



Author and Researcher Speaks to Volunteers

Miriam "Mim" Nelson, PhD, Tufts University spoke to 28 Bone Builders volunteers at the Pima County Cooperative Extension office in Tucson on April 12th. Dr. Nelson, author of several international best sellers including **Strong Women Stay Young** and **Strong Women, Strong Bones** talked about her research in promoting physical activity.

She shared her work in training professionals across the country to run "Strong Women" programs in their local communities. Extension family and consumer sciences agents make up the majority of the trainers across the county. Dr. Nelson found that volunteers or trainers who lift weight themselves are more likely to start and lead classes after receiving her "Strong Women" training. She answered questions from the audience and shared insights on health promotion with elementary students.

During the reception after her presentation, attendees viewed posters on the Bone Builders Physical Activity Program and Walk Across Arizona.

May is Osteoporosis Month

Legislative Action Promotes Osteoporosis

During 2006, the Arizona Osteoporosis Coalition (AZOC) worked with the Arizona Legislature to pass a bill for \$300,000 in funding for osteoporosis outreach, screening and statewide clearinghouse. The funding was added to the Arizona Department of Health budget and will be used to provide ultrasound bone density screening to women without health insurance through the Well Woman program in Coconino and Yuma counties and another county to be named.

AZOC, Bone Builders and the University of Arizona will train Well Woman staff and provide follow-up DEXA screening to women at high risk. The first group of staff attended a 2-day Bone Builders training in March. The funding will also be used to expand Building Better Bone classes to elementary students in the 3 pilot counties and other outreach projects.

Bone Builders Volunteer Training

Awareness and prevention are critical in combating the growing problem of osteoporosis. Volunteers are needed to teach others about reducing the risks of osteoporosis. The Bone Builders program is a partnership

between the University of Arizona Cooperative Extension, Arizona Osteoporosis Coalition, and many other local organizations around the state to help women reduce their risks of developing osteoporosis.

Do you know a potential Bone Builder? It only takes a few hours a month to become a Bone Builders volunteer and make a difference in the health of women. The next volunteer training is scheduled for **June 15th and 16th**.

In Phoenix, the training will be held at the University of Arizona Medical Campus (Arizona Medical Education Consortium - AzMEC) located at 550 E. Van Buren St., Bldg. 3 - Room 3267. Contact Linda Block at (520) 626-5161 or email lblock@ag.arizona.edu for the Tucson location.

For an application and more details call 602-470-8086, extension 316 or email dharris@ag.arizona.edu

Men with Prostate Cancer and Risk of Osteoporosis

Measuring a man's daily calcium intake is an effective way of identifying prostate cancer patients with a higher than average risk of osteoporosis, according to the April issue of the urology journal *BJU international*.



Researchers from the Autònoma University School of Medicine, Barcelona, Spain found that 49% of the men with prostate cancer in a cross-section study had osteoporosis, including 55% of those who had received the ADT hormone therapy and 35% who had had a prostatectomy.

These figures are considerably higher than the prevalence of osteoporosis in the general male population, where it's estimated that about 20% of all male osteoporosis cases occur in the 61 to 70 age group.

A dietary questionnaire revealed few of the men were consuming the 1000mg of calcium recommended for all 25-65 year-olds by the US National Institutes of Health and the 1500mg recommended for men over 65.

"Our research showed a significant relationship between a low daily calcium intake and higher levels of osteoporosis in men with prostate cancer," says lead researcher Dr. Jacques Planas from the University's Department of Urology.

"Men who had undergone ADT hormone therapy were particularly at risk and longer treatment and increased age were also related to higher levels of osteoporosis. What was particularly interesting was the fact that more than a third of the patients who hadn't received hormone treatment also developed osteoporosis."

Osteoporosis is caused by loss of bone mineral density, which makes bones brittle and significantly more likely to fracture. It is more common in older people and has been strongly linked to hormonal changes, such as the female menopause.

Links to ADT hormone therapy have also been reported, but the Barcelona study is thought to be the first to look at using daily calcium as a diagnostic tool to identify prostate cancer patients who face an increased risk of osteoporosis, including those who have not received ADT.

"Men account for about a third of all hip fractures, but they are much more likely to die after an injury of this nature than women, so it is important to identify possible risks at an early stage," add Dr. Planas.

"We carried out our research to discover whether there was a relationship between low daily calcium intake and reduced bone mineral density, which there clearly was," says Dr. Planas.

The authors suggest that patients with prostate cancer should be routinely advised to take at least 1000mg of calcium a day and that their bone mineral density should be assessed, particularly before starting ADT, and monitored at regular intervals after the treatment begins.

Source: Planas et al. *BJU International*. 99, pp 812-816. (April 2007).

Omega-3 Fatty Acids and Bone Health

Fish oil contains the omega-3 fatty acids, eicosapentaenoic (EPA) and docosahexaenoic (DHA). Walnuts and flaxseed also contain omega-3s but in the form of alpha-linolenic acid (ALA). Most of us know the marine based omega-3 fatty acids (EPA, DHA) have been studied and have proven to be beneficial on bone health. Now a study has shown that plant-based sources of Omega-3 fatty acid plants (ACA) can be converted to EPA and DHA in the body.

Bone is made of several different types of cells including osteoblasts (bone forming cells), osteoclasts (bone breakdown or resorbing cells), and collagen (a protein matrix within which the osteoclasts and osteoblasts are located). Healthy bone is constantly being broken down and built back up again, a process that keeps bone strong. However, when breakdown exceeds formation, bones become weak and bone disease occurs. When the osteoclasts break bone down, some of the collagen is also dissolved.

Walnuts and walnut oil represented half of the total fat in the study. Sources of walnuts in the diet included walnut granola, honey walnut butter, walnut pesto, and plain walnuts as a snack. Flaxseed oil and the fatty acids were incorporated into the food that the subjects ate; they were not given as supplements.

Most of the participants in this study were middle-aged men. The presence of osteoporosis in men is increasing, but they generally are not included in studies of bone health. This report, as well as others, suggests that men may benefit from adjustments to the fatty acid composition of the diet, not only because of benefits to their cardiovascular systems, but also because of benefits to their bones.

Source: *An Increase in Dietary N-3 Fatty Acids Decreases a Marker of Bone Resorption in Humans*, *Nutr J*, 2007 Jan 16;6(1):2.

☺ Thanks to the Master Consumer Advisors program at the Cooperative Extension office for additional support on this topic. You may contact them at 602-470-8086, extension 341 to answer questions you have on a variety of consumer topics.

Antioxidant Foods for the Omega-3 Benefit

Beans may be a near-perfect health food – especially if they're red. We already know that beans are a great source of fiber and vegetable protein. But red kidney beans are also stellar when it comes to packing an antioxidant punch. In fact, red beans are right up there with blueberries when it comes to total antioxidant value.

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So brighten up your salads and stews by tossing in some crimson-colored beauties.

Some antioxidant champions include artichokes, russet potatoes, pinto beans, sweet cherries, plums, red kidney beans and pecans. What's so great about antioxidants? They help guard against the cell damage that can lead to cancer, heart disease, and early aging by swiftly mopping up free radicals – cell-process by-products that can damage DNA.

Here are the antioxidant winners in a recent study, which examined over 100 different plant-food sources:

- ★ Fruits: cranberries, blueberries, blackberries
- ★ Vegetables: beans (red, kidney, pinto, and black), artichokes, and russet potatoes
- ★ Nuts: pecans, walnuts, hazelnuts

Source: RealAge.com, *Tip of the Day*, March 19, 2007.

Another Boost for Omega-3s and Bone Mass

Attainment of peak bone mass in adolescence and the prevention of age-related osteoporosis are potential positive effects of omega-3 fatty acids. A recent study of young men over a seven year period confirm a strong correlation between the increased intake of Omega-3 fatty acids (particularly docosahexaenoic acid – DHA) and the accumulation of total Bone Mineral Density (BMD) and the BMD of the spine of these men.

Two of the publishing Journal's editors confer that the Omega-3 fatty acids benefits for prevention and treating osteoporosis need to be elucidated.

Source: *The American Journal of Clinical Nutrition*; March 2007, Volume 85: 647-648, 803-807.

Hip Fracture Risk High Among Older Diabetics

Older people with diabetes have a higher risk of hip fractures compared to those without diabetes, according to recent published findings. Individuals with type 2 diabetes actually have higher bone mineral density (BMD) than non-diabetics, possibly because of higher body weight; however, they may still be at increased risk for hip fractures, states Dr. L. Lipscombe of Toronto's Institute for Clinical Evaluative Sciences.

The reason that diabetics have an increased risk of fracture despite higher BMD is unclear. "One explanation may be that BMD doesn't account for all of the fracture risk in this population. Patients with diabetes may be more likely to fall because of higher rates of visual or neuromuscular impairment which may increase the likelihood of fracture by predisposing individuals to more

severe falls or falls toward the side, both of which have been associated with higher hip fracture rates," according to the investigators.

Source: *Diabetes Care* 2007; 30:835-841.

National Osteoporosis Foundation Annual Conference

On April 18-22 in Washington, the National Osteoporosis Foundation will sponsor the International Symposium on Osteoporosis. The ISO provides a forum for leaders in the field to present their research, exchange ideas, and interact with their colleagues and industry counterparts. The theme of the conference is "Translating Research into Clinical Practice" and the goal is to update physicians, nurses, and allied healthcare providers with the most current and clinically relevant information on osteoporosis prevention, diagnosis and treatment.

Check out our next Bone Builders newsletter for more information for the National Osteoporosis Foundation. Visit their website at www.nof.org.

The Broken-Bone Epidemic

Calcium deficiency in U.S. kids is at an all-time high – and their bodies may pay the price for a lifetime.

You wouldn't think that osteoporosis – the brittle-bone disease that afflicts 10 million Americans over age 50 – is something you need to worry about for your kids. But now you do. Just ask Maribel Burke, a mother of two from Jacksonville, Florida. Two years ago, her 9 year old daughter, Christina, mysteriously began breaking bones. Within a span of 18 months, she fractured each arm twice. "The first time she was just catching a kickball," Burke says. It happened again when another child bumped into her on a slide. As one cast came off, another went on.

Christina's mom finally enrolled her in a bone-density study at Nemours Children's Clinic in Jacksonville, where they received this shocking diagnosis: Christina had osteoporosis. The doctor was surprised too – until Burke explained that her daughter's pediatrician had told her to stay away from dairy products because they might be causing her migraines. The doctor at the clinic instructed Christina to start drinking milk again and prescribed a supplement containing calcium and vitamin D. The new regimen has made a huge difference. Christina's bone density has improved, and she hasn't had a fracture since.

While this may sound like an extreme example, a surprising number of kids today have weak bones – and they're getting fractures at an alarming rate. A study comparing the residents of Rochester, Minnesota, from

1999 to 2001 with those of 1969 to 1971, for example, found a 42 percent increase in broken arms, and the biggest jump was among kids ages 8 to 14. “Kids are more calcium-deficient than ever before,” says Sundeep Khosia, MD, professor of medicine at the Mayo Clinic College of Medicine, in Rochester, and the study’s lead researcher. That’s because children are drinking way too much soda and juice, and not nearly enough milk.

Calcium is essential for children to develop strong, healthy bones. But many kids aren’t getting what the American Academy of Pediatrics (AAP) says they need: 500 mg a day for 1 to 3 year olds; 800 mg a day for 4 to 8 year olds; and 1,300 mg a day for kids ages 9 and up. Nearly half of preschoolers and more than 60 percent of 6 to 11 year olds fail to meet their daily calcium requirements.

MAKE MILK A PRIORITY. Children 4 to 8 should drink at least three 8-ounce glasses of milk per day, which means you should serve milk (or dairy equivalents, such as 6 ounces of yogurt or 15 ounces of cheese) at every meal. Experts say milk has an edge over calcium-fortified beverages like orange juice. Besides being rich in calcium and fortified with vitamin D (which helps the body absorb calcium), milk has protein and essential vitamins and minerals – including riboflavin, phosphorus, and zinc – that help strengthen bones. “Calcium and vitamin D fortified juices don’t provide these other nutrients, and they also have a lot more sugar,” say Alisa Goulding, PhD, a calcium research fellow at the University of Otago in New Zealand.



BE A ROLE MODEL. To keep your bones strong, you need three servings of dairy products a day too. “Getting enough calcium is a family affair,” says Stephanie Smith, RD, a spokesperson for the Western Dairy Council, in Thornton, Colorado. While all kids need calcium, setting an example for girls (who are more prone to getting osteoporosis later in life) is especially critical. Studies show that daughters whose moms drink milk regularly consume more of it themselves and drink less soda. Talking about why you still drink milk (“I love the taste, and it’s good for my bones”) will help your child realize why it’s so important.

DON’T DITCH DAIRY IF YOUR CHILD IS LACTOSE INTOLERANT. Kids who get tummy aches after they drink milk may not be able to digest its natural sugar, called lactose. One out of four people have the condition, and it’s especially common among African Americans, Asians, and Hispanics. But according to the AAP, most lactose-sensitive kids can ultimately drink regular milk without getting cramps or diarrhea. “Drinking milk may actually help build up a child’s tolerance by fostering good

bacteria in the intestines,” says Robert P. Heaney, MD, professor of medicine at Creighton University, in Omaha.

FINALLY, GET YOUR CHILD MOVING. To build strong bones, kids need more than calcium; they need daily exercise.

Source: Excerpts from an article in the March 2007 *Parents Magazine* highlighted calcium deficiency with kids in the U.S.



Bone Appétit

Silken Pineapple Pie

Serves 8

- 1 4 oz. soft tofu or firm silken tofu*, crumbled
- 4 oz. non-fat cream cheese
- 1 6 oz. crushed pineapple, packed in juice and drained
- 2 tbsp. all-purpose flour
- 1/8 tsp. salt
- 1 large egg white
- 1 1/2 tsp. grated orange peel
- 1/3 cup + 1 tbsp. granulated sugar
- 1 prepared low-fat graham cracker crust

* prepared with calcium sulfate

1. Preheat oven to 325°F.
2. In a food processor or blender, process the tofu, cream cheese and pineapple until blended, scraping down sides of container with a spatula.
3. Add in remaining ingredients and continue blending.
4. Pour batter into the prepared pie crust, spreading evenly.
5. Bake until set, about 50-60 minutes; a knife inserted in the center of the pan should come out clean.
6. Cool pie in pan on wire rack for an hour.
7. Refrigerate for 3 hours, serving chilled. Run a small spatula around edge of pie to release the sides.

Optional: Non-dairy whipped topping or fresh fruit as a topping.

Nutrition Information per serving:

Calories:	274
Protein:	7.6g
Total Carbohydrate:	41.0g
Total Fat:	9.0g
Cholesterol:	1.0mg
Sodium:	309.0g
CALCIUM:	205.0mg

Source: Recipe from Cooperative Extension in Las Vegas, Nevada and contributed by Lynne Durrant, Mohave County Cooperative Extension.

Maricopa County News

Our office and staff have been providing nutrition education to teachers, students, and parents in various Phoenix-wide schools. Educational in-services, teaching tools and incentive items are developed and delivered as part of the United States Department of Agriculture food stamp education program. By providing nutritional messages on the importance of calcium and balanced food intake as well as the promotional of physical activity, the Bone Builders program is working toward the reduction of the childhood obesity epidemic in the nation.

Are you interested in learning more? Would you like to participate in the school activities? These have included Field Days, a cluster of physical activity games with either the entire school or certain grades participating, Career Day with an appearance by the Mayor of Phoenix and guests who described their careers to the classes of students. There are many opportunities for you to step forward and re-new your participation in the Bone Builders program. Perhaps you would enjoy coming to the next Bone Builders training and meeting the newest group of health educators who will be promoting the message of good bone health.

Give Donna Harris a call at 602-470-8086, extension 316 or email her at dharris@ag.arizona.edu.

Volunteer Birthdays!

Happy Birthday and belated birthday wishes to all our wonderful volunteers:

March

Carolyn Bonner - 1
Mona Mahrtyrn - 9
Alene Nitzky - 10
Maribel Juarez and Kim Hopkins - 18
Stephen Horwood - 20
Laura Norton and Fuensanta Aguirre - 27
Jannalee Johnson - 31

April

Telesfora Gonzalez - 17
Kristina Bignoli, Anne Chadwick, Heike Hilker, and Michael Sano - 20
Lynn Miller - 22
Lisa Pearson - 26

May

Mary Ellen Rivero - 1
Sheila MacDonald - 14
Marilyn Stolfa - 23
Emily Bower and Dana Singla - 28
Delmi Ortega - 29



Sharon Hoelscher Day, Extension Agent, Family & Consumer Sciences
Coordinator, Community Health Programs
email: shday@ag.arizona.edu



- Dr. Linda Larkey, Phoenix Area Director, Women's Cancer Prevention Research Initiative and Research Assistant Professor, College of Public Health
- Donna Harris, Program Coordinator, 602-470-8086, ext. 316, email: dharris@ag.arizona.edu
- Elizabeth Schnoll, Health Educator, 602-470-8086, ext. 324, email: eschnoll@ag.arizona.edu

Persons with a disability may request a reasonable accommodation, such as a sign language interpreter by contacting Sharon H. Day at 602-470-8086, extension 332. Requests should be made as early as possible to allow time to arrange the accommodation.