

FORE

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Message from the Director



Kathleen M. Cody



Thanks to the support of our donors and partners, FORE has made great strides in research and public and professional education this year.

In July, we published the results of our community-based osteoporosis education and screening program for older adults. Of the 2,965 adults screened, nearly 61% were at risk for osteoporosis and fracture—11% higher than regularly cited in the general population. FORE has documented this viable model for improving bone health in older adults and we are advocating its expansion to other communities.

We also launched an initiative to improve bone health in young female athletes age 9-19. We gathered scientists and researchers from around the world to discuss athletic amenorrhea—a syndrome caused by the imbalance of nutritional intake with energy output that has devastating effects on bone development and puts young women at risk for premature fractures. We will publish the proceedings in early 2007 and we hope to launch a national awareness campaign for female athletes, coaches, parents and their health providers.

Finally, I am pleased to announce that soon we will bring you the latest news via the internet. To register for our electronic newsletter, please visit our website at www.fore.org.

None of these important programs would be possible without your financial support. I hope you will give generously so we can one day have a world free from osteoporosis.

Ask the Doctor



By Dr. Margo Mountjoy MD, CCFP, FCFP, Dip Sport Med.

My daughter is an athlete and keeps getting shin splints. What can I do?

'Shin splint' is a term referring to tendonitis of the lower leg muscles. This is often due to incorrect shoe wear or to training errors. If left untreated, the shin splint may lead to irritation of the bone resulting in a stress fracture in the lower leg bone (tibia). In some athletes, a stress fracture can be a sign of poor nutrition and even an early indicator of underlying thinning of the bones known as osteopenia, or in more severe cases, osteoporosis.

One thing that you can do to prevent shin splints and stress fractures is to ensure that your daughter has a balanced training program under the guidance of an experienced coach, and that she has an evaluation of her foot wear to ensure appropriate biomechanics. In addition, it is important to talk to your daughter about adequate nutritional intake of caloric energy and calcium/Vitamin D.

Some female athletes develop thin bones as a result of the Female Athlete Triad. Ask your daughter about the regularity of her menstrual cycle. The loss of regular menses is one of the signs of the Triad, which may indicate that she is not getting adequate nutrition, affecting her hormonal function and subsequently the health of her bones. Often young female athletes restrict their nutritional intake which can have detrimental secondary effects on their health. Consulting a nutritionist is most helpful to ensure adequate intake of nutrients to ensure health and to maximize sport performance.

There are many resources for parents of young female athletes including FORE and the NCAA Health and Safety division (www.ncaa.org/healthandsafety). If the problem persists, talk with your pediatrician about bone density testing and other potential causes for stress fractures.

Dr. Margo Mountjoy is a consultant sports medicine physician at the University of Guelph Health & Performance Centre, Toronto, Canada. She is a long-standing member of the Women's Issues in Sports Medicine Committee of the Canadian Academy of Sports Medicine and the International representative for the Aquatic Federation of Canada.

ABSOLUTE FRACTURE RISK: NEW ASSESSMENT CRITERIA IN BONE HEALTH

Michael McClung, MD
Director, Oregon Osteoporosis Center

Bone density testing is an important diagnostic tool in the fight against osteoporosis and fractures. However, we have long known that there are factors beyond bone density that affect a patient's risk for breaking a bone. Currently, scientists and researchers are working with the World Health Organization to develop a model to help physicians better diagnose and treat their patients with the ultimate goal of preventing fractures. This concept of ABSOLUTE FRACTURE RISK is one that doctors and their patients will see with greater frequency in the coming months and years.

Osteoporosis is a serious disease affecting one out of two women over age 50, and one out of eight men. Untreated, osteoporosis increases the risk of a debilitating bone fracture in patients over age 65. In fact, a woman's risk of a bone break is higher than her risk of breast, ovarian or uterine cancer combined. Often thought to affect only older Caucasian women, we now know have evidence that Asian and Hispanic women are at equally high risk. African-American women appear to have a similar risk at a somewhat older age. While the risk for women has been fairly well understood, the risk for men is less clearly defined. One factor that contributes to osteoporosis in men is the prevalence of prolonged steroid treatment in that population.

Since the early 1980's, doctors have been using Dual Energy X-Ray Absorptiometry or DEXA machines to determine the mass or density of hip and spinal bones. With this information, they are able to make a judgment about a patient's risk of fracture. The results of the diagnostic test are reported by either "t" score or "z" score. A t-score compares the patient's bone density to the peak bone mass of a 30 year old and is typically reported for post-menopausal women. A z-score compares the patient's results to those of someone of the same age, and is used for women who are pre-menopausal.

In response to the call from Surgeon General Vice Admiral Richard H. Carmona in 2004¹, the World Health Organization (WHO) and other osteoporosis advocacy groups began to develop a more complete way to present osteoporosis and fracture risk data to patients and their health care providers. The current system of analyzing a patient's t-score and z-score to estimate their risk of fracture compared to other patients in their age group, will soon be replaced by an assessment of absolute fracture risk. Researchers expect the WHO model will estimate absolute fracture risk by assessing an individual's risk factors including lifestyle, general health, other medical conditions and possibly inherited genes as well as bone mineral density. Using this broader assessment we will be more able to accurately predict the individual's estimated fracture risk over the next decade of their life. Absolute fracture risk is a statement of the likelihood that a patient will experience fracture within a specific time period.

According to Dr. Robert Lindsay of Helen Hayes Hospital in New York, "In assessing the need for and type of treatment required for an individual patient, physicians need to assess the whole patient, and not simply rely on the t-score."² Knowing the t-score provides important information on bone health status and osteoporosis, but it is not always enough information to make definitive treatment decisions. By using bone density test

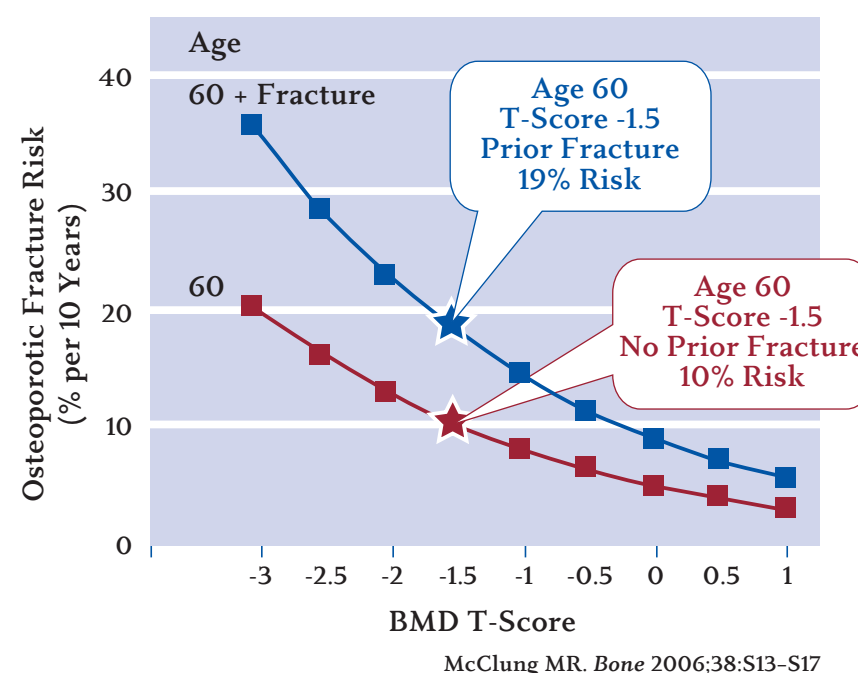
results in combination with patients' personal history, physicians can better gage the absolute fracture risk and begin appropriate treatment. Risk factors that will be taken into account include personal fracture history, alcohol intake, smoking, certain medications, physical activity and age of menopause.

Many risk factors for osteoporosis, including behavioral and environmental changes can lead to a decreased risk in fracture when modified.³ Once a complete picture of bone health, osteoporosis and fracture risk is presented, many patients often choose to adapt their behaviors to reduce behaviors that are not healthy for bones – such as smoking or drinking in excess, and increase bone healthy activities. Simple changes like adding weight-bearing physical activity and ensuring that nutrition choices include foods high in calcium and vitamin D (with the possibility that additional supplements may be needed to augment the diet) lead to healthier bones. A combination of engaging in behaviors that are good for bones and decreasing the behaviors that are not good for bones can help reduce absolute fracture risk and decrease the chances of future fractures

Effecting behavioral change in those at risk for osteoporosis is perhaps the most important step in preventing future fractures. By presenting a complete picture of risk factors, the absolute fracture risk model brings consequences of ignoring bone health behaviors into the forefront. We believe that this new model will better serve doctors and their patients as they work together to prevent and possibly reverse the risk of osteoporosis and debilitating fractures.

Osteoporosis fractures are a common, but preventable, part of the aging process. With the help of upcoming WHO guidelines for assessing absolute fracture risk, patients and health providers will have a better tool for preventing and treating osteoporosis.

Assessing Fracture Risk



¹ Carmona, Vice Admiral Richard H., U.S. Surgeon General. *Bone Health and Osteoporosis: A Report of the Surgeon General*. Surgeon General's Office October 2004.
² Lindsay, Robert L., MD, PhD. *The Changing Paradigm in Osteoporosis Treatment*. Physician's Weekly, LLC 2006. <http://www.physweekly.com/pc.asp?issueid=100&questionid=102>
³ El-Hajj Fuleihan G, Baddoura R, Awada H, Okais J, Rizk P, McClung M. Practice Guidelines on the use of bone mineral density measurements. Who to test? What measures to use? When to treat? A Consensus report from the Middle East Densitometry Workshop. *Lebanese Medical Journal* 2002; 50 (3): 89-104

FORE Would Like to Thank

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TEAMING UP TO CHANGE THE FACE OF OSTEOPOROSIS



Faces of Osteoporosis, a book of photography, puts a face on the 60 million men, women and young people living with osteoporosis. The book was released on April 17 through the Foundation for Osteoporosis Research and Education (FORE). Available for \$19.95 each, copies are available on the FORE website at www.fore.org.

"This exciting new book really breaks the stereotypes about osteoporosis." Kathleen Cody, executive director of FORE, said. "The Faces of Osteoporosis represent the unseen men, women and children living with this debilitating disease."

Amelia Davis, a renowned San Francisco photographer, worked with the Foundation for Osteoporosis Research and Education and the California Osteoporosis Prevention and Education Program (COPE) to demonstrate that osteoporosis can affect people from all walks of life, across every sector of the population. "We wanted to really show the public the diversity of people affected: there are children, young women, young men, all races and ethnicities," says Davis.

Contributors Share Their Stories

Renea, who is featured on the cover says "I no longer think of osteoporosis as an older persons' disease." After being diagnosed with osteoporosis after a car accident in 2003, Renea has learned about the risks and prevention techniques. "It's great to know that unlike many of the other diseases we hear about today, there is something that we can do to alter the outcome."

At twenty-one, Sarah never expected to have osteoporosis. During a health screening FORE was conducting, Sarah stopped to get a bone density test. "I thought, I'm three times younger than anyone else in line, I go to the gym five days a week, and I run half marathons. My score is going to be the best!" Sarah quickly found out that anyone can be affected by declining bone health. "It's never too early to eat healthy and build strong bones."

CONTINUING TO REACH OLDER ADULTS: FORE RELEASES RESULTS OF A THREE YEAR INTERVENTION



Osteoporosis Detection in Older Adults: A Case for Community-Based Osteoporosis Education and Screening to Improve Bone Health for Older Adults, a study by the Foundation for Osteoporosis Research and Education, has been released. This policy brief makes the case for improving identification of low bone mass and osteoporosis among older adults by supporting community-based education and screening to reduce the risk of life altering fractures. The results, published for use in the community, are available through FORE.

Beverly Tracewell, RN, Program Director at FORE, notes that "The release of this important publication is the first step towards making bone density screening a priority for health providers. The number of older adults who have access to bone density screening is shockingly low."

This brief advocates for increased funding and support for community-based education and screening programs to reach underserved older adults. There are roles for policymakers, government, community-based organizations, healthcare systems and providers that can assure that poor and diverse older adults have access to education, screening and treatment to prevent loss of independence, costly fractures and diminished quality of life.

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