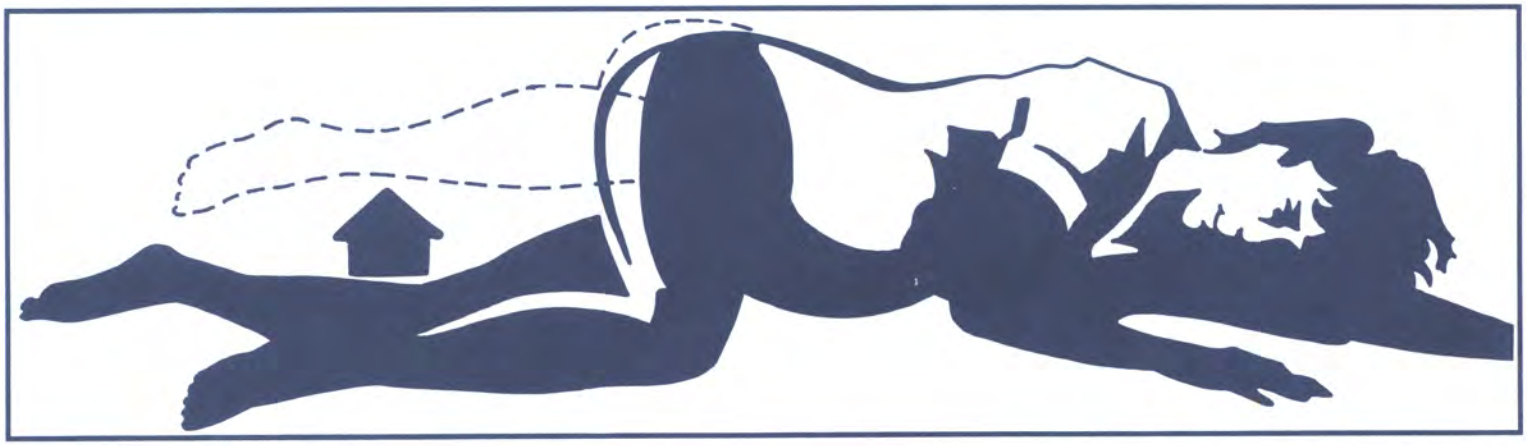
Hughston Health Alert

6262 Hamilton Road P.O. Box 9517 Columbus GA 31908-9517

VOLUME 6, NUMBER 1 | *For a Healthier Lifestyle* | WINTER, 1994



Exercising For Two

Expectant mom and baby - What can they do?

Times have changed. No longer is pregnancy considered a diseased state during which the woman must lie down for nine months. Pregnant women can stay involved in their careers and their leisure activities.

Inside This Issue:

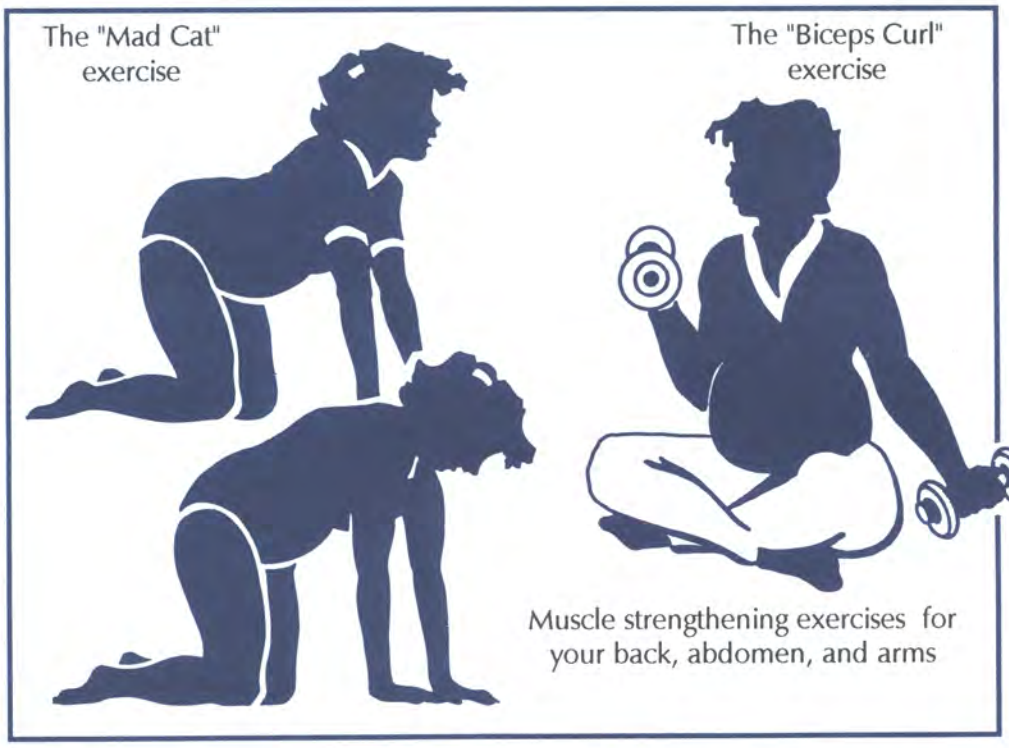
- Child and Adolescent Gymnastics
- Athletic Amenorrhea
- Body Composition
- Nutrition Supplements
- Opportunities for Women in Athletic Training
- Women's Health Trial

With few restrictions, the average pregnant woman should continue her daily routine as much as possible including an exercise program. Pregnancy is a time to maintain but not to strenuously increase your physical fitness level. It is a time to listen carefully to your body and modify your exercise program as the body changes.

Guidelines for exercise

The American College of Obstetricians and Gynecologists has provided a guide to safe exercise limits for the pregnant woman. In summary, these guidelines state the following:

- Do not do supine (flat on the back) exercises after the beginning of the fourth month of the pregnancy. The major vein that returns the blood from the lower limbs to the heart lies along the mother's right side, under the baby and uterus. When lying on her back, the mother shifts the weight of the baby onto the vein and decreases the blood flow like a pinched garden hose. The best position for an expectant mother is to lie on her left side so that the weight of the baby shifts away from this blood vessel.
- Make twisting motions and movements that require good balance carefully. Because the expectant mother's center of gravity changes as the baby grows, it throws her sense of balance off and may cause her to fall more easily. Being able to balance well is important in aerobics classes, which often include quick changes of body position and direction.
- Your heart rate should stay lower than 140 beats per minute (bpm) even during exercise. A good way to find your pulse is to place the fingertips of your right hand on the thumb side of your left wrist. Another way is to touch the corner of your eye



and run your fingertips down to locate the pulse in your neck just below the jawline. You can count the beats per minute using a watch with a second hand.

- Your core, or internal, temperature should not rise above 102° F so monitor where and how intensely you exercise. A high core temperature can cause some birth defects. Exercise during early morning or late evening rather than the middle of a hot day. Also, exercise indoors if the outside temperature is hot.
- Drink plenty of fluids, especially water, so you will not become dehydrated. All people should drink one 8 ounce glass of water for every pound of scale weight that they lose during exercise.

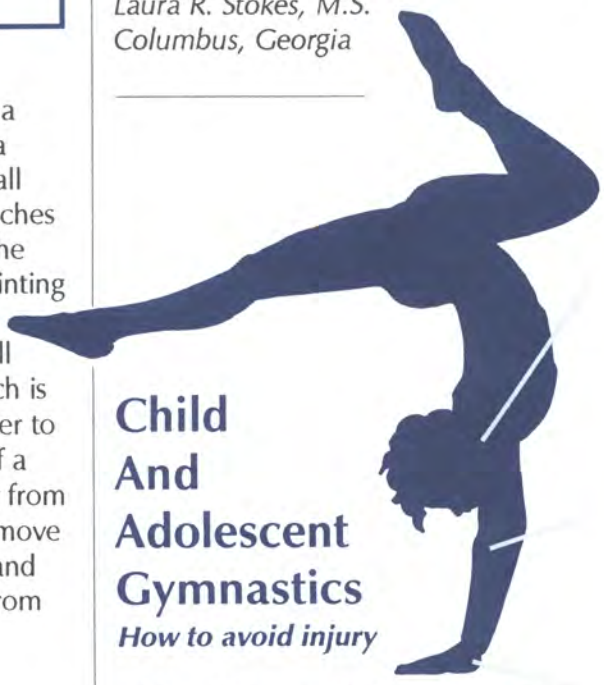
The pregnant mother can participate in her existing program or routine or in a prenatal fitness class. Prenatal fitness classes should include flexibility or stretching exercises for the back and legs. Many pregnant women get muscle cramps in their legs, particularly their calves. The best way to prevent this is to stretch the heel cords daily, especially at night before going to bed. To do this stretch, first place your hands on a wall. Next, place your right foot a comfortable distance from the wall and place the left foot about 6 inches from the wall. Finally, lean into the wall. Make sure your toes are pointing directly toward the wall. You should feel a gentle stretch or pull through the right calf. If the stretch is too much, pull the right foot closer to the wall. If there is not enough of a stretch, move the right foot away from the wall. To stretch the left calf, move the left foot away from the wall and the right foot to about 6 inches from the wall. Repeat the exercise.

Training for motherhood

Muscle strengthening with emphasis on the back and arms should also be included in your exercise program. The growing baby and enlarging breasts add extra stress to your back. Also, after the baby is born, you will be carrying him or her in your arms, and the baby will be growing heavier very quickly. Include a cardiovascular or aerobic workout. This entails some sort of continuous activity that elevates the heart rate up to, but no higher than, 140 bpm. The best activities for many women are walking and swimming. Both of these activities place only mild stress on the joints.

Remember they do not call it labor for nothing. You would not run a marathon without training. The more fit you are, the better equipped you will be to withstand labor. Prenatal fitness will not shorten labor. However, if you are physically fit, you should be able to tolerate labor better and to return more quickly to your pre-pregnant state. As with any exercise program, you need to discuss your plans for exercise with your physician. Your obstetrician will provide the best individual guidance.

Laura R. Stokes, M.S.
Columbus, Georgia



Child And Adolescent Gymnastics

How to avoid injury

Now that your child wants to join his or her friends in gymnastics, what concerns should you have about injuries? Although children benefit physically, mentally, and socially from participating in this activity, they can develop injuries if they train too hard. Any part of the body can be injured if it is used too much. In gymnasts, the most common overuse injuries involve the shoulders, elbows, wrists, back, and ankles.

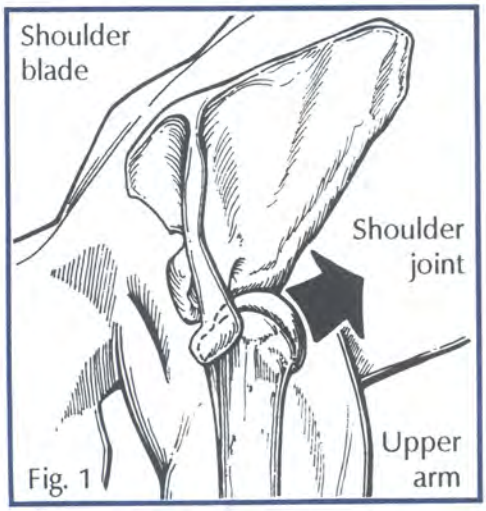


Fig. 1

In gymnastics, participants must develop flexibility, balance, and strength. The most successful gymnasts are those who are naturally flexible. However, exercising those naturally flexible joints too much, especially the shoulders, can make them become too loose. The ligaments, or tissue that holds bones together, can be stretched to the point that they no longer hold the bones in the correct position. For example, if the ligaments in your shoulder are stretched too much, they will not hold the arm in its socket when you move it certain ways. This allows your shoulder to dislocate, or come out of joint (Fig. 1). Dislocation can lead to serious injuries. To prevent dislocation of any joint, you need to strengthen the muscles surrounding that joint. When the muscles are strong, they will hold the joint together, even if the ligaments are stretched.

Back bends and other activities that cause the spine to curve backward can cause fractures of the spine in young gymnasts (5 to 7 years old). These fractures do not cause problems at that young age and may go unnoticed for years. However, teenagers who remain active in gymnastics may develop back pain because of these earlier fractures. Teenage gymnasts may need bracing or surgery to treat the fractures. A good way to prevent this injury is to not allow children to do deep back bends until they are at least 7 years old.

Activities such as vaulting and tumbling may cause the wrist to hyperextend, or bend back too far (Fig. 2). The bones of the wrist are forced back to the point of hitting the bones of the forearm. Having this happen over and over causes the wrist to become sore so that these activities are painful. Gymnasts may wear splints on their wrists during such activities to prevent their wrists from being forced backward so far.

Only in gymnastics do athletes bear all their weight on their arms. Handstands, vaulting, and other activities place tremendous pressure on the elbows (Fig. 3). The pressure can damage the joints and cause the contact surfaces to become soft or weak. The damaged areas may or may not be painful at first, but a piece of the bone or hardened cartilage may break loose in the joint. If the problem is detected before the piece comes loose, the athlete is told to rest and limit training activities. If the loose piece causes pain or causes the joint to catch, it is usually removed during surgery. The damaged surface of the bone can lead to problems in later life, like arthritis or joint degeneration.

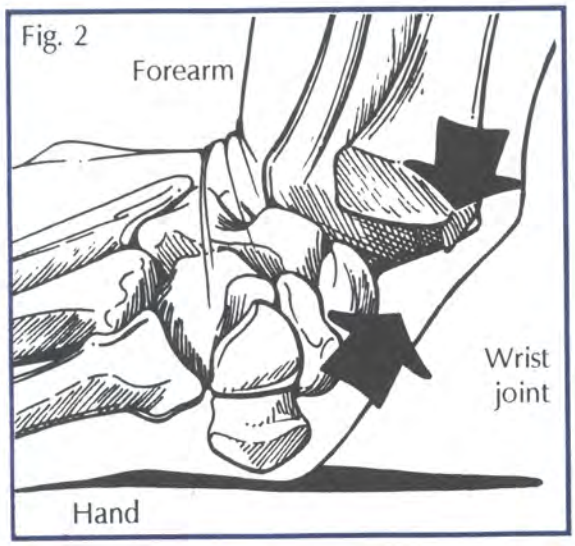


Fig. 2

During dismounts and landings, gymnasts can sprain their ankles or develop stress fractures, which are fractures that occur slowly from repetitive trauma and that cause a weak spot in the bone. Ankle sprains are first treated with splinting and rest. Next, athletes strengthen the muscles around the ankle, and then they study their landing techniques with their coaches so changes can be made. Stress fractures are usually treated by having the athlete rest and avoid hard landings on the affected leg.

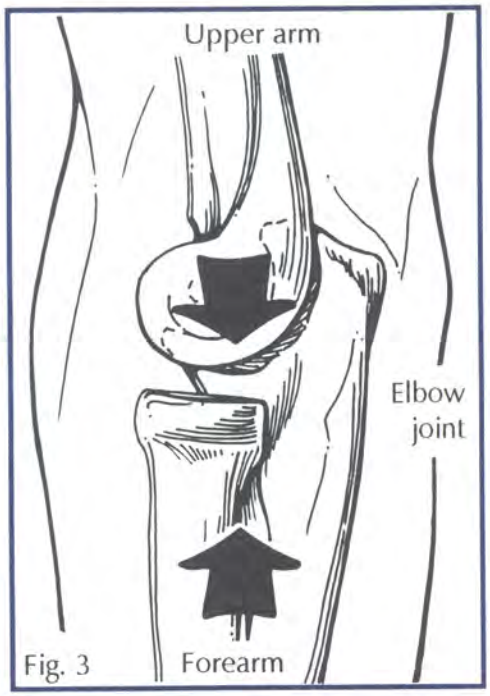


Fig. 3

When gymnasts train on one apparatus or in one activity continuously during a training session, they lose some concentration and tend to get injured more often. During long training sessions, gymnasts should change their activities and equipment many times to prevent injuries.

With proper supervision and conditioning, most of these young athletes will be able to enjoy participating in gymnastics for many years.

Ellen M. Raney, M.D.
Tampa, Florida

Athletic Amenorrhea

Many highly trained female athletes experience abnormal changes in their menstrual cycles, such as minimal or absent menstrual periods. While these girls and women may be relieved when they do not have monthly menstrual periods, they face health risks associated with this disorder which is called amenorrhea (pronounced ā-men-ō-rē-ă).

The two types of amenorrhea are primary and secondary. Primary amenorrhea means a girl has not had her first menstrual period by age 16. Secondary amenorrhea means a woman has not had a menstrual period in 3 to 6 consecutive months. Approximately 2% to 5% of all women have secondary amenorrhea, while the rate may be as high as 66%[1,2] among women athletes.

Exercise is not always the cause of primary or secondary amenorrhea. Amenorrhea may signal pregnancy, thyroid disorders, hormonal diseases, or structural abnormalities of the female reproductive organs. Women who have missed periods for several months should have a thorough physical and gynecologic examination to rule out other causes of amenorrhea before suspecting exercise.

What causes amenorrhea?

Physicians do not know exactly what causes amenorrhea, but high intensity training, poor nutrition, low body fat (less than 16%), and mental stress from competition seem to be associated with amenorrhea in athletic women.

Athletic amenorrhea may occur in a woman participating in any sport, but it seems to be associated more often with certain activities. When athletes participate in high intensity training and try to become excessively lean for sports such as gymnastics, figure skating, diving, ballet, and running, they may develop amenorrhea. These women may have as little as 7% body fat. Long-distance running and a loss of more than 10 pounds after beginning an intensive training program are associated with amenorrhea in some athletes.

The female athlete triad

Some competitive female athletes may have a combination of disordered eating (poor nutrition, anorexia nervosa, or bulimia), amenorrhea, and poor bone reformation (osteoporosis).[1,2] They combine disordered eating with exercise to attain a thin body. Their diets are associated with amenorrhea because the athletes lose fat that is essential to remaining healthy. Disordered eating may lead to deficiencies of iron, which helps the blood carry oxygen, and of calcium, which is necessary for healthy bones.

The calcium deficiency from disordered eating plus the abnormally low levels of estrogen that accompany amenorrhea weaken bones. This condition can make women more susceptible to premature osteoporosis, stress fractures, and more serious pelvic, hip, or spinal fractures.

Exercise causes temporary changes in the level of several hormones in women. These levels return to normal within two hours after exercising. Athletes who follow extremely strenuous exercise programs can have permanent hormonal change. With this permanent change, menstrual periods will become more infrequent and will eventually cease.

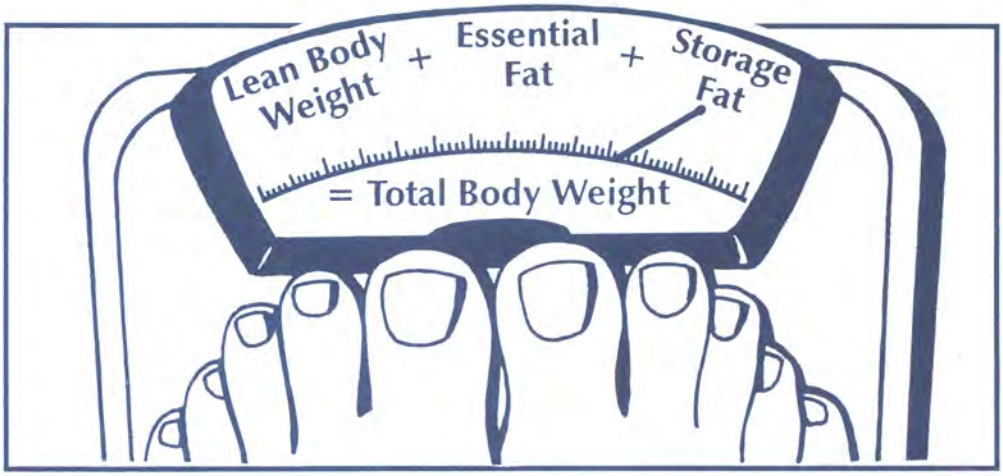
If you have been diagnosed with amenorrhea, you should decrease your activity level and gain weight. This treatment usually allows menstrual periods to begin again, but sometimes the results are not immediate. Often anorexic women have amenorrhea for several months after a significant weight gain. Having regular menstrual periods enables you to begin a healthier athletic career.

Girls and women should not be discouraged from exercising because they fear amenorrhea. Exercise rewards participants physically, socially, and mentally. Often the athletes with amenorrhea are those who place so much pressure on excelling that they ignore their health.

Suzanne M. Tanner, M.D.
Denver, Colorado

REFERENCES

1. American College of Sports Medicine. The female athlete triad: Disordered eating, amenorrhea and osteoporosis. Sports Med Bulletin 1993;28(1):6.
2. Jaffe R. Watch for the 'female athlete triad:' Eating disorders, amenorrhea and osteoporosis. Your Patient and Fitness 1993; 7(2): 18-20.



Body Composition

How Fat Is Fat?

When you step on a scale, the number of pounds you see includes fat, muscle, bones, water, etc. To accurately determine how overweight or underweight you are, you must analyze your body composition to discover how much of your body weight is lean (tissue that is not fat) and how much is fat.

What is Fat?

Fat is tissue that forms soft pads between the organs of your body, that smooths and rounds body contours, and that furnishes a reserve supply of energy. There are two types of fat: essential fat and storage fat. Essential fat is necessary for health and is stored in mammary glands and soft tissues like the brain, spinal cord, other organs, and cell membranes. Storage fat provides additional padding and energy reserve. Men need about 3% essential fat, while women need about 10%. Sex-related fat deposits, such as those in the breasts, give women a higher percentage of essential fat than men. Without essential fat, health deteriorates. Essential fat plus storage fat equals your total body fat.

True ideal weight can only be determined by assessing how much of the body is fat and how much is lean weight. It cannot be determined by comparing scale weight with height and size of body frame. There are many ways to determine body fat. Two common techniques are underwater weighing (fat is less dense than muscle and weighs less under water) and skinfold measuring. The results of these tests sometimes show that an overweight person is not overfat and an underweight person is not underfat. For example, a 314-pound football lineman may have 14% body fat, but a petite, small-framed female may have 30% body fat.

The American College of Sports Medicine recommends that between ages 20 and 29, a woman should maintain 20% body fat and ideally should gain only 1% body fat every 10 years thereafter. Generally, 22% to 26% is acceptable at any age. If a woman reaches 30% or more, she should work on a weight loss program.

Your Fat Thermostat

One idea about weight regulation called the "Fat Thermostat Theory" is based on the principle that the amount of body fat you have is regulated by your brain. A weight-regulating mechanism in the brain chooses the amount of body fat it considers ideal for our needs and protects it. According to this theory, the mechanism turns on and off like a thermostat in your home turns the air conditioner or furnace on and off. When you go on a very low calorie diet, you signal your thermostat that it needs to protect your body. For example, if you are overweight, your thermostat is used to having that amount of body fat. If you go on an extremely low calorie diet to lose weight, you generally become lethargic, tired, and irritable. These feelings occur because your very efficient regulating mechanism is slowing your body function down to protect that body fat. This is why it is very hard to starve yourself to death. The thermostat has a set point that is affected by what we eat and by our activity level. It will either conserve or waste energy to keep the level of fat.

Very low calorie diets are dangerous because your body can convert protein, found in muscle tissue, into energy much quicker than it can convert fat. You may lose some weight initially, but when that levels off, you will have lost mostly muscle.

To make your fat thermostat work properly eat in harmony with your weight regulating mechanism and exercise aerobically. First, eat at least three times a day. And second, at one of these meals you should eat until you are full. An ideal diet would be 65% carbohydrate, 15% protein, and 20% fat.

Exercise aerobically at least three times a week, preferably five times a week, for a minimum of 30 minutes each time. For a maximum weight loss program, exercise aerobically for at least one hour each time. Aerobic activities include walking, jogging, swimming, hiking, bicycling, and aerobic dancing.

Remember that controlling your body fat level is healthy, but trying to attain the popular but unrealistic thin image can lead to very dangerous disorders like anorexia nervosa or bulimia.

William Etchison, M.S.
Columbus, Georgia

NUTRITION

Nutrition Supplements

What's a woman to do?

More than one-third of the women in this country get fewer vitamins, minerals, and other nutrients than are recommended each day. Poor nutrition can lead to health problems. There are some ways to reduce the severity of these problems.

Anemia

Each day women need almost twice as much iron as men. The Recommended Dietary Allowance (RDA) for women is 18 milligrams of iron per day. Without the daily allowance, women can develop anemia, which is iron-poor blood. Iron helps your blood carry oxygen through your body. Many women take iron supplements because getting enough iron-rich foods is not easy. Iron can be found in red meat, dark leafy vegetables, dried beans, enriched breads, or fortified cereals. Eating foods high in vitamin C at the same time you eat iron-rich foods can help your body use more of the iron from the food. Likewise, the form of iron in meat, fish, and poultry is easier for your body to absorb. So you can absorb iron from meat better than from vegetables or bread. If you need iron supplements, take them before or just after meals that include meat protein and vitamin C so that you get the most from them.

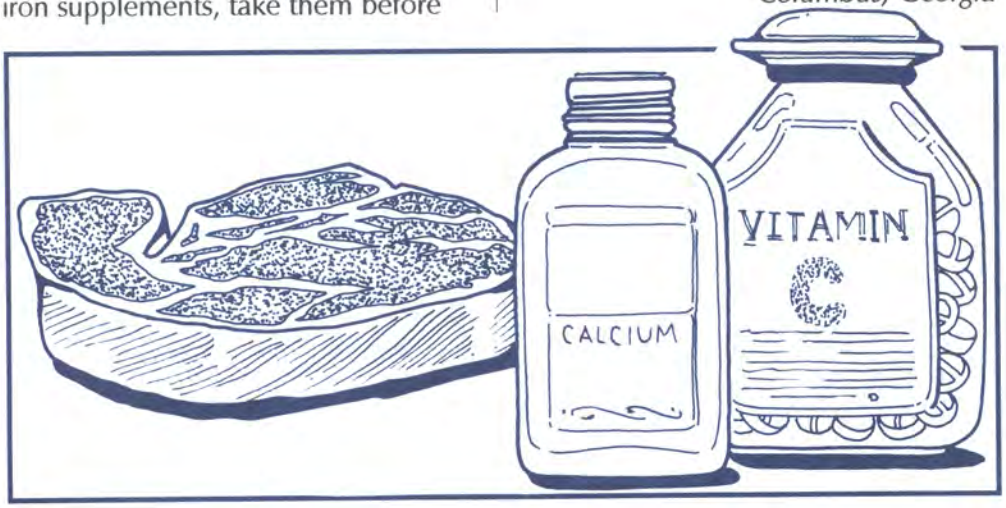
Osteoporosis

While a woman cannot undo years of not getting enough calcium, a nutrient that helps build bone, an effort at any point to rebuild bones will help. Eat enough calcium-rich foods to get 800 to 1,000 milligrams daily. Postmenopausal women may need up to 1,500 milligrams of calcium daily.

Taking calcium carbonate supplements is the best way to add extra calcium to your diet because the supplements contain the highest amount of calcium available. Be sure to read the labels of supplements before you take them. Some antacids that contain calcium carbonate also contain aluminum, which stimulates bone loss. Avoid calcium contained in dolomite and bone meal because these substances may be contaminated with lead. If you have a history of kidney stones, check with your doctor before taking any calcium supplements.

Before you change your diet or take supplements, talk to a registered dietitian or your physician. They can give you the best advice about the right diet and supplements for you.

Rae Jean Harris, R.D.
Columbus, Georgia



Opportunities For Women In Athletic Training

The field of sports medicine includes family practice and orthopaedic physicians, athletic trainers, physical therapists, exercise physiologists, biomechanists, nutritionists, and sports psychologists. People from these different backgrounds form a team that provides general medical care for athletes and is responsible for the prevention, treatment, and rehabilitation of athletic injuries. Now women can be found at all levels of sports medicine: at athletic contests giving first aid or emergency care, in a clinic or training room treating injuries, or in a laboratory doing research to improve the level of athletic performance. Presently, there are career opportunities for women as any members of the sports medicine team.

Even as late as the 1970s, very few women were responsible for the health care of athletes. Men dominated the medical and athletic training fields. Until the early 1970s, women interested in sports medicine could work as physical therapists or volunteer their time to work with female athletes. At that time, budgets for women's athletic programs were low or did not exist, and only a few women were allowed to work with male athletes.

A turning point in women's athletics

In 1972, the federal government passed Title IX. This federal document stated that athletic programs for women or girls must have the same funding as those for men and boys. This document changed the role of women in athletics. People began to take sports for girls and women more seriously, and a sense of equality

Photo by: Y.C. Ehrhart

between male and female athletes was established. The few women who were involved in sports medicine broke the barriers and demonstrated the skills that women could offer the sports medicine field. The work and perseverance of these pioneers in athletic training helped the role of women in sports medicine evolve.

Careers for women in sports medicine

Today, many women have careers in sports medicine. Women in athletic training are well respected and are able to work with either men's or women's teams. Most colleges employ male and female athletic trainers to manage the health care of athletes of both sexes. However, in professional sports, such as football, most of the athletic trainers are men. In these cases male trainers may be hired over female trainers because most practice and game preparation is done in the locker rooms.

Many women have earned graduate degrees or have become licensed in physical therapy to complement their education and training. Because of their efforts and the impact of Title IX, women compete well with men for positions as athletic trainers. Schools are pressured to provide sexual equality in funding for their athletes and for the employees of their athletic departments. Because of the strong lobbying for sexual equality, women have more opportunities for employment in sports medicine at colleges than ever before.

Although some coaches have not changed their attitudes toward female athletic trainers, women currently have access to training in all aspects of the sports medicine field. The National Athletic Trainers' Association reports that 43% of certified trainers are women. Most female athletic trainers are young. As they become more experienced, they will be able to take leadership positions and open the field of athletic training even more for women.

Susan Foreman, M.Ed., A.T.,C., M.P.T.
Charlottesville, Virginia

Women's Health Trial

Teaching women to eat healthy and stay healthy

Southern cooking has traditionally included many fried, high-fat foods. We have heard more and more in recent years about the dangers of high-fat diets and their connection with heart disease. But other diseases have also been linked to diet. One association that is important to women is that between a high-fat diet and breast cancer.

In the 1970s, researchers at the National Cancer Institute began studying nutrition and its association with different forms of cancer. By 1983, they had enough data from their research to suggest there is a link between a high-fat diet and breast cancer. In the mid 1980s the National Cancer Institute sponsored a program to see if they could change the eating and cooking habits of women at risk for breast cancer by teaching them how to shop for and cook more low-fat foods. This study proved successful and the women involved made positive changes in their diets. Researchers will see if this change reduces the incidence of breast cancer in the women studied.

A recent concern is that these techniques to change women's attitudes about cooking low-fat foods may not be as successful among women in minority communities. A large, 12-year program was designed to study the effects of hormone replacement therapy, calcium supplements, and low-fat diet in postmenopausal women. Sixteen research centers across the country will take part in this national study. An additional twenty-nine centers will be added in 1994. Some centers will be assigned to focus on minority women to ensure a representative sample of women will participate. The researchers will observe the nutritional habits of these women and will teach some of the women about low-fat diets to see if they can change their attitudes toward food. This study will provide researchers valuable information on what types of food these women eat and if they can make permanent changes in their eating habits.

Once all of the information has been gathered, the National Cancer Institute will be able to give tested guidelines to women about how to improve their diets and stay healthier.

Jessie Wright, M.S., R.D., L.D.
Columbus, Georgia

A JOINT PARADE ™

Walking for orthopaedic research

Have you, a family member, or a friend achieved a higher quality of life through excellent orthopaedic care? If so, you have a special understanding of orthopaedics and what current practice techniques are able to do in terms of restoring a person's mobility and agility. Research makes it possible for orthopaedic surgeons to learn new and better ways to care for their patients.

On June 12, 1994, we invite you (and your family) to join us for the first annual A JOINT PARADE ™ walk-a-thon for orthopaedic research. We will be walking one mile (or less if you don't feel up to it). As you walk and talk with your doctor, nurse, physical therapist, or fellow patients, you will be helping to ensure that people in the Southeast receive the best orthopaedic care possible.

Sponsored by the Orthopaedic Research and Education Foundation, our Columbus walk will be one of over 50 held across the United States on that Sunday to raise money for research projects and patient education programs and services. Even if you have not been treated for an orthopaedic problem, come walk with us. Your participation will help others who have difficulty with the everyday tasks we take for granted.

For more information, contact Cindi Tebben at (706) 576-3380.

The Hughston Health Alert is a quarterly publication of the Hughston Sports Medicine Foundation, Inc. The Foundation's mission is to help people of all ages attain the highest possible standards of musculoskeletal health, fitness, and athletic prowess. Information in the Hughston Health Alert reflects the experience and training of physicians at the Hughston Orthopaedic Clinic, P.C., of physical therapists and trainers at Rehabilitation Services of Columbus, Inc. and Committed Fitness Systems, of physicians who trained as residents and fellows under the auspices of the Hughston Sports Medicine Foundation, Inc., and of research scientists and other professional staff at the foundation. The information in the Hughston Health Alert is intended to supplement the advice of your personal physician, and should not be relied on for the treatment of an individual's specific medical problems.

Send Inquiries to Medical Writing, Hughston Sports Medicine Foundation, Inc., P.O. Box 9517, 6262 Hamilton Road, Columbus GA 31908-9517 USA. Telephone (706) 576-3322.

Copyright 1994, Hughston Sports Medicine Foundation, Inc. *ISSN# 1070-7778*

Editor
Fred Flandry, M.D., F.A.C.S.

Managing Editor
Donna Tilton
Editorial Associates
Carol M. Binns, M.A.
Elizabeth Tindal
Art Director
Carolyn M. Capers, M.S.M.I., C.M.I.

Editorial Board
David T. Curd, M.S.
Todd Dombroski, D.O.
William C. Etchison, M.S.
Angelo Galante, M.D.
Fran W. Hempstead
John M. Henderson, D.O.
Joseph Martino, M.D.
Leland C. McCluskey, M.D.
Keith Webster, M.A., A.T.,C.
Jessie G. Wright, M.S., R.D., L.D.

President & CEO Hughston Sports Med. Fdn.
William C. Behrens

H Health Hints

- Stopping for a meal during a hike allows you to rest your muscles, build up calories, and enjoy the surroundings.
- Good treats for hikes include breads, fruits, canned meats, granola snacks, crackers, nuts, and water.
- While in-line skating, swing your arms in rhythm with your skating to strengthen your arms and improve overall fitness.

Hughston Health Alert

P.O. Box 9517
Columbus GA 31908-9517
Address Correction Requested

U.S. POSTAGE PAID
BIRMINGHAM, AL
PERMIT NO 1412
NONPROFIT ORG.