Os\textsuperscript{osteoporosis} literally means “porous bones.” Although the disease is sometimes visible in the “dowager’s hump,” it is more often invisible until a fracture occurs. The most common fractures seen with osteoporosis are of the hip, the spine and the wrist. Spinal fractures can lead to loss of height, curvature of the spine (kyphosis) and back pain. Hip fractures can have more dire consequences; 12-20% of individuals who suffer a hip fracture die shortly after the fracture, usually from complications such as pneumonia or blood clots to the lung.

The growth of new bone mass peaks between ages 25-35 and thereafter we start slowly to lose bone mass (about 0.1-0.2% per year) for several years. After menopause, the rate of loss slows down again until much later in life, when it once again increases, likely due to decreased calcium absorption by the intestines.

Building and maintaining strong bones is a lifelong project. Although diseases of the bone have multiple and complex causes, the development of some can be minimized by adequate nutrition during the life cycle. Peak bone mass, which is achieved between 25 and 35, is related to dietary calcium intake and weight-bearing exercise during growth and development. Adolescents are particularly primed for bone building, as with the start of puberty the body has a greater capacity to absorb and retain calcium. Recommended calcium intake for adolescents is 1300 mg per day. Also needed for bone formation are vitamin D (which helps absorb calcium from the intestine), vitamin A, vitamin C, magnesium and zinc. Protein is needed to build basic bone structure.

Calcium intake of Americans is often inadequate. Skipping meals contributes to the problem; each skipped meal reduces that days opportunity to obtain calcium. Replacing milk with coffee and soda or other sugary drinks also prevents bones from getting calcium and other vital nutrients.

Milk and milk products are not the only foods that contain calcium, although milk provides a large amount of readily absorbable calcium as well as protein, vitamins D and A, magnesium and zinc. Other high calcium foods are dark green leafy vegetables such as broccoli, kale, and bok choy; sardines and salmon with bones; calcium-fortified foods such as fruit juices, breakfast cereal, and breakfast bars; and tofu processed with calcium. In addition, many non-dairy “milks” such as soy milk, rice milk and nut milks, are fortified with calcium and other nutrients. Some waffles and pancakes are also fortified with calcium.
Important telephone numbers

Urgent Care 432-0123
Open 24 hrs/day, seven days per week
Toll Free 1-877-YHP-CARE
Information 432-0246
Pharmacy 432-0033

Hours of operation
Monday–Wednesday, Friday 7:30 AM–6:30 PM
Thursday 8:30 AM–6:30 PM
Saturday 8:30 AM–3:30 PM

Patient Representative 432-0109
Medicare/Retiree Coordinator 432-8114
Outpatient Referrals/Claims 432-0250
Inpatient Care Facility 432-0001

Food for Your Bones
continued from page 1

Include at least three servings daily of high calcium foods (300 mg or more) such as milk, fortified juice, fortified soy milk, or yogurt. These would provide about 900 mg of calcium which, when combined with other foods throughout the day (which typically provide around 200-300 mg calcium) would add up to 1100-1200 mg daily. Of course, many people choose to augment calcium intake with supplements (see page 7).

Vitamin D intake should not be overlooked. Adequate intake of this nutrient can be difficult, as few foods naturally contain vitamin D (examples are fish liver oils and egg yolk). The Daily Value for Vitamin D of 400 IU must be achieved through fortified foods, supplements or sensible exposure to sunlight.

Other dietary factors affecting bone health are protein and sodium, although the role of protein in bone health is being re-examined. While diets high in protein and sodium have been shown to cause more calcium loss in the urine, a recent study has shown a beneficial effect of a high protein diet in the repair of bone loss in the elderly if adequate calcium and vitamin D are also supplied.

Recommended calcium intakes:

- 1300 mg for ages 9–18
- 1000 mg for adults 9–50
- 1200 mg for older adults
- 1500 mg for postmenopausal women not taking hormone replacement therapy

Bone is alive. Not simply the components of a rigid architecture on which the rest of our bodies is hung, our bones are growing tissue that continues constantly to remodel itself even after we have reached our full adult height. They allow us to move, protect our internal organs, and contain the marrow which produces our blood cells. Babies are born with 270 bones, some of which fuse; the normal adult body has 206 bones. These range in size from the tiny stirrup bones (about a tenth of an inch long) behind the eardrums, to the largest—the femurs (thigh-bones). Our bones make up about 20% of our body weight, with the heaviest single bone being the pelvis.

In the days when most of us lived to only 50 or 60, osteoporosis was not a major health concern. However, as the human life span continues to lengthen, paying attention to bone health has become increasingly important. While older people, especially older women, are the most likely to suffer the effects of weakening bones, it has been said that osteoporosis is actually a disease of youth—when bone mass is created—that manifests in old age. The good news is that keeping our bones healthy is not difficult and that we can enhance bone health throughout our lives. In this issue of yale health care, we offer some practical advice about doing just that.

As always, we welcome your comments. E-mail us at member.services@yale.edu with yale health care in the subject line.

Rhea Hirshman, editor

To identify foods with at least 10% of the Daily Value (reference amounts used on food labels—the Daily Value for calcium is 1000mg), look for the following FDA approved terms:

20% DV or more (200 mg calcium or more)
"High in calcium"
"Rich in calcium"
"Excellent source of calcium"

10% to 19% DV (100 to 190 mg calcium)
"Contains calcium"
"Provides calcium"
"Good source of calcium"

At least 10% DV (100 mg)
"Calcium enriched"
"Calcium fortified"
"More calcium"

Osteoporosis
continued from page 1

Women, particularly thin, small-framed women, are four times as likely as men to develop osteoporosis. Other factors which increase risk include: lack of calcium, lack of exercise, family history of osteoporosis, cigarette smoking, alcohol use, and use of certain medications, particularly steroids and some diuretics. Also, Caucasians and Asians are more prone to osteoporosis than African Americans. Osteoporosis can be easily detected by tests called absorptiometry or densitometry, which use a very low dose energy source to measure bone density.
Chief among the messages I heard at the 14th annual International AIDS Conference in Barcelona in July was one of pessimism, if not despair, about the prospects for the 95% of the world’s HIV/AIDS victims who live in countries where therapy is unavailable and where there are no effective prevention programs. The focus was on sub-Saharan Africa where more than 28 million are already infected. Our attention is also turning to Eastern Europe, East and South Asia, Central and South America, regions which—without radical interventions—will also be ravaged in the near future by AIDS.

Although there was a vociferous outcry about scarce funding and a lack of affordable generic anti-HIV medications, there is no reason to believe that these resources would be sufficient in the absence of strong national and regional leadership and a real local commitment to controlling the spread of this infection. To convey something of the scope of this international disaster: five million people were newly infected in 2001; in 2001 there were 40 million living with HIV/AIDS world-wide and the number of children orphaned by AIDS reached 14 million. While Uganda, Senegal, Brazil and Thailand give us hope that it can be done, woefully few nations have actually demonstrated the leadership and commitment to implement programs to prevent spread of HIV infection.

For the 5% of HIV infected people who live in North America and Western Europe, the message was very different. In the words of Dr. Stefano Vella, outgoing president of the International AIDS Society, “HIV has essentially become normalized, in the sense that it has become similar to other serious chronic diseases.” AIDS researchers presented many papers examining ways to leverage existing anti-HIV drugs through better combinations and by adding new drugs, better tolerated drugs and drugs that are started at different times in the course of infection.

While highly active antiretroviral therapy (“HAART”) has revolutionized the care of HIV in North America and Western Europe, the news is not all good. The drugs are very expensive, with serious limitations as well as significant

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Since those with low peak bone mass are at highest risk of osteoporosis later in life, reducing the risk of osteoporosis means building bone mass when young and holding on to it as we age. It is critically important that young people get adequate calcium and other nutrients and are physically active. For older people exercise, besides strengthening bones, also helps with coordination, thereby helping reduce the risk of falls that often lead to fractures.

There are several treatment options for osteoporosis. Hormone replacement therapy is often recommended for menopausal women, as it has been shown to increase bone mass and reduce the incidence of fractures. However, there are potential risks with HRT and it may not be the best option for everyone. The recently published Women’s Health Initiative trial showed a lower rate of hip fractures but elevated risks of heart disease and breast cancer in women on both conjugated equine estrogens and medroxyprogesterone every day (continuous combined therapy). Data are still pending for women taking only estrogen.

Another treatment is raloxifene (Evista), a selective estrogen receptor modulator (SERM). This class of drugs mimics some of the actions of estrogen. Raloxifene builds bone without affecting the endometrium (lining of the uterus) and breast tissue. Non-hormonal options include the bisphosphonates, primarily alendronate (Fosamax) and risedronate (Actonel). These may be taken once a week. Recent research has demonstrated that another bisphosphonate—zolendronate—may be effective. It is given intravenously every 6-12 months for those who cannot tolerate the oral medications. All three classes of drugs—hormone therapy, raloxifene and bisphosphonates—act by slowing bone reabsorption and all work best when taken with appropriate calcium supplementation.

Although some individuals are at higher risk for osteoporosis, preventive measures can reduce the danger of the disease. Stay physically active, eat a diet that includes calcium and/or take calcium supplements, and get adequate Vitamin D. As always, discuss concerns about osteoporosis with your clinician.
**YALE HEALTH ONLINE**

Departments currently available via Yale Health Online are: Allergy, Contact Lens, Nutrition, Ob/Gyn, Ophthalmology, Pediatrics, Student Medicine, and Travel. Contact us at www.yalehealthonline.yale.edu

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**Q. What is Yale Health Online?**

A. Yale Health Online is your Internet connection to the Yale Health Plan — a version of a web-based medical communications service tailored for the Yale community.

**Q. What services are available?**

A. Yale Health Online allows you to manage many details of your medical care on line — securely, confidentially and at your convenience. Services include:

- **Front Desk** lets you request appointments and update personal information.
- **Consultation Room** allows you to send secure messages to your health care team.
- **Health Library** offers information about Yale University Health Services as well as links to services, forms and other pertinent information.

**Q. Do I need special equipment to use Yale Health Online?**

A. No. You can use Yale Health Online from any personal computer, as long as you have an Internet service provider (ISP) and an Internet browser.

**Q. How can I try Yale Health Online?**

A. Connect to the Internet, open your browser and type in www.yalehealthonline.yale.edu. This will bring you to the Yale Health Online web site. Click on **Guest Visit** and look around.

**Q. How do I register?**

A. Connect to the Internet and open your Internet browser. In the address box, type in [www.yalehealthonline.yale.edu]. This will bring you to the Yale Health Online web site. You will have three options: **Member Login**, **Guest Visit** and **First Time Registration**. Click on the link that says **First Time Registration**. Complete the brief registration form, and then click **Submit** at the bottom of the form. After you register, you will receive your user name and password by postal mail. To ensure privacy, you will need to use these each time you log on to Yale Health Online.

**Q. Is the site secure and private?**

A. Yes. All information that goes back and forth is encrypted and completely secure. YUHS incorporates the latest Internet security and best practice methodology into Yale Health Online service offerings.

**Q. Am I required to use Yale Health Online?**

A. No. Use of Yale Health Online is totally voluntary.

**Q. If I have children enrolled in yh p, how do I use Yale Health Online to communicate about their care?**

A. You must set up a proxy account. To request a proxy account, go to our **Register Now** screen and click on “proxy account request.” To assure confidentiality and security, proxy accounts are available for children only between the ages of birth and 12. Dependents age 12 through 17 may not have their own accounts, nor can parents/guardians obtain a proxy account on their behalf. Students age 18 and older may be granted individual accounts. Accounts may be requested for an eligible dependent only through a proxy request.

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**By answering your questions, this column will help you get the most out of your YHP membership.**

Send your questions to:

**Member Services Q & A, Yale Health Plan, 17 Hillhouse Ave., P.O. Box 208237 New Haven, CT 06520–8237.** We’ll get them answered by someone “in the know.”
Most worrisome for North Americans is although there were reports of progress. Effective vaccine in the near future to toxicities. There is no prospect of an unnecessary. A number of studies looked at so-called "AIDS optimism" – an attitude that effective treatments should make "safer sex" unnecessary. AIDS optimism, psychological denial, adolescent rebellion, ignorance of the facts and sheer indifference, all contribute to unsafe behaviors. We cannot afford to be sanguine about the attitudes and behavior of young people – for example, our own students.

There is no current prospect of a cure for HIV/AIDS. The effective regimens – which do not cure the infection but can increase life span – are currently available to no more than 5% of those infected. Governmental, economic and health care infrastructures of most developing countries cannot now support effective HIV/AIDS treatment. There is no near-term prospect of an effective vaccine. On the other hand, HIV infection is absolutely preventable, transmitted only through unsafe sexual activity and contamination by infectious blood products and body tissues. We have seen models of behavioral change involving entire communities, notably gay men in the US and Western Europe in the 1980’s and in the countries noted above. Hence our twin global imperatives: 1) to prevent the spread of HIV/AIDS through education and support of local programs addressing the issue and 2) to bring effective treatments to the millions already infected by supporting programs to make anti-HIV drugs affordable and by encouraging regional and local health care systems.

Also, prevention begins at home. Our Office of Health Promotion and Education offers a prototype for peer-educator programs to reach students with the message of prevention. However young people do not view sexual activity as a "medical" concern and do not always heed the advice of health care professionals or even peer educators. But we know that adults contribute to the problem if they are indifferent or in denial that HIV/AIDS could happen close to home. Please don’t miss the opportunity to talk about HIV/AIDS with the young people in your life — children, students, or friends.
books/information

**BOOKS**

**STRONG WOMEN, STRONG BONES**

Miriam Nelson, Ph.D., with Sarah Wernick

This book looks at both bone health and bone disease. It provides information on everything from risks for bone loss to the "secret life of our bones" to simple strategies for making bones stronger. Especially helpful is a Q & A section with a wide range of questions about family history, vitamins, and workouts.

**BEETTER BONES, BETTER BODY**: **BEYOND ESTROGEN AND CALCIUM**

Susan Bronn, Ph.D., Director of the Osteoporosis Education Project

A comprehensive self-help program for preventing, halting and overcoming osteoporosis. Provides a detailed guide with ideas for small changes which can reap large benefits for bone health.

**STRONG WOMEN AND MEN BEAT ARTHRITIS**

Miriam Nelson, Kristin Baker and Ronenn Roubenoff

Lots of information about activities which we can add to our daily lives without having to join an exercise club. These activities can decrease the pain of arthritis. The authors offer clear and practical advice for increasing motivation as well as sound nutritional advice.

**WEB SITES**

- **www.strongwomen.com/** The web site related to the “Strong Women...” series of books, with lots of additional useful information and a link where you can subscribe to a free monthly e-mail newsletter.

**INFORMATION**

**Flee the Flu**

**FLU CLINICS AT YUHS**

Flu shots are available at no cost to YHP members and Medicare participants. Come to Urgent Care between 8:30-4:00 on any of these dates. For more information, call 203-432-0093.

- Wednesday, October 30 (retirees and Medicare participants only)
- Thursday, October 31 (retirees and Medicare participants only)
- Wednesday, November 6
- Thursday, November 7
- Wednesday, November 13
- Thursday, November 14
- Wednesday, November 20
- Thursday, November 21
- Wednesday, December 4
- Thursday, December 5

**OFF-SITE FLU/PNEUMOVAX CLINICS**

The influenza vaccine (the “flu shot”) is recommended annually and, for those 62 and older, the pneumococcal vaccine (Pneumovax, or “pneumonia shot”) is recommended approximately every five years. **This year, just for our retirees and Medicare participants, we have two new offsite clinics**, one in Hamden and one in Branford.

- **Wednesday, October 23, 2002**
  8:30 AM - 4:00 PM
  Miller Complex – Seniors Center
  2901 Dixwell Avenue, Hamden, CT

- **Thursday, October 24, 2002**
  8:30 AM - 4:00 PM
  Branford Evangelical Free Church
  231 Leetes Island Road, Branford, CT

Questions? Please call the Office of Health Promotion and Education at 203-432-4094.
CALCIUM SUPPLEMENTS COME IN MANY SHAPES AND SIZES

As with other nutrients, the body is better adapted to deal with high amounts of calcium from food than from supplements. For instance, large amounts of calcium supplementation may affect absorption of iron and zinc. However, calcium supplementation may be needed for those trying to achieve a high calcium intake such as postmenopausal women, who should have 1500 mg of calcium daily.

Below is a table showing some commonly available calcium supplements. Calcium carbonate yields the highest amount of calcium per tablet at the least expense. It is best taken with meals as the acid produced during digestion enhances absorption. Calcium citrate and calcium citrate malate may be better absorbed in those with low stomach acid. Chewable and liquid calcium are usually well absorbed, as they are broken down before they enter the stomach.

When choosing a calcium supplement, keep the following points in mind:

- Avoid those with dolomite or bone meal, which might contain small amounts of lead and other metals.
- If you don’t have a daily source of vitamin D (sunlight exposure, 2-3 cups of milk, or a multivitamin containing Vitamin D), choose a calcium supplement that contains vitamin D.
- If you are taking iron supplements, don’t take them at the same time as calcium as they compete for absorption.
- If you take more than one tablet daily, space them out throughout the day for better absorption.

MOVE YOUR BONES

Exercise plays an important role in bone health both before and after menopause. Young women who are active will enter menopause with a denser, stronger skeleton. Women who are in menopause can help minimize bone loss (and increase bone mass) by exercising.

Two types of exercise are important in maintaining healthy bones: weight-bearing exercise and resistance exercise. Many sports and daily activities combine features of both types of exercise.

Weight-bearing exercise means that the feet and legs bear the body weight and support the body against gravity. Examples include walking, jogging, tennis, aerobics and dance, stair climbing.

Resistance exercises improve muscle strength, increase muscle mass and strengthen bone. The best example is weight lifting with weight machines or free weights.

More exercise is not always better. Young women who over-exercise can reach a point where they may stop menstruating, reducing estrogen level maybe so much that healthy bones are compromised. These women may enter menopause with weaker bones than women who exercise more moderately.

Older people may have concerns about beginning an exercise program, and some medical conditions may restrict certain kinds of activities. While each individual should discuss any concerns with a clinician, most of us can benefit our bones by even a moderate program of walking several times a week.

### Table: Calcium Supplements

<table>
<thead>
<tr>
<th>TYPE OF CALCIUM SUPPLEMENT WITH SAMPLE BRANDS</th>
<th>AMOUNT OF ELEMENTAL CALCIUM PER TABLET (MG)</th>
<th>NUMBER OF TABLETS TO PROVIDE 1000 MG OF Ca</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium Carbonate</td>
<td>600</td>
<td>2</td>
</tr>
<tr>
<td>Caltrate 600</td>
<td>400</td>
<td>3</td>
</tr>
<tr>
<td>Ultra Mylanta Calcium Tabs</td>
<td>270</td>
<td>4</td>
</tr>
<tr>
<td>Extra Strength Rolaid</td>
<td>300</td>
<td>4</td>
</tr>
<tr>
<td>Turns E-X</td>
<td>500</td>
<td>2</td>
</tr>
<tr>
<td>One-A-Day Calcium Plus</td>
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<td>2</td>
</tr>
<tr>
<td>Viactiv</td>
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<td>2</td>
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<tr>
<td>Os-Cal 500</td>
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</tr>
<tr>
<td>Os-Cal Chewable</td>
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<tr>
<td>Calcium Citrate</td>
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<tr>
<td>Active Calcium Tablets</td>
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<td>5</td>
</tr>
<tr>
<td>Calcium Gluconate</td>
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<td>17</td>
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<tr>
<td>Calcium Gluconate 650mg</td>
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<td>22</td>
</tr>
<tr>
<td>Calcium Lactate</td>
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<td>8</td>
</tr>
<tr>
<td>Calcium Lactate 1000mg</td>
<td>85</td>
<td>12</td>
</tr>
<tr>
<td>Calcium Lactate 650mg</td>
<td>600</td>
<td>2</td>
</tr>
<tr>
<td>Calcium Phosphate</td>
<td>624</td>
<td>2</td>
</tr>
<tr>
<td>Calcium Phosphate 800mg</td>
<td>312</td>
<td>4</td>
</tr>
</tbody>
</table>

TABLE PREPARED BY DAVID BRZOZOWSKI, R.P.H., M.S. OF THE YUHS PHARMACY
EMPLOYEE WELLNESS FAIRS
YHP will offer health and wellness fairs for employees all around campus. Attractions include:
- Free flu shots
- Free cholesterol screenings
- Information on YHP services and benefits, including travel services, wellness programs, health education and nutrition.

Come talk with us on the following dates:
- **Tuesday, 10/22/02**
  10:00 AM to 2:00 PM
  Woolsey Hall (Presidents’ Room)
- **Tuesday, 10/29/02**
  10:00 AM to 4:00 PM
  Harkness Dormitory Lounge
- **Tuesday, 11/5/02**
  10:00 AM to 2:00 PM
  Kline Biology Tower (cafeteria area)
- **Tuesday, 11/12/02**
  10:00 AM to 2:00 PM
  Sterling Library

BREAST CANCER PROGRAMS

Free programs for the Yale community will be offered during Breast Cancer Awareness Month. Lunch will be provided. RSVPs are requested. For more information or to RSVP, call 203-432-1826. All programs are in the Presidents’ Room on the second floor of Woolsey Hall.

- **Wednesday, October 16, 12:00–2:00**
  Mammography and Beyond
  Carol Lee, MD
- **Wednesday, October 30, 12:00–2:00**
  New Options in Breast Cancer Treatment
  Donald Lannin, MD

NATIONAL PHARMACY WEEK

The YUHS Pharmacy will be marking National Pharmacy Week in October with demonstrations, give-aways and other activities. Watch for more information.

YHP Cancer Support Group
Life Options is a support group for adult YHP members diagnosed with cancer. regardless of type of cancer or stage of disease. The group meets weekly with a facilitator. There are three 15-week programs each year. Members can enroll in a consecutive series of meetings. Funded partially by the Edith S. Hallo Fund and by a small weekly fee charged to each participant. For more information, call 203-432-0290.

Adult CPR Classes
Adult CPR classes are held monthly. For information, call 203-432-1892.

Blood Pressure Checks
Tuesdays and Thursdays from 9:00–11:00 in room 406. Open to the Yale community free of charge, by referral or on a walk-in basis. For info, call 203-432-0093.

Cardiac rehabilitation to be covered. As of July 1 our members are covered for cardiac rehabilitation services ordered by a cardiologist or a cardio-thoracic surgeon and reviewed and approved by the YHP Care Coordination Department. For more information, contact Member Services at 203-432-0246 or via e-mail at member.services@yale.edu