



Weill Medical College of Cornell University

Food & Fitness Advisor[®]

Helping Women Live Healthier, More Active Lives™

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Why You Should Banish Belly Fat

Fat around your abdomen secretes chemicals that increase the risk for heart disease and other ills—losing it can lower your risk

Having a large middle is not just a cosmetic issue—it's a health threat. The excess fat tissue that makes it tough to tighten your belt also encases your abdominal organs, secreting hormones, inflammatory chemicals, and fatty acids that increase your risk of heart disease, high blood pressure, insulin resistance, type 2 diabetes, and possibly some cancers. Many scientists now say a waist circumference of over 35 inches in women may be a better predictor of risk than a battery of blood tests. But this is one risk factor you can do something about. Because abdominal (*visceral*) fat is more metabolically active than the fat that sits on your hips and thighs, it's easier to lose. The best way to trim it is a combination of diet and increased aerobic exercise.

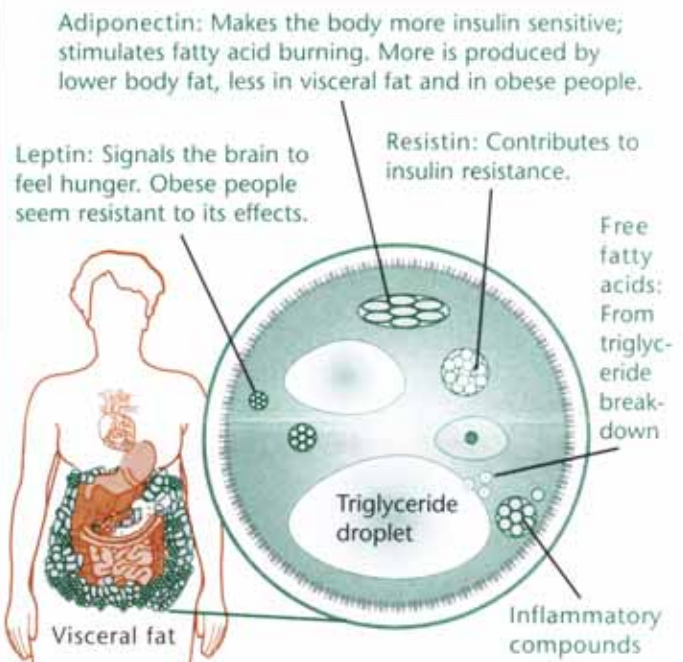
Fat is active, not passive

Recent research has revealed that fatty tissue is not an inert blob, but an endocrine organ, and a surprisingly active one, helping to regulate many metabolic functions. Fat cells are stuffed with droplets of *triglycerides*—fats that are constantly being broken down into *free fatty acids* and released into the bloodstream. Normally, the body burns free fatty acids as fuel (along with *glucose*). But when you have too many large fat cells and a high triglyceride level, it leads to an excess of free fatty acids. The fatty acids secreted by visceral fat go straight to the liver, where they affect cholesterol and triglyceride pro-

duction. Elevated triglycerides in the blood also contribute to fatty plaques that narrow coronary arteries; the rupture of these plaques causes blood clots, which block the artery and can lead to a heart attack.

A study of 557 postmenopausal women (aged 48-76) followed for eight years found those with a waist measuring over 35 inches and elevated triglycerides (above 128 mil-

HORMONES & CHEMICALS SECRETED BY FAT CELLS



ligrams per deciliter of blood, or 1.45 millimoles per liter) had an almost five-fold increased risk of fatal cardiovascular events compared to women without those traits. "We found the combination of high triglycerides and an enlarged waist in women predicted a faster progression of atherosclerosis," says

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Obtain Osteo-Fitness

The right exercises can help keep your bones strong—and may even improve them

Evidence has been mounting that specific exercises can play an important role in keeping bones strong after menopause. The conventional wisdom had been that weightbearing exercise, such as walking, was critical to bone health. While walking improves cardiovascular risk factors, mobility, and general health, experts now say that, by itself, walking only helps maintain bone mass. What is critical is building muscle strength. A major study reported last year that a specific regimen of weight-training exercises done in a gym setting could not only help maintain bone mineral density (BMD) at fracture-prone sites, but also build it (see *Food & Fitness Advisor*, January 2005).

Another myth that has recently been dispelled involves weight loss. Overweight women tend to have a higher bone mass because of the extra “load” on bone. Fat also produces weak estrogens, and increased body fat is associated with higher levels of the hormone *leptin*, which animal studies suggest helps to

form new bone cells. It was widely believed that losing weight might also mean loss of bone. But a new study says that’s not the case. Women can lose significant amounts of body fat with aerobic exercise without endangering their bones—and may even improve them by adding strength training. Even a majority of women with limited mobility can do resistance exercises to strengthen muscles around vulnerable joints.

Lose fat, not bone

The discovery that losing body fat doesn’t always lead to bone loss came from a study conducted as part of a large, ongoing clinical trial called the Senior Hypertension and Physical Exercise (SHAPE) study. Researchers at Johns Hopkins randomly assigned 115 men and women aged 55-75 to follow exercise recommendations from the National Institute on Aging and their



usual diet for six months, or participate in a supervised exercise training program for 60 minutes three times a week. The program consisted of stretching, resistance training with weights, and aerobics using a treadmill, bicycle, or stair stepper, designed to work all major muscle groups,

and strengthen the heart and circulation. Both groups were given the American Heart Association’s Step 1 diet.

After six months, participants in the exercise program showed improvements in upper and lower body strength, total strength, lean mass, body weight, and a decrease in total and abdominal body fat. The exercisers also reduced dangerous abdominal fat (measured by magnetic resonance imaging) by 20 percent. Much of the fat loss was offset by increased muscle mass, so the group’s average weight loss was only around four pounds, according to the study in the June issue of the *American Journal of Preventive Medicine*. No such improvements were seen in the control group. Overall, there was not much change in

Photo courtesy Robert A. Swerzey, MD

SAMPLE OSTEOPHYSIC EXERCISES

Here are six exercises that can promote osteo-fitness. They can be done standing, with an exercise mat, or sitting in a chair if mobility is impaired. You can use a lightweight, medium-sized vinyl ball inflated 3/4 of the way for these exercises.

Upper back strengthener: With your back to a wall, stand with your feet about 12 inches apart, knees slightly bent, holding the ball. Put your hands behind you, placing the ball against the wall behind you at buttocks level and the palms of your hands flat on the ball. While keeping pressure on the ball with your hands, step forward approximately 1-2 inches. Keep your head erect, with the chin slightly tucked in, pelvis “pinched” (by squeezing your buttocks muscles gently). Take a deep breath, and push the ball with your hands and arms with increasing force. Do not lean your body into the ball. Your buttocks should not touch the ball. As you push on the ball, exhale and slowly count out loud: “Push 1, push 2, push 3, push 4, push 5.” Feel your upper back and arms tighten. While keeping your hands in place, lean against the ball, relax and count out loud from 1001 to 1005. Repeat once. This exercise is key to posture control. It maintains strength in the upper back muscles, which help to maintain upright posture. It also minimizes the risk of spinal compression fractures and dowager’s hump formation.



Abdominal toner—Sit down version: Sit in an armless chair that provides good back support. Place the ball on your lap. Move 4-5 inches from the back of the chair and sit upright (you may use a pillow behind your back for support). Place your elbows, forearms, and fists against the ball. Bring your chin in slightly, do a pelvic “pinch,” and take a deep breath. Lift your knees against the ball by raising your heels off the floor. Squeeze the ball between your forearms and your thighs with increasing force as you count out loud, push-1 to push 5. Relax your thighs by lowering one leg at a time to the floor, counting out loud from 1001 to 1005.

Repeat one more time. These exercises help protect your back, strengthen and tone your abdominal muscles, as well as aid the arms and shoulders.



WHAT YOU CAN DO

To avoid or lessen bone loss:

- Make sure you get at least 1,200 mg of calcium and 600-800 IU of vitamin D every day, regardless of whether you are taking osteoporosis medication.
- Ask your doctor what form of strength-training and aerobic exercise would be advisable for you.
- For more information, see the web site of the National Osteoporosis Foundation, www.nof.org

bone mineral density (some women lost small amounts of bone around the hip), says lead author Kerry Stewart, EdD, professor of medicine and director of clinical exercise physiology and heart health programs at Johns Hopkins. "However, when we analyzed the data further, we found women who had the greatest increases in fitness showed improvements in bone at several sites. In particular, they gained bone mass slightly at the femoral neck (top of the thigh bone) and at the hip. That's a very vulnerable area," reports Stewart. Those who exercised the hardest gained around 1-2 percent in bone mass. But even if bone mass does not increase with exercise, becoming stronger will aid balance and help prevent the falls that lead to fractures, Stewart adds.

Play ball

Although strength-training has been shown to benefit older people, some may have limited mobility or may have already experienced fractures, so conventional weight-training may not be safe. An exercise regimen that can be done sitting down or standing up, using an inflatable vinyl ball, can pro-

vide strengthening without risk, says rheumatologist Robert A. Swezey, MD, director of the Osteoporosis Prevention and Treatment Center at the Swezey Institute in Santa Monica, California.

Dr. Swezey designed and patented an exercise tool he dubbed the OsteoBall to accommodate such limitations. "When you get older, you may have neck, back, knee, or other problems, so we wanted to create a routine that could accommodate physical limitations," says Dr. Swezey. "We tell women to do half of the 10 exercises one day, half the next. So it's very doable in terms of the time you spend. As you get stronger, you can squeeze the ball harder. It's progressive resistance."

A small study by Dr. Swezey in the *Journal of Rheumatology* in May 2000 found that performing the exercises for 10 minutes a day strengthened the muscles of the neck, back, and upper and lower extremities. While the study of 20 women aged 56-69 did not include bone density scans, it did find increases in a blood marker of bone formation called *bone alkaline phosphatase*. "This shows the body is actively making bone. When you measure BMD, you get only part of

the package. You can see if you gained bone, but not the structure and quality of that bone. So you can't see all the benefits you may be getting," remarks Dr. Swezey. (The OsteoBall is available at www.cequal.com)

If you're over 55 and start a combined aerobic and strengthening exercise program, you can expect to lose body fat, but not bone. You'll not only improve strength and balance, but the strength of your bones may increase as well. 🍎

Inner thigh toner:

Sit upright 4-5 inches from the back of your chair, and place the ball between your knees. Tuck your chin in and do a "pelvic pinch." Take a deep breath. Slowly and steadily squeeze the ball firmly between your knees. Increase the force as you exhale, counting out loud: "Push 1, push 2, push 3, push 4, push 5." Relax your knees while holding the ball as you count out loud from 1001 to 1005. Repeat one more time. This exercise strengthens the muscles of the inner thighs and hips. Inner thigh muscle strength is important for balance and hip fracture prevention. (The OsteoBall is used in this illustration.)



Quadriceps strengthener:

Place your chair facing a wall, approximately 18 inches away from the wall. Sit in the chair facing the wall, sitting upright against the back of the chair, feet flat on the floor. Tuck your chin in, and do a pelvic "pinch." Hold the ball in your right hand and place it on top of your right lower leg. Keep your left foot on the floor. Lift your right leg until the ball touches the wall. Keep your head erect and steadily push the ball against the wall with the lower part of your leg. Exhale as you slowly count from 1001 to 1005. Repeat one more time. Switch legs and repeat two times on the opposite side. The quadriceps muscle is very important for balance and knee joint protection. This exercise strengthens the muscles that work and support the knee joint.



Marina Terletsky (Source: OsteoBall User's Manual, copyright Robert A. Swezey, MD)

In your article on reflux disease in the May *Food & Fitness Advisor*, you suggest avoiding certain foods to reduce symptoms of heartburn. My heartburn is worse at night and I have trouble sleeping. It's gotten so bad that I have asked my doctor for sleeping pills. I have already elevated the head of my bed. What else can I do?



DID YOU KNOW?

Lab experiments in Italy have found that a chemical found in red grapes, *resveratrol*, blocks replication of the flu virus. Resveratrol is an antioxidant chemical also known to have cardioprotective effects. Cell culture research conducted at the Institute of Microbiology in Rome found that resveratrol had the greatest effect when administered three hours after exposure to the influenza virus. Smaller but significant effects were seen if the chemical was administered six hours after infection by the flu virus. However, after nine hours, exposure to the phytochemical had no effect, and pre-treating cells with resveratrol did not change susceptibility to infection. Studies in a mouse model of influenza found injections of resveratrol after an inoculation of flu virus increased survival by 40 percent compared with placebo injections. In addition, the level of virus found in the lungs of the mice six days after being infected was 98 percent lower in those treated with resveratrol. Viruses such as influenza infect specific types of cells; they replicate within those cells and infect others nearby. Resveratrol appears to interfere with key functions in the infected host cells needed for the virus to replicate, the authors report in the May 15 *Journal of Infectious Diseases*. The studies are promising, says lead author Dr. Anna Teresa Palamara, and warrant further investigation of resveratrol "as a potential weapon for combating the growing threat of influenza." Each year, influenza viruses claim 250-300,000 lives around the world, according to the World Health Organization.

If you drink a lot of carbonated soft drinks, you may want to switch to water or another beverage. A survey of more than 15,000 American adults about heartburn symptoms revealed that those who drank soda had more nighttime heartburn pain. The problem with soft drinks is their high acid content—even higher than that of coffee. In addition, carbonation introduces carbon dioxide into the stomach, increasing pressure and the risk of acid reflux. You should avoid drinking sodas with dinner or during the evening. If you are taking a benzodiazepine sedative as a sleeping pill, such as *Xanax (alprazolam)* or *Ativan (lorazepam)*, it could be making things worse, according to the report in the May issue of *Chest*. Benzodiazepines may relax you and help you sleep, but they can lower the pressure of the esophageal sphincter, allowing stomach acid to leak. Newer sleeping pills may not cause this problem to the same degree. You did not mention whether you are being treated for your heartburn. Nighttime symptoms may be a sign of more severe *gastroesophageal reflux disease (GERD)*. Taking a proton pump inhibitor, either prescription drugs such as *Nexium* or the over-the-counter drug *Prilosec OTC*, can not only reduce the amount of acid your stomach produces, but also heal damage to your esophagus. Ask your doctor what type of medication may be right for you.

I have been drinking calcium-fortified orange juice so that I will need to take fewer calcium supplement pills. But I recently read in the newspaper that calcium in orange juice may not be absorbed by the body. Is this true?

The study you read about compared the absorbability of two types of calcium added to two national brands of orange juice. Researchers at Creighton University Medical Center in Omaha, Nebraska, gave 25 healthy women (aged 21-45) two test servings of juices on separate days with their breakfast after an overnight fast; each serving of juice provided 500 mg of calcium. The researchers took blood samples to measure how well the calcium in each juice was absorbed. On average, absorption of the *calcium citrate maleate* in one juice was 48 percent greater than the combination of *tricalcium phosphate* and *calcium lactate* in the other product, according to the report in the May issue of the *Journal of the American Dietetic Association*. Problems with a nutrient's degree of absorbability are not limited to orange juice or to calcium, stresses lead researcher Robert P. Heaney, MD, professor of medicine at Creighton. He suggests eating more foods naturally rich in calcium, such as low-fat dairy products and leafy, dark-green vegetables. (By the way, this study was partially funded by Tropicana, which makes the orange juice containing the better-absorbed calcium.)

COMING SOON

New "functional" foods—Do added ingredients add any benefits?

Fitness trends for people over 50

How to avoid a back attack

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