

AED REPORT 2011

2<sup>nd</sup> EDITION

# EATING DISORDERS

Critical Points for Early  
Recognition and Medical  
Risk Management in the  
Care of Individuals with  
Eating Disorders

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**Disclaimer:** This document, created by the Academy for Eating Disorders' Medical Care Standards Task Force, is intended as a resource to promote recognition and prevention of medical morbidity and mortality associated with eating disorders. It is not a comprehensive clinical guide. Every attempt was made to provide information based on the best available research and current best practices.

For further resources, practice guidelines and bibliography visit: [www.aedweb.org](http://www.aedweb.org) and [www.aedweb.org/Medical\\_Care\\_Standards](http://www.aedweb.org/Medical_Care_Standards)

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## Key Guidelines

**Eating disorders (EDs)** are serious mental illnesses with significant, life-threatening medical and psychiatric morbidity and mortality, regardless of an individual's weight. Anorexia Nervosa (AN), in particular, has the highest mortality rate of any psychiatric disorder. Risk of premature death is 6-12 times higher in women with AN as compared to the general population, adjusting for age.

Early recognition and timely intervention, based on a developmentally appropriate, evidence-based, multidisciplinary team approach (medical, psychological & nutritional), is the ideal standard of care, wherever possible. Members of the multidisciplinary team may vary and will depend upon the needs of the patient and the availability of these team members in the patient's community. In communities where resources are lacking, clinicians, therapists, and dietitians, are encouraged to consult with the Academy for Eating Disorders (AED) and/or ED experts in their respective fields of practice.

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## Eating Disorders

For the purpose of this document, eating disorders (EDs) include:

1. Anorexia nervosa (AN), restrictive and binge/purge subtypes
2. Bulimia Nervosa (BN), purging and non-purging types
3. Eating Disorders Not Otherwise Specified (EDNOS), including Binge Eating Disorder (BED)

Consult [www.aedweb.org](http://www.aedweb.org) or the current DSM or ICD-10 for full description.

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## Important Facts about Eating Disorders

- Eating disorders are serious disorders with life-threatening physical and psychological complications.
- In addition to girls and women, EDs can affect boys and men; children, adolescents and adults; people from all ethnicities and socioeconomic backgrounds; and people with a variety of body shapes, weights and sizes.
- Weight is not the only clinical marker of an ED. People who are at normal weight can have EDs.
- It is important to remember that EDs do not only affect females at low weight. All instances of precipitous weight loss in otherwise healthy individuals should be investigated for the possibility of an ED, including post-bariatric surgery patients. In addition, rapid weight gain or weight fluctuations can be a potential marker of an ED.
- Individuals at weights above their natural weight range may not be getting proper nutrition and patients within their natural weight range may be engaging in unhealthy weight control practices.
- In children and adolescents, failure to gain expected weight or height, and/or delayed/interrupted pubertal development, should be investigated for the possibility of an ED.
- The medical consequences of EDs can go unrecognized, even by experienced clinicians.
- Eating disorders (including BED) can be associated with serious medical complications. Eating disorders can be associated with significant compromise in every organ system of the body, including the cardiovascular, gastrointestinal, endocrine, dermatological, hematological, skeletal, and central nervous system.

## Presenting Signs and Symptoms

Individuals with EDs may present in a variety of ways. In addition to the cognitive and behavioral signs that characterize EDs, the following are possible physical signs and symptoms that can occur in patients with an ED as a consequence of nutritional deficiencies, binge-eating, and inappropriate compensatory behaviors, such as purging. **However, an ED may occur without obvious physical signs or symptoms.**

### GENERAL

- Marked weight loss, gain or fluctuations
- Weight loss, weight maintenance or failure to gain expected weight in a child and adolescent who is still growing and developing
- Cold intolerance
- Weakness
- Fatigue or lethargy
- Dizziness
- Syncope
- Hot flashes, sweating episodes

### ORAL AND DENTAL

- Oral trauma/lacerations
- Dental erosion and dental caries
- Perimolysis
- Parotid enlargement

### CARDIORESPIRATORY

- Chest pain
- Heart palpitations
- Arrhythmias
- Shortness of breath
- Edema

### GASTROINTESTINAL

- Epigastric discomfort
- Early satiety, delayed gastric emptying
- Gastroesophageal reflux
- Hematemesis
- Hemorrhoids and rectal prolapse
- Constipation

### ENDOCRINE

- Amenorrhea or irregular menses
- Loss of libido
- Low bone mineral density and increased risk for bone fractures and osteoporosis
- Infertility

### NEUROPSYCHIATRIC

- Seizures
- Memory loss/Poor concentration
- Insomnia
- Depression/Anxiety/Obsessive behavior
- Self-harm
- Suicidal ideation/suicide attempt

### DERMATOLOGIC

- Lanugo hair
- Hair loss
- Yellowish discoloration of skin
- Callus or scars on the dorsum of the hand (Russell's sign)
- Poor healing

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## Early Recognition

Consider evaluating an individual for an ED who presents with any of the following:

- Precipitous weight loss/gain
- Weight loss or failure to gain expected weight/height in a child and adolescent who is still growing and developing
- Substantial weight fluctuations
- Electrolyte abnormalities (with or without ECG changes), especially hypokalemia, hypochloremia, or elevated  $\text{CO}_2$ . High normal  $\text{CO}_2$  in the presence of low normal chloride and/or urine pH of 8.0 – 8.5 can indicate recurrent vomiting. Hypoglycemia may accompany such electrolyte changes.
- Bradycardia
- Amenorrhea or menstrual irregularities
- Unexplained infertility
- Excessive exercise or involvement in extreme physical training
- Constipation in the setting of other inappropriate dieting and/or weight loss promoting behaviors
- Type 1 diabetes mellitus and unexplained weight loss and/or poor metabolic control or diabetic ketoacidosis (DKA). These patients are at increased risk of developing sub-threshold and full syndrome EDs. Intentionally changing insulin doses (under-dosing or omission) will lead to weight loss, poor glycemic control (higher hemoglobin A1c), hypoglycemia/hyperglycemia, DKA, and acceleration of diabetic complications.
- A history of using one or more compensatory behaviors to influence weight after eating or perceived overeating or binge eating, such as self-induced vomiting, dieting, fasting or excessive exercise

- A history of using/abusing appetite suppressants, excessive caffeine, diuretics, laxatives, enemas, ipecac, excessive hot or cold fluids, artificial sweeteners, sugar-free gum, prescription medications (i.e., insulin, thyroid medications), psychostimulants, street drugs, or a variety of complementary and alternative supplements.

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## Acute malnutrition is a medical emergency

Individuals with continued restrictive eating behaviors, binge eating or purging despite efforts to redirect their behavior require immediate intervention. Acute malnutrition is a medical emergency. Malnutrition can occur at any body weight, not just at a low weight.

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## A Comprehensive Assessment

### Complete History to Include...

#### Assess:

- Rate and amount of weight loss/change
- Nutritional status
- Methods of weight control

#### Review:

- Compensatory behaviors (vomiting, dieting, exercise, insulin misuse, and/or use of diet pills, over-the-counter supplements, laxatives, ipecac, diuretics etc.)
- Dietary intake and exercise
- Menstrual history in females (hormone replacement therapy including oral contraceptive pills)
- Comprehensive growth and development history, temperament, & personality traits



- Family history including symptoms or diagnosis of EDs, obesity, mood & anxiety disorders, alcohol and substance use disorders
  - Psychiatric history including symptoms of mood disorders and anxiety disorders
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### Physical examination to include...

- Supine and standing heart rate and blood pressure
  - Respiratory rate
  - Oral temperature (looking for hypothermia: body temperature < 96° F/35.6 °C).
  - Measurement of height, weight, and determination of body mass index (BMI); record weight, height and BMI on growth charts for children and adolescents, noting changes from previous height(s) and weight(s) measurements.
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### Initial laboratory Evaluation

The laboratory and imaging studies recommended for consideration in an initial evaluation of a patient with an ED, along with the corresponding abnormalities that can be seen in patients with EDs, are outlined in the following chart.

Laboratory Studies	Potential abnormal findings in a patient with an eating disorder
Complete blood count	Leukopenia, anemia, or thrombocytopenia
Comprehensive serum metabolic profile, other electrolytes and enzymes	<p>Glucose: ↓(poor nutrition), ↑(insulin omission)</p> <p>Sodium: ↓(water loading or laxatives)</p> <p>Potassium: ↓(vomiting, laxatives, diuretics, refeeding)</p> <p>Chloride: ↓(vomiting), ↑(laxatives)</p> <p>Blood bicarbonate: ↑(vomiting), ↓(laxatives)</p> <p>Blood urea nitrogen: ↑(dehydration)</p> <p>Creatinine: ↑(dehydration, renal dysfunction), (poor muscle mass). Normal may be “relatively elevated” given low muscle mass.</p> <p>Calcium: slightly ↓(poor nutrition at the expense of bone)</p> <p>Phosphate: ↓(poor nutrition or refeeding)</p> <p>Magnesium: ↓(poor nutrition, laxatives, refeeding)</p> <p>Total protein/albumin: ↑(in early malnutrition at the expense of muscle mass), ↓(in later malnutrition)</p> <p>Total bilirubin: ↑(liver dysfunction), ↓(poor RBC mass)</p> <p>Aspartate aminotransaminase (AST), alanine aminotransaminase (AST): ↑(liver dysfunction)</p> <p>Amylase: ↑(vomiting, pancreatitis)</p> <p>Lipase: ↑(pancreatitis)</p>
Thyroid function tests	Low to normal thyrotropin (TSH), normal or slightly low thyroxine (T4) (sick euthyroid syndrome).

Laboratory Studies	Potential abnormal findings in a patient with an eating disorder
Gonadotropins and sex steroids	Low luteinizing hormone (LH) and follicle-stimulating hormone (FSH). Low estradiol in females, low testosterone in males.
Pregnancy test of women in childbearing years	Low weight females can ovulate and are therefore at risk for becoming pregnant if sexually active.
Lipid panel	This is not recommended as an initial laboratory test since cholesterol may be elevated in early malnutrition or low in advanced malnutrition.
Imaging Studies	Potential abnormal findings in a patient with an eating disorder
Bone mineral density study	Patients with EDs are at risk of low bone mineral density (BMD). There is no evidence that hormone replacement therapy (estrogen/progesterone in females or testosterone in males) improves BMD. Nutritional rehabilitation, weight recovery, and normalization of endogenous sex steroid production are the treatments of choice. A common technique for measuring BMD is dual energy x-ray absorptiometry (DXA), recommended in patients with amenorrhea for 6 months or longer.
Other Tests	Potential abnormal findings in a patient with an eating disorder
Electrocardiogram (ECG)	Bradycardia or other arrhythmias, low-voltage changes, prolonged QTc interval, T-wave inversions, and occasional ST-segment depression.

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## Refeeding Syndrome

**Refeeding syndrome** describes a potentially fatal shift of fluid and electrolytes that can occur when refeeding (orally, enterally, or parenterally) a malnourished patient. Patients with refeeding syndrome may have a non-specific clinical presentation and therefore diagnosing this syndrome can be challenging. The serious consequences of refeeding syndrome include cardiac and/or respiratory failure, gastrointestinal problems, delirium and, in some cases, death. Refeeding syndrome is a potentially fatal condition requiring specialized care on an inpatient unit.

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### Risk factors for refeeding syndrome include:

- Patients who are chronically undernourished and those who have had little or no energy intake for more than 10 days.
- Patients with rapid or profound weight loss, including those patients who present at a normal weight after weight loss.
- Patients with anorexia nervosa.
- Patients with EDs who are malnourished, especially if there is significant alcohol intake.
- Patients with obesity and significant weight loss, including after bariatric surgery.
- Patients with prolonged fasting or low energy diet.
- Patients with a history of diuretic, laxative or insulin misuse.
- Patients with abnormal electrolytes, particularly hypophosphatemia, prior to refeeding.

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## Ways to Prevent Refeeding Syndrome in patients with an eating disorder

- Be informed about refeeding syndrome and aware of those patients who are potentially at risk.
- Be aware that refeeding syndrome can occur in patients of any age.
- Understand that those patients at risk for refeeding syndrome should be treated by physicians with expertise or special training in the area of EDs.
- Use an inpatient medical unit to treat and monitor patients who may have, or are at risk for, refeeding syndrome. Refeeding syndrome is an important cause of morbidity and mortality in malnourished patients with EDs.
- Refeed slowly, adjusting to the age, developmental stage, and degree of malnourishment.
- While treating a patient on an inpatient unit, monitor fluid replacement to avoid overload and check serum electrolytes, glucose, magnesium, and phosphorus prior to and closely during refeeding. Serum phosphorus levels are at their lowest point during the first week of refeeding in patients who are hospitalized.
- For those patients with electrolyte deficits, correct electrolyte and fluid imbalance alongside feeding. It is not necessary to correct fluid and electrolyte imbalance before feeding. With careful monitoring, this can be safely achieved simultaneously. For those patients who do not present with electrolyte deficits, carefully monitor on an inpatient unit as electrolyte abnormalities may occur with refeeding.
- Monitor vital signs and cardiac and mental status of all patients during refeeding.

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## Underfeeding

Underfeeding can lead to further weight loss and has been reported to be fatal in seriously malnourished patients.

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### Ways to prevent Underfeeding

- Avoid underfeeding caused by implementing overly cautious rates of refeeding.
  - Frequently (12-24 hourly) reassess and increase calories as soon as it is deemed safe in patients who are hospitalized.
  - Review electrolytes daily in the initial stages of refeeding.
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## Goals of treatment

- Nutritional rehabilitation
- Weight restoration
- Medical stabilization and prevention of serious medical complications and death
- Resumption of menses (where appropriate)
- Cessation of binge eating and/or purging behaviors
- Cessation of eating disordered ideation including body image disturbance and dissatisfaction
- Restore meal patterns that promote health and social connections
- Re-establish social engagement

Full resolution of symptoms may take an extended period of time. Eating Disorders are not merely fads, phases, or lifestyle choices. People do not choose to have EDs, even though they may voluntarily engage in risk-associated behaviors such as dieting and/or exercise that may precipitate an ED.

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## Timely Interventions

**1. Patients with EDs may not recognize that they are ill and/or they may be ambivalent about accepting treatment.**

**This is a symptom of their illness.** In addition, patients may minimize, rationalize, or hide ED symptoms and/or behaviors. Their persuasive rationality and competence in other areas of life can disguise the severity of their illness. Outside support and assistance with decision-making will likely be necessary regardless of age.

**2. Parents/guardians are the frontline help-seekers for children and adolescents with EDs.**

**Trust their concerns.** Even a single consultation about a child's eating behavior or weight/shape concerns is a strong predictor of the presence or potential development of an ED.

**3. Help families understand that they did not cause the illness; neither did their child/family member choose to have it.**

This recognition facilitates acceptance of the diagnosis, treatment, referral, interventions, and minimizes undue stigma associated with having the illness.

**4. Monitor physical health including vital signs and laboratory tests.**

The overall observation of physical health in a patient with an ED should include regular monitoring of the orthostatic heart rate and blood pressure (lying pulse and blood pressure followed by standing pulse and BP). Results should be interpreted in the context of physiological adaptation to malnutrition and purging behavior. Laboratory test results can be normal even in the presence of a life-threatening ED. Minor abnormalities may indicate that compensatory mechanisms have reached critical limits.

Low weight patients or those patients who have significant weight loss may present with bradycardia (heart rate < 50 beats per minute). This should not be automatically attributed to an athlete's heart, even if the patient is an athlete.

**5. Always assess for psychiatric risk, including suicidal and self-harm thoughts, plans and/or intent.**

**Up to 1/3 of deaths related to EDs are due to suicide.**

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## Ongoing Management

Evidence-based treatment delivered by health professionals with expertise in the care of patients with ED is mandatory. Optimal care includes a multidisciplinary team approach by ED specialists including medical, psychological, nutritional, and psychopharmacologic services. Families & spouses should be included whenever possible.

Referral by primary providers is the most likely reason families/patients seek expert care. A detailed assessment and referral to an expert can, therefore, ensure the best treatment outcome for the patient.

Nutritional rehabilitation, weight restoration & stabilization, complete physiologic restoration, management of refeeding complications, and interruption of purging/compensatory behaviors should be the immediate goals of treatment for all patients with EDs. Additional psychological and other therapeutic goals can be addressed in parallel when possible.

Achievement of an individual's appropriate healthy weight will improve the physical, psychological, social, and emotional functioning of that patient.

Failure to fully restore weight correlates with worse outcomes, and maintenance of the weight restored strongly correlates with a good outcome. However, there is danger in thinking that a person with an ED is recovered once physical health and weight are restored. Distorted body image and/or ED thoughts may persist despite weight restoration and will likely require longer-term therapy.

For references and further information about the diagnosis and treatment of EDs visit: [www.aedweb.org](http://www.aedweb.org) and [www.aedweb.org/Medical\\_Care\\_Standards](http://www.aedweb.org/Medical_Care_Standards).



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## About the Academy for Eating Disorders (AED)

The AED is a global multidisciplinary professional association committed to leadership in promoting EDs research, education, treatment, and prevention.

The AED provides cutting-edge professional training and education, inspires new developments in the field of EDs, and is the international source for state-of-the-art information on EDs.

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## Join the AED

Become a member of a global community dedicated to ED research, treatment, education, and prevention. Join online at: [www.aedweb.org](http://www.aedweb.org)

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