



HEALTH

Women's Health Issues

no. 9.360

by J. Anderson, L. Young and S. Prior¹

Quick Facts....

Diet and exercise are two ways women can achieve greater bone strength and slow down age-associated bone loss.

Estrogen is a woman's natural protection against heart disease until menopause.

Women should evaluate their own health risks and discuss with their doctor whether menopausal hormone therapy is an appropriate choice.

Phytoestrogens (plant estrogens) may offer protection from health problems associated with menopause.

Coronary heart disease (CHD) is the leading cause of death in women over 50.

**Colorado
State**
University

Extension

Women's health issues have been gaining wide attention and are now at the top of the health-research agenda. Scientifically supported nutrition information is being provided to help women understand ways to prevent disease and maintain health. Some advice creates more questions than it answers. Trying to sift through all the details can be overwhelming.

Questions that particularly concern women include:

- What are the benefits and risks of taking menopausal hormone therapy after menopause?
- Will a calcium supplement prevent osteoporosis?
- Are vitamin supplements beneficial to prevent disease?

Current nutrition research can help answer these questions and more.

Osteoporosis

Osteoporosis is a major public health problem. Women are most at risk for developing this often debilitating bone disease. Bones become strong as calcium and minerals are deposited from birth until around 30 years of age. The strength of bone depends on adequate calcium intake, yet many women don't consume enough calcium for adequate bone thickness.

After 30, bones naturally start to lose more calcium than is deposited. Therefore, the greater the bone strength achieved by high calcium early in life, the larger the reserve for later years. Low bone strength results in bones that break easily, particularly the wrist, hip and back. (See fact sheet 9.359, *Osteoporosis*.)

Menopause is considered a critical time for bone health. Most women experience a rapid loss of bone mass in the first five years following menopause. Diet and exercise are two ways that women can retain bone strength and slow age-associated bone loss. This includes consumption of calcium-rich foods and engaging in regular weight-bearing exercise such as jogging or walking. While weight-bearing exercise is effective in keeping bones strong, some women have physical limitations that prevent them from participating in this type of activity. Menopausal hormone therapy also slows down bone loss, however it is somewhat controversial. Discuss with your doctor whether this is an option to consider.

Smoking, excess alcohol, caffeine-containing beverages, some prescriptive medications as well as a high-sodium intake, have all been shown to increase bone loss.

Menopause

Menopause initiates unique risk factors in women for both osteoporosis and coronary heart disease. When a woman goes through menopause, there is a 70 percent decline in estrogen production. Estrogen is one of two major reproductive hormones that women's bodies synthesize.

Table 1: The National Institutes of Health recommendations for calcium intakes for women.

Pregnant/ breast-feeding	1,200-1,500 mg
Premenopausal (25-50 years old)	1,000 mg
Postmenopausal taking ERT (under 65)	1,000 mg
Postmenopausal not taking ERT (under 65)	1,500 mg
All women over 65	1,500 mg

(An 8-ounce glass of milk supplies about 300 mg of calcium.)

Table 2: Upping the antioxidant ante.

Vitamin	Foods
Beta carotene	Spinach, carrots, squash, broccoli, yams, tomatoes, cantaloupe, peaches, fortified grain products, kale, asparagus, pumpkins, apricots
Vitamin C	Citrus fruit and juices (oranges and grapefruit), strawberries, kiwi, cantaloupe, green peppers, raw cabbage, spinach, kale, broccoli, collard greens, tomatoes, oranges
Vitamin E	Vegetable oils, fortified cereals, dried apricots, meats

Source: Food Insight: Current Topics in Food Safety and Nutrition, International Food Information Council Foundation, Nov/Dec 1993.

The three most modifiable risk factors for CVD are cigarette smoking, high blood pressure and high blood cholesterol.

Besides its primary role in the reproductive cycle, estrogen plays a key role in helping bones absorb and retain calcium. Estrogen also positively influences women's cholesterol levels by increasing HDL, the so-called "good" cholesterol, and decreasing LDL, the "bad" cholesterol. After menopause, the drop in estrogen synthesis contributes to rapid bone loss, increasing the risk for osteoporosis and higher blood cholesterol level, which in turn increases heart disease risk.

Menopause Hormone Therapy (MHT)

Choosing a course of menopause hormone therapy, previously referred to as hormone replacement therapy, to treat hot flashes and other menopausal symptoms as well as to decrease the risk of osteoporosis can be a difficult decision. There are various types of MHT, such as taking estrogen alone or in combination with progestin, a form of progesterone. As research on postmenopausal women expands, new risks, benefits and alternatives to hormone treatment are being discovered.

MHT can cause complications for those who have liver, pancreatic or gallbladder disease or suffer from severe migraine headaches. If you have had breast cancer or have a family history of breast cancer, MHT is usually not advised. Estrogen and progestin have their good and bad sides. While both are necessary for reproduction, they can stimulate the growth of breast tissue and have the potential to promote development of cancerous tumors in breast tissue. Estrogen also stimulates endometrial growth (uterine lining) and may slightly increase risk for endometrial cancer. However, the combined therapy of estrogen with progestin has shown to counteract endometrial cancer risk.

In contrast to these risks, women who have a family history of osteoporosis or other risk factors for osteoporosis may benefit from MHT. Some doctors recommend initiating MHT with the onset of menopausal symptoms to help debilitating osteoporosis. Ethnic background might influence the decision. The risk for osteoporosis is higher in Caucasians. In contrast, African-American women are rarely at risk for osteoporosis. While estrogen supplements can delay bone mass loss, they cannot reverse or entirely prevent it.

Earlier research studies also suggested that MHT decreased coronary heart disease (CHD) risk in postmenopausal women. However, more recent research has indicated that taking MHT actually increases the risk for heart disease as well as for stroke and life-threatening blood clots. Lifestyle changes such as daily exercise and following a heart-healthy diet are more effective in protecting against heart disease. Women need to consult with their doctor to evaluate their other risk factors (family history, smoking, high blood pressure, diabetes) for heart diseases in order to determine how taking MHT may affect their risk factor for heart disease. If a woman's overall risk factor is very low, taking MHT to alleviate hot flashes, improve sleep and provide an overall better quality of life may be beneficial during menopause.

Cardiovascular Disease

Cardiovascular disease (CVD), which includes stroke and coronary heart disease, is the leading cause of death and disability in women. Women differ from men in their vulnerability to CVD. Also, the risk factors that predict cardiovascular disease risk and incidence differ in women.

Compared to men, women's onset of heart disease (CHD) is delayed about 10 years due to the presence of estrogen prior to menopause. Once women reach 70, their rates for CHD mortality catch up to men's. However, as women age, they have a greater chance than men to develop specific CHD risk factors, such as Type 2 diabetes mellitus, hypertension and congestive heart failure.

Phytoestrogens

Phytoestrogens, or plant hormones, may offer protection from symptoms and health problems associated with menopause. If taken in large enough amounts, plant hormones may slow the onset of osteoporosis and temper menopause symptoms. And it appears they do this without negative side effects. Additionally, plant hormones may help reduce the risk of breast cancer, although further research is needed.

Three hundred plants with estrogen-like activity have been identified, including carrots, apples, dry beans, barley and oats. The highest source is soybeans.

The proposed benefits of phytoestrogens include helping to slow bone loss, lowering total serum cholesterol and raising the HDL level, reducing the thinning of vaginal tissues associated with cessation of menstruation, and lessening menopause symptoms like night sweats and mood swings.

Research has concluded there is little or no evidence to link caffeine and fibrocystic breast disease or breast cancer.

The three most modifiable risk factors for CVD are cigarette smoking, high blood pressure and high blood cholesterol. Physical activity, weight maintenance, and a heart-healthy diet have been shown to prevent the development of CVD. Furthermore, studies show that the benefits of taking a daily dose of aspirin to prevent CVD outweigh the risks of side effects, such as gastrointestinal bleeding. However, consult your physician to determine whether or not aspirin therapy is a good choice for you and also to identify the appropriate dose.

Breast Cancer

It is not clear whether a high-fat diet is associated with breast cancer. Overweight or obese women are thought to be at greater risk for developing the disease. With increased weight, there are greater amounts of estrogen produced by the body. Just as estrogen in HRT increases breast cancer risk, high amounts of estrogen produced by women before menopause may also increase the risk of breast cancer. One recent study suggested the red meat and processed meat consumption may be linked to breast cancer, as well. However, further studies are needed to confirm this finding. (British Journal of Cancer, April 2007—UKWCS).

Studies on breast cancer incidence reveal rates in American women are much higher than in women of other populations. Women from Mediterranean areas, where olive oil and fish oil comprise a large part of the diet, have less breast cancer, even though caloric intake from fat is higher than for American women. Also, women who live in sunnier areas tend to have a lower incidence of breast cancer. This prompted several new studies, which indicate that Vitamin D may be protective against breast cancer.

Dietary Fiber

Research suggests that some women who eat large amounts of fiber have lower incidence of breast cancer. Insoluble fibers such as bran, obtained from unprocessed grains, provide the most protection. Soluble fibers such as apples, beans and oatmeal also appear to offer protection. The role fiber plays in breast cancer prevention may stem from its ability to decrease levels of circulating estrogens. High levels of estrogens may promote the growth of breast tumors.

Diets high in fiber have also been linked to a lower incidence of heart disease and possibly colon cancer. Studies show mixed results in relation to colon cancer. The average American consumes about 14 grams of fiber per day. For women aged 19 to 50 years, the recommended daily fiber intake is 25 grams. For women over 50, the recommended daily fiber intake is 21 grams. Dietary fiber may be helpful in weight loss, as well, since it promotes a feeling of satiety.

Caffeine

Caffeine is one of the most thoroughly investigated ingredients in the food supply, including its effects on women's health. Health concerns associated with caffeine include ulcers, fibrocystic breast disease, cardiovascular disease, heartburn, cancer and birth defects.

The body absorbs caffeine rapidly and, in turn, normally removes it 10 to 14 hours later. People differ greatly in their sensitivity to caffeine. Caffeine stimulates the brain, increases alertness, increases passage of food through the digestive system, increases stomach acid and heart rate, and relaxes certain muscles. Caffeine can relax the passageway that leads to the stomach and cause heartburn. The amount of caffeine consumed can influence whether or not any of these effects will occur.

Health concerns specific to women and caffeine include breast cancer, fibrocystic breast disease and osteoporosis. After careful review, there is not adequate evidence to link breast cancer with caffeine consumption.

References

Asanovic, S., Nutrition Updates, *Spring 1995*, p.5.

Caffeine and Health; Clarifying the Controversies. International Food Information Council.

Harvard Women's Health Watch. March 1995, April 1995, May 1995.

Women's Health Connection. Vol. 1. Number 3, August/September 1993.

Tufts University Health and Nutrition Letter. March 2002, December 2002. July 2006.

American Heart Association. "Evidence-Based Guidelines for Cardiovascular Disease Prevention in Women: 2007 Update." Circulation. 2007;115:1481-1501.

Duyff, Roberta Larson. American Dietetic Association Complete Food and Nutrition Guide, Revised and Updated 3rd Edition. New Jersey: John Wiley and Sons, Inc, 2006.

Summary

Nutrition can play a key role in health problems that are special to women. The Dietary Guidelines for Americans and the Food Guide Pyramid were created to help Americans plan dietary goals that promote health and prevent disease.

Women can use these tools to plan a diet that includes anti-oxidant-rich fruits and vegetables, provides adequate fiber, is low in fat and dietary cholesterol, and provides the needed calcium. Building a pyramid diet each day is the easy way to practice good eating and help keep extra pounds off your body as you age.

See 9.306, A Guide for Daily Food Choices.

An even more discussed concern over caffeine intake by women is the incidence of fibrocystic breast disease. Also known as benign breast disease, it is characterized by benign fibrous lumps and breast tenderness. It was once thought to be the result of caffeine in the diet. Some women report decreased tenderness with elimination of caffeine, but this is not universal. The largest study to date concluded that there is no evidence of a connection between fibrocystic breast disease and caffeine.

The case of caffeine and osteoporosis is more convincing. Caffeine is a diuretic, meaning it increases urine output. Therefore, with increased intake, we can lose more minerals like calcium in the urine. For women at risk for osteoporosis and postmenopausal women, this can pose a problem. It has been reported that postmenopausal women who drink just two cups of coffee per day have associated bone loss. However, this connection was made only with women taking less than 800 mg of calcium per day. If you drink caffeinated beverages, ensuring adequate calcium intake is important.

Nutrient Supplements

There are many vitamin and nutrient supplements on the market that manufacturers claim will enhance health and help reduce the effects of aging and degenerative diseases. Antioxidant vitamins, in particular, are receiving widespread attention. Evidence suggests that antioxidant vitamins C, E and beta-carotene (a precursor to vitamin A) may reduce the risk of some forms of cancer, heart disease, strokes and cataracts, as well as slow the aging process.

Antioxidants "mop up" free radicals that are produced by the body during normal cellular activity. Free radicals travel through the cell and change the structure, causing cellular damage. Such damage is believed to contribute to aging and various health problems.

Antioxidant vitamins are found in fruits and vegetables and in many other foods. Women who eat large amounts of antioxidant-containing foods, such as carrots and spinach, have demonstrated a decreased risk for heart attack and stroke compared to women who eat few such foods. However, antioxidant supplements have not been shown to provide the same benefits and are not recommended to prevent CVD. Women at high risk for cardiovascular disease may benefit the most from eating more antioxidant-rich fruits and vegetables.

Until further conclusive evidence is available, eating a balanced diet rich in antioxidant vitamins may be the best way to receive possible health benefits. Include antioxidant-rich foods in your diet, and remember to eat five servings of fruits and vegetables each day. This is an easy way to get your antioxidant nutrients naturally.

Eating fruits, vegetables and enriched whole grains and cereals also increases folacin. Folacin or folate is important for preventing neural birth defects. Women of child-bearing age should get 0.4 mg per day. Folate also lowers homocysteine levels. High homocysteine levels increase risk of heart disease. Like antioxidant supplements, folic acid supplementation (synthetic folate) is not recommended to prevent CVD. Again, focus on incorporating more fruits, vegetables and enriched whole grains and cereals into your diet.

¹J. Anderson, Colorado State University Cooperative Extension foods and nutrition specialist and professor; and L. Young, M.S., former graduate student, food science and human nutrition.