has become engaged in osteoporosis care for patients who have sustained a fragility fracture. A fragility fracture has been defined as resulting from minimal trauma such as a fall from standing height.

In recent years there has been an intense effort to raise awareness that patients with fragility fractures have osteoporosis and a high risk of future devastating hip and vertebral fractures.

The issue of fragility fractures leading to future fractures has been the subject of numerous publications in Canada and abroad as well as three Canadian Orthopaedic Association symposia. However, there may be an assumption that fractures that occur with increased levels of trauma i.e. motor vehicle accidents or falls from greater heights, can be attributed to the violence of the trauma and not to insufficient bone strength. Surprisingly, recent reports suggest that this assumption requires further consideration. There have been several studies that have made a connection between any previous fracture and future fractures. Singer et al. in the *Journal of Bone and Joint Surgery* (1998) reported that fragility fractures i.e. minimal trauma, may occur prior to menopause when bone mineral

density may still fall within normal limits. Also in 1998, Saunders et al from Australia demonstrated that women with high trauma fractures have a three fold increased risk for future fragility fracture. This reproduces results reported by Karlson et al in 1993 that patients with previous ankle and tibial fractures from high trauma had increased risk for future fracture of two fold. More recent studies continue to support this finding. Hosmer et al. reported in *Osteoporosis International* (2002) on a cohort of patients from the Study of Osteoporotic Fractures, San Francisco that women who sustained any fracture prior to menopause were at increased risk for future fractures. Most recently, Haentjens and colleagues in their meta-analysis published in the *Journal of Bone and Joint Surgery* (2003) reported that men with wrist fracture history have significant increased risk (2.25 to 6.4 fold) for future hip fractures. This suggests that if all the fracture patients were investigated for osteoporosis the yield of treatable osteoporosis would be substantial.

In view of the relative youth of trauma patients in general, this is important. Increased interest in osteoporosis in trauma patients should not deflect growing involvement in osteoporosis referral and care for fragility fracture

patients. The fragility fracture patient is where attention is most necessary and will yield the greatest results, however evidence is growing that scrutiny should probably be expanded beyond fragility fractures to the trauma patient.



A fragility fracture has been defined as resulting from minimal trauma such as a fall from standing height.

Think First-SportSmart Injury Prevention Programs

by Christine F. Provvidenza, M.Sc. & Dr. Charles H. Tator,
MD

ThinkFirst-SportSmart, ThinkFirst Canada



Sport and recreational activities are essential for maintaining good health and physical fitness. Some individuals participate for leisure or competition, and for others, sports and recreation are a profession. Partaking in sports and recreational activities, however, involves risk of injury. Injuries may be unintentional or intentional in sports or recreation activities and although some injuries are minor in severity, others can be catastrophic.

Each year in Canada, many athletes become victims of catastrophic injuries, particularly debilitating head or spinal cord injuries (SCI). Indeed, approximately 20% of all SCI suffered in Canada are sports and recreation-related.

Each year in Canada, many athletes become victims of catastrophic injuries, particularly debilitating head or spinal cord injuries (SCI). Indeed, approximately 20% of all SCI suffered in Canada are sports and recreation-related. Most people who suffer SCI are young and male, ranging from 15 to 34 years in age. These injuries are often debilitating in nature, leaving victims to suffer the life long disabilities of paraplegia or quadriplegia.

Common causes of SCI include motor vehicle crashes, falls, and diving mishaps. The mechanisms of sport and recreation-related SCI are multi-factorial, ranging from the head hitting the bottom of the pool or lake because

of diving in shallow water, to being pushed or checked from behind into the boards while playing ice hockey.

Consequences suffered by SCI victims and related family can be physical, social, psychological and/or financial in nature. From a social and economic standpoint, lifetime healthcare costs and lost earnings for Canadians with SCI are estimated to be as high as \$8 million per person, depending on the victim's age and the extent of injury. Injury prevention strategies are multi-faceted, ranging from education and targeted interventions, to equipment, rules changes and rules enforcement. ThinkFirst Canada, a national brain and spinal injury prevention program, and its subsidiary ThinkFirst-SportSmart (TF-SS) Sports and Recreational Injuries Research and Prevention Centre, have taken a leadership role in the prevention of sports and recreational related injuries. ThinkFirst Canada, for example, provides two school-based programs free of charge in both French and English - TD ThinkFirst for Kids at the elementary level and ThinkFirst for Teens at the junior high and high school levels. Both programs teach children

to "ThinkFirst" before any activity in order to prevent serious brain and spinal cord injuries. To address sports and recreation, TF-SS programs include a diving prevention video for secondary school students entitled "Sudden Impact", and a hockey injury prevention program entitled "Smart Hockey: More Safety More Fun!" Sudden Impact is a diving injury prevention program that uses real life experiences from SCI victims to inform the public about diving injuries, specifically spinal cord injury, and how to dive safely. Smart Hockey: More Safety, More Fun! educates players and their coaches on how to prevent head and spine injuries in ice hockey, by providing players with tips on how to avoid being injured and causing injuries. Each of these targeted programs has been distributed free to many thousands of Canadians, and each consists of a video and accompanying information booklet.

TF-SS is also developing injury prevention programs for soccer, skiing and snowboarding, and equestrian activities. All TF-SS programs focus on catastrophic injuries and encourage the use of appropriate safety measures

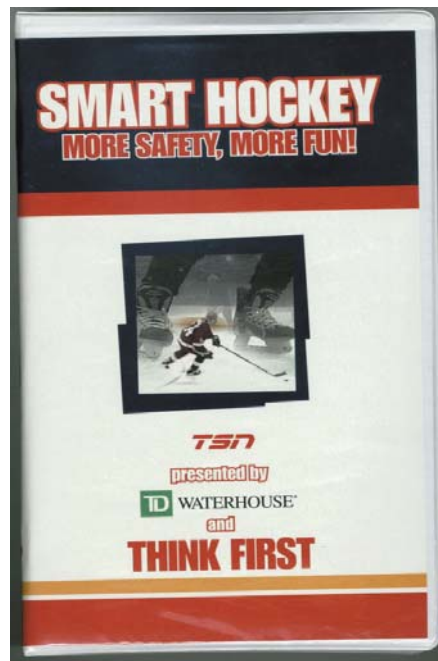
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to reduce the risk of injury, such as properly wearing and fitting equipment, and engaging in strength training programs. To learn more about our programs, go to the ThinkFirst website at www.thinkfirst.ca.

Scientific research studies have provided injury data that has facilitated rule changes in sport, such as illegal spearing in football or hitting from behind in ice hockey. Rules have been developed, changed and improved in accordance with what the data is showing, to help minimize catastrophic injury to active participants. TF-SS has also helped with this process. Since 1981, TF-SS has been maintaining a Canadian Spinal Injury in Ice Hockey Registry, which records the nature of spinal injuries in ice hockey players. Data collected by this registry, provided the first indication that behaviours such

as checking or pushing from behind into the boards were major causes of spinal cord injuries in hockey. As a result, Hockey Canada introduced specific rules in 1985-86 against



these injurious behaviours. Currently, there has been a reduction in spinal injuries in

hockey.

Injury prevention messages cannot be delivered through only one channel. Injury prevention in sports and recreation includes the following: implementing programs to facilitate changes in behaviour, attitudes, and values; knowledge enhancement (proper nutrition, strength training and conditioning programs); advocating the appropriate fit and use of equipment; and rules changes and enforcement. Education of participants, coaches, leagues, parents and the general public is a key strategy for injury prevention.

We are pleased that the Bone and Joint Decade is advocating improved physical fitness and safe participation in sports and recreation. By passing on the message of safe play, efforts are being made to educate the public of the importance of safety and injury prevention

SPOTLIGHT on World Health Day, April 7, 2004

The World Health Organization celebrates World Health day annually. This year the theme for World Health Day 2004, held on the 7th of April was Road Safety.

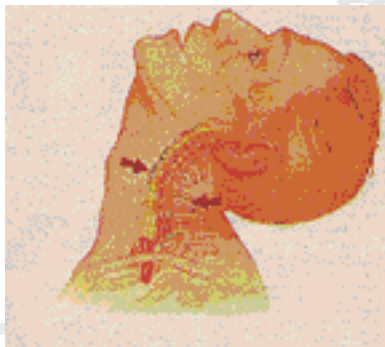


Momentum is gaining around the globe for World Health Day activities which was held on April 7th. It kicked off activities that will be on-going throughout the year. Plans included a worldwide launch by French President Jacques Chirac in Paris. U.S. Secretaries of Transportation and Health, Tommy Thompson and Norman Mineta were at the events in Washington DC. Around the world, hundreds of schools, communities, and businesses plan to hold events and fairs to promote road safety. The World Report on Road Traffic Injury Prevention will be released as part of the World Health Day activities. For more information go to: <http://www.boneandjointdecade.org/news/default.html> and <http://w.who.int/world-health-day/2004/en/>

UNDERSTANDING WHIPLASH

by Deborah Kopansky-Giles, BPHE, DC, FCCS(C), Canadian Chiropractic Association

Imagine yourself being involved in a motor vehicle collision caused by the car behind you rear-ending your vehicle. The impact pushes your car forward. It takes about 100 milliseconds for your body to catch up to that forward movement. Your shoulders and neck travel forward and your neck extends forward as your head tilts backwards. You step on the brakes, bringing the car to a sudden stop. This throws your head and neck



Imagine yourself being involved in a motor vehicle collision caused by the car behind you rear-ending your vehicle.

backward, and they bounce against the headrest. In a matter of seconds, you've experienced the classic mechanism of injury for whiplash.

Symptoms:

Evidence tells us that approximately 20% of all people sustaining whiplash injuries may develop symptoms that persist beyond the first few days. Only a small percentage of these will go on to chronic pain.

The symptoms associated with whiplash include neck pain (that may be present directly after the injury or

may be delayed for several days), neck and shoulder stiffness, pain in the upper back, injuries to the muscles and ligaments (myofascial injuries), headache, dizziness, and occasionally, abnormal sensations such as burning or prickling (paresthesias). In addition, some people experience cognitive, somatic, or psychological conditions such as memory loss, concentration impairment, nervousness/irritability, sleep disturbances, fatigue, or depression. Most whiplash symptoms resolve within a few days or weeks.

Classification of Whiplash:

The Quebec Task Force on Whiplash Associated Disorders (WAD) developed



a classification for whiplash injuries in the mid 1990s.

They categorized 5 different classes of injury, determined by the severity of injury sustained. Health professionals use this classification to help guide the type of treatment you require and to estimate the length of time to your full recovery.

The 5 categories are:

WAD 0: No neck complaints, no physical signs

WAD I: Neck pain, stiffness,

tenderness, no physical signs
WAD II: Neck pain and musculoskeletal signs
WAD III: Neck pain and neurological signs
WAD IV: Neck complaint and fracture or dislocation

The great majority of people sustaining whiplash injuries are classified as Grade I and II WAD.

Mechanism of Injury:

Studies have demonstrated that injury to the soft tissues of the neck occurs within the first 75 to 100 milliseconds after impact. Protective contraction of the neck muscles does not usually occur until approximately 150 to 200 ms after the collision, thereby exposing the muscles, tendons and ligaments to injury. The forces transmitted to the neck during whiplash (or neck acceleration/deceleration injury) include forward and backward translation of the neck and head as well as a compressive force applied to the spine due to weight of the head. These forces may be very significant, depending on impact speed, neck position, car deformation, seat back flexibility and head rest position. The action of the neck and head in response to this force results in injury to the muscles, ligaments, tendons, facet joints and possibly the discs of the cervical spine.

Treatment:Recent research

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has shown us that the most important intervention for Grade I and II WAD is to keep active; that is, trying to maintain your normal daily activities as much as possible. Your health care professional is trained to evaluate your injury and make recommendations for therapy. No single treatment has been scientifically proven as fully effective, but pain relieving medications, exercises, chiropractic treatment, physical therapy, traction, massage, heat, ice, injections and ultrasound have all been beneficial for some patients. As soon as possible, you should begin aerobic activities, such as walking. Your doctor may prescribe some isometric exercises to strengthen your neck as your condition improves. The triad of stretching, strengthening and conditioning are very important exercise components in the recovery of whiplash.

Risk Factors for Poor Recovery:

Why do some people suffer from whiplash injury longer than others? Studies in WAD have found that there are certain risk factors that lead to poorer recovery.

- Female gender (smaller neck muscles)
- Married, number of dependents.
- Older age
- Pre-existing neck pain
- Low educational level
- Previous incidence of

whiplash

- Seat back compliance
- Head rest position
- Ability of vehicle to absorb the impact (reduced absorption of force by vehicle means increased force translated to occupant)

Prevention:

The Insurance Bureau of Canada is actively promoting prevention strategies for minimizing the impact of whiplash injuries. One easy and important step to take is to ensure that your seat head rest is appropriately placed to minimize the amount of stress applied to your neck. The head rest should be in line with the top of your head and there should be no more than 2 to 5 cm between the back of your head and the head restraint.

As well, keeping active to ensure a healthy neck will help you reduce the severity of your injury after whiplash. Your health care professional can prescribe a series of gentle neck exercises for you to do on a regular basis so that your neck is strong and flexible, thereby minimizing the impact of whiplash to you in the event that it may occur.

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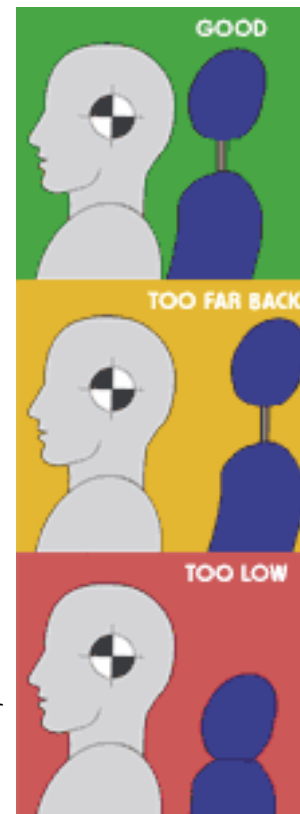
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Contact Us:

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

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

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BJD Canada wishes to thank the Canadian Orthopaedic Foundation, Pfizer, and Stryker Canada for providing the funding used to print this edition of the newsletter. Additional appreciation is extended to IMHA for providing resources for translating the Bone and Joint Decade Newsletter.

Our web site is complete. You can find
BONE AND JOINT DECADE CANADA at
www.bjdcanada.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 Paediatrics 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 **June 15, 2004**. Articles up to 650 words will be accepted. Please include your name, title and organization.

Once again, we thank 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 with your submissions.





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