



The Female Athlete Triad

The female athlete triad is a syndrome of three medical conditions: disordered eating, amenorrhea (lack of menstrual periods) and low bone density. In 1992, the American College of Sports Medicine coined the term for the complex disorder after a pattern was noticed in female athlete patients. Each of these conditions on its own can impair the performance and health of female athletes. Combined, however, the conditions can be detrimental. Prevention is the best approach for addressing the female athlete triad, and this includes educating athletes about the syndrome and creating a caring environment for the athletes. For those diagnosed with the female athlete triad, treatment needs to include a comprehensive sports medicine team.

Eating disorders

There are two primary eating disorders: anorexia nervosa and bulimia nervosa. A refusal to maintain a minimally normal body weight is known as anorexia nervosa. Bulimia nervosa is characterized as recurring incidents of binge eating, followed by inappropriate compensatory behaviors such as excessive exercise, self-induced vomiting and misuse of medications. Disordered eating in athletes has serious consequences. It can contribute to nutritional deficits and directly affect the body's ability to build bone, maintain muscle mass and recover from injury. When the body is low on fuel, it can lead to an inability to concentrate and a loss of overall strength.

Amenorrhea

Amenorrhea can be caused by a variety of things. Most often, female athletes develop functional hypothalamic amenorrhea due to a combination of exercise and stress. Amenorrhea leads to an estrogen deficiency, which increases the risk of stress fractures, especially in active females.

Bone health

Bone health is affected by calcium and vitamin D intake, nutritional balance and estrogen. Compromised bone health in young female athletes may lead to stress fractures, which most often occur in the tibia. Along with a risk of stress fractures and bone loss, athletes with amenorrhea and disordered eating patterns are at risk of osteoporosis.

Locations

Emeryville

Stanford Children's Health
Specialty Services
6121 Hollis St, Suite 2
Emeryville, CA 94608
(510) 587-9600

Palo Alto

Mary L. Johnson
Specialty Services
730 Welch Rd
Palo Alto, CA 94304
(650) 497-8263

San Francisco

California Pacific
Medical Center
3801 Sacramento St
2nd Floor, Suite 216
San Francisco, CA 94118
(650) 497-8263

Walnut Creek

John Muir Medical Center
106 La Casa Via, Suite 240
Walnut Creek, CA 94598
(925) 322-8494

Los Gatos

Stanford Children's Health
555 Knowles Dr
Los Gatos, CA 95032
(650) 497-8263

Pleasanton

5000 Pleasanton Ave
Suite 200
Pleasanton, CA 94566
(925) 263-0262

Sunnyvale

Motion & Sports
Performance Lab
1195 West Fremont Ave
2nd Floor
Sunnyvale, CA 94087
(408) 688-9948

Lucile Packard Children's Hospital Stanford

725 Welch Road
Palo Alto, CA 94304

Contact Us

Call (844) 41-ORTHO (67846) for appointments and more information, or visit us online at femaleathlete.stanfordchildrens.org.