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Disordered Eating in Athletes

Eating Disorder vs. Disordered Eating

- Eating Disorder: one of the three clinically diagnosable conditions – anorexia nervosa, bulimia nervosa, or eating disorder not otherwise specified (EDNOS)
- Disordered Eating: abnormal and harmful eating behaviors that are used in a misguided attempt to lose weight or maintain a lower than normal body weight

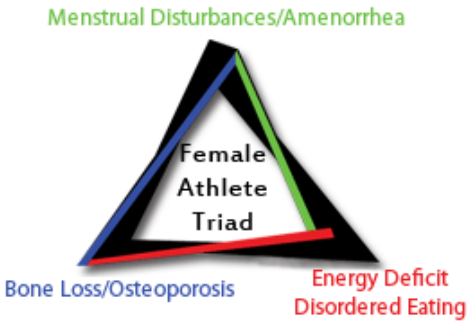
Signs & Symptoms of Disordered Eating

Behavioral	Physical
• Excessive criticism of one's body weight or shape • Preoccupation with food, calories, or weight • Compulsive, excessive exercise • Mood swings, irritability • Depression • Social withdrawal • Secretly eating or stealing food • Bathroom visits after eating • Avoiding food-related social activities • Excessive use of laxatives, diuretics, or diet pills • Consumption of large amounts of food inconsistent with the athlete's weight • Excessive fear of being overweight or becoming fat that does not diminish as weight loss continues • Preoccupation with the dietary patterns and eating behaviors of other people • Lack of concern for excessive weight loss or extremely low body weight	• Chronic fatigue • Noticeable weight loss or gain • Anemia • Frequent gastrointestinal problems or complaints (e.g. excessive gas, abdominal bloating, constipation, ulcers) • Cold intolerance • Lanugo (fine hair on the face and body) • Tooth erosion • Calloused fingers • Frequent musculoskeletal injuries (particularly stress fractures) • Delayed or prolonged healing of wounds or injuries • Prolonged healing of wounds or injuries • Frequent or prolonged illnesses • Dry skin and hair • Brittle nails • Alopecia (hair loss) • In women, irregular or absent menstrual cycles

What is The Female Athlete Triad?

The Female Athlete Triad is a syndrome of three interrelated conditions that exist on a continuum of severity, including:

- Energy Deficit/Disordered Eating
- Menstrual Disturbances/Amenorrhea
- Bone Loss/Osteoporosis



What causes The Triad?

Energy Deficit/Disordered Eating

The primary cause of the Female Athlete Triad is energy deficiency, an imbalance between the amount of energy consumed and the amount of energy expended during exercise. Usually this involves a conscious restriction of food intake, problems with body image and a high drive for thinness.

Menstrual Disturbances/Amenorrhea

The most serious menstrual problem associated with the Triad is amenorrhea, defined as no menstrual period for 3 months or more. However, athletes who have irregular menstrual cycles are also susceptible to the effects of the Triad.

Bone Loss/Osteoporosis

Women with the triad are at higher risk for low bone mass which can lead to weakened bones, a condition called osteoporosis in its severe form. This type of bone loss can cause an increased risk of fractures, including stress fractures.

What should I do if I have disordered eating or know a teammate with disordered eating?

As an athlete:

- If female, monitor your menstrual cycle by using a diary or calendar.
- Consult your physician if you have menstrual irregularities or have recurrent injuries or stress fractures.
- Seek counseling if you suspect you are overly concerned about your body image.
- Consult a sport nutritionist to help you design an appropriate diet.
- Seek emotional support from parents, coaches and teammates.

As a teammate:

- If unsure how to approach the situation, talk to a coach you trust.
- Remain calm and talk honestly with your friend about her/his behavior and its consequences.
- Don't argue or try to control your friend's behavior regarding food.
- Try to maintain a healthy atmosphere in the dorm, at practice and to include your friend in group activities.
- Encourage new interests and leisure activities that your friend enjoys.

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Ergogentic Aids

Supplement	NCAA Guidelines	Recommended Dosage	Safety (at recommended doses)	Theorized Effects	Effectiveness
Androstenedione	Banned; anabolic steroid.	Supplementation not recommended.	Safety concerns about chronic use. Banned by the FDA and most sports governing bodies.	Potentially converts oral androstenedione into testosterone with the possible anabolic benefits of enhanced lean body mass, increased strength and decreased body fat.	Not effective.
Branch Chain Amino Acid (BCAA)	Impermissible for the institution to provide.	5 – 20 grams/day in divided doses.	Seems to be safe; 5-20 g/ day in divided doses.	Greater availability of BCAA late in prolonged exercise could provide a much needed fuel source.	Not effective to delay fatigue; some promising studies related to immune system support.
Caffeine (guarnana)	Banned; stimulant; concentration must not exceeds 15 micrograms/mL in urine (approx. 17 caffeine containing soft drinks).	Effective dose for athletes: 5-6 grams/kg body weight.	Seems to be safe, although known adverse effects may affect performance.	Ergogenic aid to improve endurance performance as well as to delay fatigue and enhance fat loss.	Effective as a central nervous system stimulant.
Carnitine	Impermissible for the institution to provide.	Study protocols suggest an oral dose of 2- 4 grams/ day.	Seems to be safe.	Used in fat oxidation, carnitine is believed to decrease muscle pain and increase weight loss, endurance, cardiovascular function, and strength.	Effectiveness is unknown because study results are mixed.
Chromium (chromium picolinate)	Permissible for the institution to provide.	50 – 200 micrograms/day; higher intakes may decrease iron absorption.	Safety concerns about chronic use.	Enhances insulin sensitivity by increasing the number of insulin receptors, thus improving glucose utilization. Enhanced insulin sensitivity could also promote the uptake of amino acids into muscle cells and stimulate protein synthesis.	Not effective for increasing muscle mass or decreasing body fat.
Conjugated Linoleic Acid (CLA)	Impermissible for the institution to provide.	Study protocols used 3 – 4 grams/day, usually taken in 3 divided doses with meals.	Seems to be safe.	Supplemental CLA aids in weight loss, fat loss, gains in muscle mass and strength, and improved health related to heart disease and other chronic diseases.	Effectiveness is unknown because study results are mixed.

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Supplement	NCAA Guidelines	Recommended Dosage	Safety (at recommended doses)	Theorized Effects	Effectiveness
Creatine	Impermissible for the institution to provide.	3 – 5 grams/day; short-term loading of 20 – 25 grams/day for 5 – 7 days has not been shown more beneficial.	Seems to be safe.	Supplemental creatine may increase storage of phosphocreatine, regulate phosphocreatine increases during exercise, and increase ATP production secondary to increased hydrogen ion buffering. Ergogenic effects include increased strength, endurance, and muscle gains.	Effective for increasing lean body mass in athletes performing repeated high intensity, short duration (<30 seconds) exercise bouts. Performance benefit in weight lifters.
Dehydroepiandrosterone (DHEA)	Banned; anabolic steroid.	Supplementation is not recommended.	Safety concerns about acute high doses and chronic use.	As a prohormone, DHEA will elevate blood testosterone levels, which in turn will increase muscle mass.	Not effective.
Ephedrine (ephedra, ma huang)	Banned; stimulant.	Supplementation is not recommended; ban on low-dose (≤10 milli-grams) supplementation overturned by federal court.	Safety concerns hotly debated. Banned by the FDA due to significant safety risks. Ban on low-dose (≤10 mg) supplements overturned by federal court. Do not mix with caffeine.	Ephedrine use in athletes is used to promote weight loss, increase energy, and enhance performance.	Effective as a central nervous system stimulant. With caffeine, effective for short-term, 8-to9-lb weight loss in obese people. Effectiveness as a performance enhancer is unknown because study results are mixed.
Glucosamine/ Chondroitin Sulfate	Permissible for the institution to provide for medical purposes, if substance is provided by a licensed medical doctor to treat a specific, diagnosed medical condition.	Glucosamine: 1500 – 2000 milligrams/day Chrondroitin: 1200 milligrams/day	Seems to be safe.	May stimulate cartilage protein synthesis or inhibit breakdown; used to reduce joint pain and improve function.	Effective in some individuals.
Glutamine	Impermissible for the institution to provide.	Manufacturers recommendations range from 5 – 10 grams/day to more than 20 grams/day.	Seems to be safe.	Used as a fuel source for immune system cells when the body is under physiological stress, supplemental glutamine is theorized to be beneficial for decreasing exercise-induced stress.	Effectiveness is unknown because study results are mixed.

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Supplement	NCAA Guidelines	Recommended Dosage	Safety (at recommended doses)	Theorized Effects	Effectiveness
Beta-hydroxy-beta-methylbutyrate (HMB)	Impermissible for the institution to provide.	3 grams/day in three 1 gram doses.	Seems to be safe.	Promoted to enhance lean body mass and to increase strength gains by minimizing the protein break-down that follows intense exercise.	Effectiveness is unknown because study results are mixed.
Ribose	Impermissible for the institution to provide.	Supplementation not recommended Most studies used a dosage of 5 grams/ day.	Seems to be safe.	Used in ATP synthesis- ribose sup-plementation is posed to increase ATP production and improve high-intensity exercise performance.	Not effective.
Vanadium (vanadyl sulfate)	Permissible for the institution to provide.	Upper limit (UL) equals 1.8 milligrams/day.	Seems to be safe.	Supplemental vanadyl sulfate have insulin-mimetic properties which increase hepatic and muscle insulin sensitivity, augmented glucose up-take, and a stimulation of glycogen synthesis.	Not effective as a performance enhancer; may be effective in type 2 diabetes as a pharmacological agent.
Medium-Chain Triglycerides	Impermissible for the institution to provide.	Supplementation not recommended.	Safety concerns about acute and chronic use.	Increases fat availability and oxidation in an effort to spare glycogen and prolong performance.	Not effective.
Multivitamin and min-eral supplements	Permissible for the institution to provide.	Follow the Dietary Reference Intakes (DRI) for each vitamin and mineral.	Safety concerns about does that, in conjunction with diet, would exceed the Tolerable Upper Intake Level (UL).	Supplementation prevents vitamin and mineral deficiencies; many athletes view a one-a-day multivitamin as an “insurance policy” to a poor diet. Vitamins C and E are powerful antioxidants which may protect against oxidative stress in endurance athletes.	Effective to reverse nutrient deficiencies. Daily multivitamin supplements are recommended by some as effective to prevent chronic disease in adults.
Protein	Impermissible for the institution to provide.	1.2 – 1.8 grams of protein per kilogram of body weight per day.	Seems safe for those without latent or known kidney or liver disease.	Protein supplementation in combination with resistance training significantly increase lean tissue mass.	No more or less effective than food proteins.
Pyruvate and Dihydroxyactone (DHA)	Impermissible for the institution to provide.	Supplementation not recommended Most studies used a dosage greater than 20 milligrams/day.	Seems to be safe.	Increase aerobic endurance and decrease body fat as a weight loss aid.	Not effective.

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Performance Hydration

Did you know that hydration status can be one of the primary factors preventing you from achieving your fitness goals? Your body needs sufficient amounts of water to metabolize fat and synthesize muscle.

It is extremely important for athletes and exercisers to maintain adequate hydration levels consistently. This ensures that you are providing the body with what it needs to properly respond to the stress of exercise.

Hydration during Exercise

Drink fluids early and often to replace water lost through sweating. Drink fluids even if you train in a cold environment. Dehydration and decreased performance can still occur. Your needs may increase on hot and humid days. If you are participating in vigorous activity for more than an hour, consider replacing energy and electrolytes with a sports drink or fruit.

Timing	Recommendations
Daily	Drink fluids throughout the day. You need ~ 1ml for every calorie consumed. For example, if you eat 3,000 calories, drink 3,000 ml of fluids (3 L).
2-3 hours before training and competition	16 oz of fluid
Every 15-20 minutes during training and competition	5-10 oz of fluid
After exercise	16-24 oz for every pound lost from sweat

Quick Conversion	1000 ml = 1 liter liter ~ 32 oz	240 ml = 8 oz 8 oz ~ 1 cup

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Sports Snacks

In order to maintain or gain weight as an athlete, it is important to consume at least 5 to 6 meals throughout the day. It is often difficult to consume all meals in the dining hall; therefore a large snack may take the place of a meal. The snacks listed below are easy to transport and can be eaten on-the-go. Discuss individualized needs with a coach or registered dietitian.

Fruits

Food Item	Serving Size	Calories
Banana	1 medium	**110**
Apple	1 medium	**80**
Pear	1 medium	**100**
Dried Fruit	Handful	**100**

Drinks

Food Item	Serving Size	Calories
Powerade	8 ounces	**80**
Juice	8 ounces	**120**
Juice Box	1 box	**100**
Sweetened Ice Tea	8 ounces	**85**
Skim Milk	8 ounces	**80**
Chocolate Milk	8 ounces	**220**

Snack Foods

Food Item	Serving Size	Calories
Peanut Butter Crackers	6 crackers	**210**
Chewy Granola Bar	1 bar	**120**
Trail Mix	Handful	**200**
Peanut Butter	1 Tbsp.	**95**
Nature Valley Granola Bar	2 bars	**180**
Clif Bar	1 bar	**250**
Mixed Nuts	Handful	**170**
Pretzels	7 small pretzels	**110**
Fig Newtons	4 cookies	**200**
Flavored Yogurt	1 cup	**150**
½ Bagel	½ bagel	**175**
String Cheese	1 each	**75**
Granola	½ cup	**160**

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