AED® Academy for Eating Disorders

AED REPORT 2021 | **4th** EDITION

Eating Disorders: A Guide to Medical Care

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EATING DISORDERS: A GUIDE TO **MEDICAL CARE**

Disclaimer: This document, created by the Academy for Eating Disorders' Medical Care Standards Committee, 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

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WHAT Are Eating Disorders?

Eating disorders are serious brain-based disorders with significant medical and psychiatric morbidity and mortality. Patients of all body shapes and sizes may have an eating disorder; the vast majority of those with eating disorders are not visibly emaciated. Eating disorders are treatable and full recovery is always possible.

Early recognition and timely intervention, based on a developmentally-appropriate, evidence-based, multidisciplinary team approach (including but not limited to medical, psychological & nutritional care) is the ideal standard of care, whenever 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 limited, clinicians, therapists, and dietitians are encouraged to consult with the Academy for Eating Disorders (AED) and/or eating disorder experts in their respective fields of practice.

This updated interactive resource seeks to help medical practitioners of all specialties and training to diagnose eating disorders more promptly and to help guide essential medical workup. We encourage practitioners to work collaboratively with an expert multidisciplinary eating disorder team whenever possible, as these professionals will have access to the most current treatment information and knowledge about this group of patients.

Key Points

- **Eating disorders (EDs) are serious mental illnesses with high rates of mortality.**
- **Elevated rates of life-threatening medical and psychiatric morbidity are common regardless of an individual's eating disorder diagnosis or weight.**
- **Eating disorders affect people of all ages, genders, races, abilities, and socioeconomic statuses.**
- **All clinicians should work to mitigate the risk of missing an eating disorder when a patient presents who does not conform to an imagined stereotype of someone with an eating disorder.**

Eating Disorder Diagnoses

The most common EDs based on the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5), include:

Anorexia Nervosa (AN): A reversible, biologically-based disorder characterized by restriction of energy intake leading to a significantly low body weight in the context of age, sex, developmental trajectory and health status and associated with a disturbance of body image, intense fear of gaining weight, lack of recognition of the seriousness of the illness and/or behaviors that interfere with weight gain. Anorexia nervosa has the second highest mortality of any psychiatric disorder. Two subtypes are distinguished: anorexia nervosa restricting type and anorexia nervosa binge eating/purging type. The binge eating/purging type carries risk of complications of both starvation and of regular binge eating and/or purging behavior.

Bulimia Nervosa (BN): Binge eating (eating a large amount of food in a relatively short period of time associated with a sense of loss of control over eating) followed by purging or other compensatory behavior (e.g. self-induced vomiting, laxative or diuretic abuse, insulin misuse, excessive exercise, fasting, diet pills) once a week or more, on average, for at least three months. Self-evaluation is unduly influenced by body shape and weight. For patients who are underweight the diagnosis of anorexia nervosa binge eating/purging type overrides the diagnosis of bulimia nervosa.

Binge Eating Disorder (BED): Binge eating, in the absence of compensatory behavior, at least once a week for three months or more. Binge eating episodes are associated with eating rapidly, regardless of hunger, until extreme fullness, and/or associated with depression, shame or guilt.

Avoidant/Restrictive Food Intake Disorder (ARFID): Significant weight loss, nutritional deficiency, dependence on nutritional supplement or marked interference with psychosocial functioning due to persistent failure to meet appropriate caloric and/or nutritional needs, but without weight or shape concerns. ARFID can include eating disorders associated with extremely selective eating, disrupted appetite cues, sensory processing difficulties, or anxiety regarding the consequences of eating (e.g. vomiting, choking, swallowing or other phobias).

ARFID may occur in children, adolescents and adults. Individuals with ARFID can have other sensory aversions to food due to food textures, temperatures, colors or smells, or fear aversive consequences (e.g., illness, choking, vomiting), or genuinely lack of interest in food.

Other Specified Feeding and Eating Disorder (OSFED): An ED that does not meet full criteria for one of the above categories but involves specific disordered eating behaviors such as restricting intake, purging and/or binge eating as key features. **Atypical Anorexia Nervosa**, for example, is a common type of OSFED characterized by all the features of anorexia nervosa in an individual whose weight remains above a minimum weight for age despite significant weight loss.

Unspecified Feeding or Eating Disorder (UFED): This is a preliminary diagnosis used when ED behaviors are present, but there is insufficient information to make a firm diagnosis.

Note: Both 'orthorexia' and 'diabulimia' are terms adopted by the lay press that are not recognized as official diagnoses, and thus are not addressed in this document.

Key Points

- Consult www.aedweb.org, DSM-5 or ICD-10 for full diagnostic descriptions.
- Full recovery is possible from all eating disorder diagnoses

Important Facts About Eating Disorders

- ***All*** eating disorders are serious disorders with the potential for life-threatening physical and psychological complications.

- Diet culture and weight bias can interfere with prompt diagnosis and treatment of eating disorders. Excessive value placed on weight loss, as well as the conflation of health and weight by providers and society, can delay eating disorder recognition and impede treatment.

- Eating disorders do not discriminate. They can affect individuals of all ages, genders, ethnicities, socioeconomic backgrounds, and all body shapes, weights and sizes. The majority of individuals with eating disorders are not visibly underweight.

- Individuals at any weight may be malnourished and/or engage in unhealthy weight control practices.

- Individuals with an eating disorder may not recognize the seriousness of their illness and/or may be ambivalent about changing their eating or weight control behaviors.

- All instances of precipitous weight loss or gain in otherwise healthy individuals should be investigated for the possibility of an eating disorder. Rapid weight fluctuations can be a potential marker of an eating disorder, although not all restrictive eating results in weight loss.

- In children and adolescents, failure to gain expected weight or height, and/or delayed or interrupted pubertal development, should be investigated for the possibility of an eating disorder.

- All eating disorders can be associated with serious medical complications affecting every organ system in the body. It is still very possible to have completely normal labs and no measurable physiologic dysfunction; individuals with this profile but with a suspected ED still merit prompt, multi-disciplinary care with an urgent focus on recovery. Eating disorders can also worsen medical symptoms from other diagnoses such as irritable bowel syndrome, migraines, and dysautonomia.

- Individuals with eating disorders, and sometimes their loved ones as well, may be reluctant to acknowledge eating disorder symptoms and/or the deleterious impact of the symptoms. Thus, denial of symptoms should not impede consideration of a possible eating disorder.

WHEN Do I Worry?

Presenting Signs and Symptoms

The short answer to, "When do I worry?" is as soon as you suspect an eating disorder. Early diagnosis and treatment are vitally important. Individuals with eating disorders may present in a variety of ways. In addition to the cognitive and behavioral signs that characterize eating disorders, the following physical signs and symptoms can occur in patients as a consequence of restricting food or fluid intake, nutritional deficiencies, binge-eating, and compensatory behaviors, such as purging. However, it is important to remember that a life-threatening eating disorder may occur without obvious physical signs or symptoms.

GENERAL

- Marked weight loss, gain, fluctuations or unexplained change in growth curves or BMI percentiles in a child or adolescent who is still growing and developing
- Cold intolerance, including hypothermia (low body temperature), general chilliness, or cool hands and feet which may or may not manifest a blue or purple color
- Weakness
- Fatigue and reduced energy
- Presyncope (dizziness)
- Syncope (fainting)
- Greater focus on "healthy" or "clean" eating, rigid exercise patterns
- Increased spending of money on binge foods
- Using the bathroom after meals to purge
- Evidence of purging found in the bathroom by other members of the household

EAR/NOSE/THROAT and EYES

- Oral trauma, lacerations, petechiae on back of throat
- Perimylolysis (dental erosion on lingual and occlusal tooth surfaces) and dental caries (cavities)
- Parotid gland enlargement and pain
- Cheilosis (cracked, sore skin at the corners of the mouth
- Dry eyes, blurred vision
- Difficulty swallowing dry foods or liquids

CARDIORESPIRATORY

- Chest pain
- Heart palpitations and cardiac arrhythmias
- Bradycardia (low heart rate at rest)
- Hypotension (low blood pressure)
- Dyspnea (shortness of breath)
- Edema (swelling)

GASTROINTESTINAL and GENITOURINARY

- Epigastric discomfort
- Abdominal bloating
- Early satiety (fullness) and nausea
- Gastroesophageal reflux (heartburn)
- Hematemesis (blood in vomit)
- Hemorrhoids and rectal prolapse
- Constipation

ENDOCRINE

- Shakiness, weakness, sweating, chest pressure, confusion, or nausea, which may signal hypoglycemia (a significant cause of death in eating disorders); hypoglycemia may also be asymptomatic
- Amenorrhea or oligomenorrhea (absent or irregular menses)
- Low sex drive (related to suppressed sex hormone production of estrogen/testosterone)
- Bone fractures, including stress fractures due to low bone mineral density/osteoporosis
- Infertility

NEUROPSYCHIATRIC

- Depressive/Anxious/Obsessive/Compulsive symptoms and/or behaviors
- Poor concentration or memory loss
- Insomnia
- Self-harm
- Suicidal thoughts, plans or attempts
- Reduced flexibility, creativity, spontaneity, with increasing rigidity around social engagements and mealtimes
- Seizures
- Substance use or abuse

DERMATOLOGIC

- Lanugo hair growth
- Hair loss
- Carotenoderma (yellowish discoloration of skin)
- Russell's sign (calluses or scars on the back of the hand associated with self-induced vomiting)
- Poor wound healing
- Dry, brittle hair and nails
- Fragile, dry skin that bruises or tears easily
- Sores or bruises over bony prominences

Malnutrition is a serious medical condition that requires urgent attention. It can occur in any individual engaging in disordered eating behaviors, **regardless of weight status.** Individuals with continued restrictive eating behaviors, binge eating or purging, require a comprehensive assessment and immediate intervention.

Comprehensive Assessment

The comprehensive assessment should include a complete eating disorder history, thorough physical exam with appropriate vital sign measurements, and an initial diagnostic evaluation. Complete history to include:

- Rate and amount of weight loss/change in past six months or longer. Rapid weight loss at any given starting weight has been associated with similar complications to those seen in patients at severely low body weight.
- Higher levels of weight suppression at end of treatment have been found to be associated with worse health outcomes.
  - We recommend calculating the percentage of body weight lost as a measure of malnutrition (see Appendix).
  - Weight suppression calculation: Highest recent body weight — Current body weight = Weight suppression
  - Weight suppression of even 5% of highest weight has been found to be medically significant in some individuals with eating disorders.
  - Note that in growing children and adolescents, this is more appropriately considered as "BMI percentile suppression" and is calculated as the difference between the highest and lowest BMI percentiles.
  - Growth history (obtain past growth charts whenever possible)
- Nutritional history: dietary intake (quantity and variety of foods consumed), restriction of specific foods or food groups (such as fats or carbohydrates)
- Compensatory behaviors and their frequency (self-induced vomiting, fasting or dieting, exercise, insulin misuse, and/or use of diet pills, other over-the-counter supplements including complementary and alternative medications, laxatives, ipecac, diuretics etc.)
- Exercise frequency, duration and intensity. Is the exercise excessive, compulsive, or rigid? Markers may include feeling unable to eat without having exercised, the inability to be restful, exercising in secret, or continuing to exercise when ill or injured
- If applicable, menstrual history (menarche, last menstrual period, regularity, any hormonal contraceptive use)
- If applicable, frequency of or change in spontaneous erections
- Reduced libido
- History of bone fractures
- Current medications, including any supplements and alternative medications
- Family history, including symptoms or diagnosis of EDs, obesity, mood, anxiety and

substance use disorders

- Psychiatric history, including symptoms of mood, anxiety and substance abuse disorders
- History of trauma (physical, sexual or emotional)

Physical examination to include:

- Measurement of height, weight, and body mass index (BMI = weight (kg)/height (m2)); as well as age and sex-specific percentiles if under 20 years of age
- Plotting measurements on growth curve with previous heights, weights, and BMIs
- Lying and standing heart rate and blood pressure
- Oral temperature

Initial diagnostic evaluation:

- Laboratory and other diagnostic studies recommended for consideration in evaluating a patient with an ED, along with potential corresponding abnormalities seen in patients with EDs, are outlined in the following chart.
- **It is important to note that laboratory studies may be normal even with significant malnutrition**
  - CDC growth curves: **Clinical Growth Charts**
  - CDC_BMIz scores: **Data Tables**

Published medical treatment guidelines:

- Identification and Management of Eating Disorders in Children and Adolescents
- Position Paper of the Society for Adolescent Health and Medicine: Medical Management of Restrictive Eating Disorders in Adolescents and Young Adults
- Initial Evaluation, Diagnosis, and Treatment of Anorexia Nervosa and Bulimia Nervosa
- Royal Australian And New Zealand College of Psychiatrists Clinical Practice Guidelines for the Treatment of Eating Disorders
- Treating Eating Disorders: A Quick Reference Guide

Basic diagnostic tests indicated for all patients with a suspected ED	Potential abnormal findings in a patient with an ED
Complete blood count	Leukopenia, anemia, or thrombocytopenia
Comprehensive metabolic panel to include electrolytes, renal function tests and liver enzymes	Glucose:⇣ (poor nutrition) Sodium: ⇣ (water loading or laxatives) Potassium: ⇣ (vomiting, laxatives, diuretics) Chloride: ⇣ (vomiting, laxatives) Blood bicarbonate: ⇡ (vomiting), ⇣ (laxatives) Blood urea nitrogen: ⇡ (dehydration) Creatinine: ⇡ (dehydration, renal dysfunction), ⇣ (poor muscle mass) Calcium: slightly ⇣ (poor nutrition at the expense of bone) Phosphate: ⇣ (poor nutrition and early refeeding syndrome) Magnesium: ⇣ (poor nutrition, laxative use) Total protein/albumin: ⇡ (in early malnutrition at the expense of muscle mass or milk of magnesia use), ⇣ (in later malnutrition) Aspartate aminotransaminase (AST), Alanine aminotransaminase (ALT): ⇡(starvation)
Electrocardiogram (ECG)	Bradycardia (low heart rate), prolonged QTc (>450msec), other arrhythmias
Additional diagnostic tests to consider	**Potential abnormal findings in a patient with an ED**
Thyroid hormone testing	TSH: ⇣ or normal T4: ⇣ or normal (euthyroid sick syndrome) T3: ⇣ if below metabolically healthy weight
Gonadotropins (LH and FSH) and sex steroids (estradiol and testosterone)	LH, FSH, estradiol (women) and testosterone (men) levels: ⇣ or low normal
Erythrocyte sedimentation rate (ESR)	ESR: ⇣ (starvation)
Prealbumin	Prealbumin: ⇣ (in protein-calorie malnutrition) — but only reflective of the past 72 hours pre-test

Criteria Supportive of Hospitalization for Acute Medical Stabilization	Criteria for Hospitalization for Acute Psychiatric Stabilization
Presence of one or more of the following	**Presence of one or more of the following**
1. ≤ 75% median BMI for age, sex, and height, or prolonged severe caloric restriction causing significant weight loss in the absence of underweight 2. Hypoglycemia 3. Electrolyte disturbance (hypokalemia, hyponatremia, hypophosphatemia and/or metabolic acidosis or alkalosis) 4. ECG abnormalities (e.g., prolonged QTc>450msec, bradycardia, other arrhythmias) 5. Hemodynamic instability • Bradycardia • Orthostatic hypotension • Hypothermia 6. Acute medical complications of malnutrition (e.g., syncope, seizures, cardiac failure, pancreatitis, etc.) 7. Acute severe food refusal unresponsive to outpatient treatment 8. Comorbid psychiatric or medical condition that prohibits or limits appropriate outpatient treatment (e.g., severe depression, suicidal ideation, obsessive compulsive disorder, type 1 diabetes mellitus) 9. Uncertainty of the diagnosis of an ED	1. Suicidal thoughts or behaviors 2. Aggression or unsafe behaviors 3. Other significant psychiatric comorbidity that interferes with ED treatment (anxiety, depression, obsessive compulsive disorder, mood instability)

Other Considerations Regarding Hospitalization
1. Inability to address symptoms at a lower level of care. 2. Binge eating and/or purging behaviors unable to be controlled in outpatient setting or lower level of care 3. Inadequate social support and/or follow up medical or psychiatric care

HOW Do I Treat?

Goals of Treatment

It is important to note that full resolution of symptoms may take an extended period of treatment. Psychological symptoms may transiently increase with initial treatment and improvement in physical health. Recognize that EDs are not merely fads, phases, or lifestyle choices. They are biologically-based, heritable disorders. People do ***not*** choose to have EDs and they ***can*** fully recover from them.

Medical stabilization, nutritional rehabilitation to achieve weight restoration and address nutrient deficiencies, management of refeeding and its potential 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 appropriate.

Medical treatment

- Management of acute and chronic medical conditions (medical stabilization, as presented above)
- Spontaneous (not hormonally-induced) resumption of menses (where appropriate), or resumption of appropriate pubertal progression and gonadal hormone levels

Nutritional rehabilitation

- Weight restoration
- Restore meal patterns that promote health and social connections
- Broaden food repertoire and macronutrient balance

Normalization of eating behavior

- Cessation of restrictive or binge eating and/or purging behaviors
- Elimination of disordered or ritualistic eating behaviors
- Eating without over-concern about foods; elimination of fears around eating

Psychosocial stabilization

- Evaluation and treatment of any comorbid psychological diagnoses
- Re-establishment of appropriate social engagement
- Improvement in psychological symptoms associated with ED
- Improved body image

Ongoing Management

Following initial stabilization, ongoing evidence-based treatment delivered by a multidisciplinary team of healthcare professionals with expertise in the care of patients with EDs is essential for full recovery. Optimal care includes medical, psychological, nutritional, and, for some patients, psychopharmacologic services. Family members (i.e., parents, spouses, partners) should be included in ED treatment whenever possible.

Eating disorders usually involve some periods of restriction of intake. All patients benefit from reversal of restriction. In all patients with an ED, restoration or maintenance of an appropriate, healthy weight consistent with their pre-illness trajectory will significantly improve their physical, psychological, social, and emotional functioning. Suggestions on how loved ones can conceptualize the importance of nutrition are found at: The Importance of Nutrition for

Understanding and Treating Eating Disorders, and a guide for providers is Guidebook for Nutrition Treatment of Eating Disorders. Failure to fully restore weight correlates with poor outcomes and maintenance of a healthy weight strongly correlates with improved outcomes.

Weight restoration alone is not sufficient in itself for full recovery. It is equally important that distorted body image and other ED thoughts/behaviors, psychological and psychiatric comorbidities and any social or functional impairments be addressed by qualified professionals during the treatment of patients with EDs. Psychologic treatment guidelines for children are here: Practice Parameter for the Assessment and Treatment of Children and Adolescents With Eating Disorders, and Canadian Practice Guidelines for the Treatment of Children and Adolescents with Eating Disorders, and for adults are here: Guideline Watch: Practice Guideline for the Treatment of Patients with Eating Disorders, 3rd Edition, and Practice Guideline for the Treatment of Patients with Eating Disorders: Third Edition, and Eating Disorders: Recognition and Treatment. Some suggestions on how to choose outpatient psychological treatment for a loved one are described here: Eating Disorder Treatment: How to Choose a Treatment Team for a Loved One with an Eating Disorder in the US, and A Guide to Selecting Evidence-based Psychological Therapies for Eating Disorders.

Refeeding Syndrome

Refeeding syndrome describes the clinical and metabolic derangements that can occur during refeeding (orally, enterally, or parenterally) of a malnourished patient. The clinical features of refeeding syndrome include edema, cardiac and/or respiratory failure, gastrointestinal problems, profound muscle weakness, delirium and, in extreme cases, death. Laboratory abnormalities may include hypophosphatemia (most significant), hypoglycemia, hypokalemia, and hypomagnesemia. Refeeding syndrome can occur in patients of any age and weight, and is a potentially fatal condition requiring specialized care on an inpatient unit. This paper describes some of the pathophysiologic mechanisms behind refeeding syndrome: The Importance of the Refeeding Syndrome

Risk factors for refeeding syndrome include:

- The degree of malnutrition at presentation: <75% median BMI in adolescents, BMI <15kg/m2 at highest risk in adults, patients with rapid or profound weight loss, including those who present at any weight after rapid weight loss (>10-15% of total body mass in 3 – 6 months)
- Patients who are chronically undernourished and those who have had little or no energy intake for more than 10 days
- History of refeeding syndrome
- Patients with significant alcohol intake (these patients are also at risk for the development of Wernicke's encephalopathy with refeeding. Prior to refeeding they should receive

thiamine and folate supplementation)

- Post-bariatric surgery patients with significant weight loss (increased risk with electrolyte losses from malabsorption) as well as higher risk of Wernicke's encephalopathy — should also receive thiamine
- Patients with a history of diuretic, laxative or insulin misuse
- Patients with abnormal electrolytes prior to refeeding

> IMPORTANT — Consider initiating refeeding in an inpatient setting if one or more risk factors for refeeding are present. Ideally patients should be admitted to a hospital that has access to or onsite ED specialist support.

How to Prevent and Manage Refeeding Syndrome

- Know the signs, symptoms, and risk factors for refeeding syndrome.
- Whenever possible, refer patients at risk for refeeding syndrome to physicians with expertise in medical and behavioural management of EDs and/or admit to an inpatient medical or medical-psychiatric unit with this expertise.
- Serum electrolytes (sodium, potassium, phosphorous, and magnesium) and glucose should be checked prior to initiating refeeding. Be aware that these may be normal prior to refeeding and will reach their lowest point 3 – 7 days after initiation of nutritional rehabilitation.
- Monitor blood glucose frequently. Both preprandial and postprandial glucose levels are often low in severely malnourished patients with AN.
- While treating a patient on an inpatient unit, monitor serum electrolytes and glucose frequently (at least daily if significantly abnormal) during early refeeding until stabilized (at least 72 hours).
- Replete all electrolyte deficiencies. Oral repletion is preferable but intravenous (IV) supplementation may be necessary. It is not necessary to correct fluid and electrolyte imbalance before initiating feeding. With careful monitoring, this can be safely achieved simultaneously.
- Start a multivitamin daily prior to initiating and throughout refeeding. Consider thiamine supplementation in severely malnourished patients due to the risk of Wernicke's encephalopathy.
- Monitor fluid replacement to avoid overload. The preferred rehydration route is oral. In cases where IV fluid is deemed necessary, it is best to avoid large volume fluid boluses due to risk of third spacing. Replace losses slowly instead with continuous IVF at low rates (e.g. 50 – 75 cc/hour for adult patients or ½ normal maintenance in children).
- Closely monitor fluid balance (total fluid intake and total fluid output), vital signs, electrolytes, liver function, and cardiac and mental status of all patients during refeeding.

Underfeeding

Underfeeding due to overly cautious (low) rates of refeeding can lead to further weight loss and may be associated with a worse prognosis, slower response to treatment and even death in seriously malnourished patients.

Methods of Nutritional Rehabilitation:

- "Start low and go slow" methods of nutritional rehabilitation, also called refeeding, have recently been challenged, and more rapid provision of calories with close medical monitoring is now the evidence-based recommendation during inpatient treatment. Recent studies have suggested safe outcomes with daily calorie start ranges from 1600 – 2400 with increases of 200 – 500 calories every 1 – 3 days, with close monitoring of AST, ALT, magnesium, and phosphorus to detect and prevent sequelae of refeeding syndrome.

- Most patients displaying significant malnutrition (see Appendix) will eventually require high calorie intake (3500-4000 kcal/day or more) to achieve consistent weight gain once medically stabilized beyond the initial stages of refeeding. This increased intake may be initiated as an inpatient and continued as an outpatient (once the patient is medically stabilized) until complete weight restoration is achieved. At this time a reassessment of nutritional needs should be performed for weight maintenance and/or growth.

- Oral nutritional rehabilitation is always preferred. Supplemental enteral feeds may be indicated when rates of weight gain are low (<2 lb/week) or access to an expert behavioral refeeding program is limited. Parenteral feeding is not recommended and should only be used in patients without a functional gut.

Children/adolescents and their families may need to be reminded that they are in a state of growth and development. Treatment goal weights and nutritional needs will change with time as children and adolescents continue to grow and develop.

Information for Medical Specialty Providers

Individuals with EDs are frequently referred to specialty providers for evaluation of medical complaints. It is important that every provider, regardless of specialty, recognize the signs and symptoms consistent with an ED, manage complications appropriately, and know when to refer a patient for specialized ED evaluation and treatment and/or refer for hospital admission due to significant medical compromise. Collaborative care with an ED specialist is recommended as this is in the best interest of all patients.

For all providers: **Please maintain a high index of suspicion for EDs.** Keep in mind that EDs may be present in patients of any age, race, gender or size. Screen and refer to specialty care as indicated. A validated screening tool such as the SCOFF (see Appendix 1) may be useful in identifying patients who would benefit from further evaluation for an ED.

Cardiology

- Bradycardia is a physiologic, adaptive response to starvation and is the most common arrhythmia in patients with EDs. Bradycardia should not be automatically attributed to athleticism or training in patients who are underweight or who have experienced rapid weight loss. Heart block can also be a present on presentation in the setting of low weight or rapid weight loss.
- Cardiologists should consult with ED specialists if they are considering an ED or evaluating a known patient with an ED. Collaborative care helps put the patient's diagnosis and clinical presentation into an appropriate context.

Dentistry

- Self-induced vomiting can cause perimylolysis, a smooth erosion of the enamel on lingual and occlusal surfaces of teeth due to exposure to the low pH of acid from the stomach.
- Bilateral parotitis, dental sensitivity, and mucosal ulcerations can also be appreciated in patients with who repeatedly vomit.
- Patients with eating disorders can also have a higher risk of tooth fracture during dental work due to the effects of malnutrition on bone mineral density.

Emergency Medicine

- Patients with EDs present to emergency departments at rates higher than individuals without EDs for a variety of complaints including GI symptoms, syncope, seizures, and dehydration.
- An emergency department visit may be a patient with an ED's first interaction with healthcare providers. The sooner a patient receives appropriate treatment, the more likely they are to fully recover from their illness. A positive clinician-patient interaction in the emergency department and referral to appropriate ED specialty care may help to significantly reduce the length and severity of illness.
  - Note that serious complications can occur at all weights; patients of higher weights should be taken just as seriously as those at lower weights

- Consult with ED specialists if unclear about the appropriate disposition and follow-up.
- Avoid overly aggressive fluid resuscitation in patients with EDs as this may precipitate volume overload and congestive heart failure due to risk of volume overload, third spacing and congestive heart failure.
  - Use low volume continuous IV fluid rather than large boluses to rehydrate.
- Avoid **excess** glucose administration as this may precipitate refeeding syndrome.
- Severely underweight (BMI<14) patients are at risk of Wernicke Korsakoff's Syndrome and should receive IV thiamine before administering any dextrose.
- Hyponatremia and seizures may be presenting signs of excessive water intake in eating disorder patients.
- Electrolyte monitoring is crucial in high risk patients, especially in those receiving intravenous fluids.
- An AED guide to ER treatment: Eating Disorders in the Emergency Department

Endocrinology

- Individuals with Type I diabetes and an eating disorder can underdose their insulin to waste glucose and lose weight, leading to dangerous complications. Poor glucose control and/or frequent episodes of DKA in any diabetic patient should prompt evaluation for an eating disorder.
- Consider euthyroid sick syndrome (ESS) in a low weighted patient with abnormal thyroid studies (normal TSH, decreased T3 levels, may have decreased T4, increased reverse T3). ESS does not require thyroid hormone supplementation and will resolve with weight restoration.
- Younger patients with eating disorders may present with growth concerns. In particular, patients with AN or ARFID may be at risk for poor growth compared to genetic potential. Growth in patients with eating disorders will often not improve without eating disorder specific care.

Gastroenterology

- GI complaints such as constipation, abdominal pain, nausea, hematemesis, frequent heartburn, and early satiety are amongst the most common physical symptoms in persons with EDs. Many patients develop gastroparesis of varying degrees in the setting of chronic undernutrition, and can experience discomfort or pain when an adequate volume is consumed. Delayed gastric emptying is also often associated with self induced vomiting.
- Elevated aminotransferases are also frequently seen in patients with EDs.
- These signs, symptoms and abnormal laboratory values often prompt referral to a gastroenterologist. Symptomatic treatment for GI symptoms may be initiated but treatment of the underlying condition is essential to normalizing GI function. It is important to note that most GI symptoms improve or resolve with resolution of the ED.
- Younger patients with eating disorders may present with failure to thrive. In particular,

patients with ARFID may present with ongoing supplement (PO or NG) dependence. Growth and supplement reliance will often not improve without eating disorders specific care.

Obstetrics and Gynecology

- Amenorrhea or oligomenorrhea without other identified cause should prompt evaluation for an ED. Amenorrhea can be associated with dysregulated eating behavior even in the absence of significant weight loss, in individuals at normal or higher BMI with an ED.
- Oral contraceptives (OCPs) for treatment of amenorrhea or oligomenorrhea are not indicated for most patients with ED who do not otherwise require contraception.
- There is no current evidence to support the use of oral estrogen preparations (including OCPs) for treatment of low bone mineral density in a low-weight patient with amenorrhea. Weight restoration and resumption of menses are the treatments of choice. Some small studies have shown benefit to skeletal health using transdermal estrogen for adolescents with anorexia nervosa at a very low BMI.
- Although individuals with EDs may have suppressed ovarian function, pregnancy can still occur.
- Infertility may also be a presenting complaint in patients with EDs. Assisted reproductive technology (ART) is contraindicated in low weighted patients with EDs. These patients are at increased risk of miscarriage, intrauterine growth retardation, low birth weight and other pregnancy and birth complications with the use of ART and should be encouraged to nutritionally rehabilitate and seek treatment for their ED as a primary recommendation. Following full ED recovery, fertility rates should be considered to be no different from any person trying to get pregnant.

Psychiatry

- Patients with EDs have high rates of comorbidity with other psychiatric disorders including depression, anxiety, obsessive compulsive disorder, post-traumatic stress disorder, self-harm behaviors and substance abuse, and are at high risk of suicide.
- Patients with EDs may report symptoms of depression or other mental illness without recognizing or revealing ED thoughts or behaviors.
- Anorexia nervosa has the second highest mortality rate of all psychiatric disorders, second only to opiate use disorders. Their identification and appropriate treatment by an ED specialist is imperative.
- Substance use disorder is very common concurrent with eating disorders, and both must be addressed for full recovery.

Pediatrics

- Children and adolescents presenting with failure to thrive, fussy or selective eating, gastrointestinal symptoms (e.g., nausea, loss of appetite, constipation), unexplained weight loss, lack of weight gain or delayed growth and development should be evaluated for a possible ED.

- Assessing a child's growth curve is often an important part of evaluating for an eating disorder.
- Carefully consider a parent's concerns about any change in their child's eating behaviors, mood, weight or growth.

Sports Medicine

- Relative energy deficiency in sport (RED-S) is a syndrome that results in impaired physiological function of multiple body systems caused by relative energy deficiency due to an imbalance between dietary energy intake and energy expenditure required for health. RED-S was formerly the "Female Athlete Triad" (disordered eating, menstrual disturbance, low bone density), but now includes all genders **The IOC consensus statement: beyond the Female Athlete Triad—Relative Energy Deficiency in Sport (RED-S)**. Individuals who participate in the following sport may be at increased risk and include running, cycling, boxing, marital arts, rowing, gymnastics and dance. RED-S can overlap with or evolve into an eating disorder.
- Inadequate nutrition can contribute to decreased athletic performance, repetitive or persistent injuries. Screening for eating disorders in patients who present with these symptoms is essential.
- If individuals diagnosed with RED-S are unable after appropriate education and nutritional prescriptions to increase their intake and either reverse their medical complications and/or achieve a goal weight, or consistently engage in compulsive or driven exercise, an eating disorder should be strongly considered and multidisciplinary treatment should be sought.

What CAN I Do?

Timely Interventions

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

This is a symptom of their illness. 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. Most often parents/guardians are the frontline help-seekers for children, adolescents, and young adults with EDs.

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

3. Diffuse blame.

Help families understand that they did not cause the illness; neither did the individual with the ED choose to have it. This recognition facilitates acceptance of the diagnosis, referral, treatment, and minimizes undue stigma associated with having the illness.

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

Patients with an ED should be regularly monitored for acute and chronic medical complications. Assessments should be interpreted in the context of physiological adaptation to malnutrition and purging behavior. Clinicians need to remember that physical exam and laboratory tests may be normal even in the presence of a life-threatening ED.

5. Consider psychiatric risk.

Always assess for psychiatric risk, including suicidal and self-harm thoughts, plans and/or intent. Up to half of deaths related to EDs are due to suicide. While some degree of anxiety and depressive symptoms are common on presentation, proper diagnosis of other mental health comorbidities over time is also suggested as adequate treatment can improve outcome.

WHERE Can I Learn More?

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For further references and information about the diagnosis and treatment of EDs visit: **www.aedweb.org**, and **https://www.aedweb.org/publications**

Appendix 1

An example of a validated screening tool for eating disorders — **The SCOFF**.*
Other screening tools are available.

S – Do you make yourself **Sick** because you feel uncomfortably full?

C – Do you worry you have lost **Control** over how much you eat?

O – Have you recently lost more than **One** stone (6.35 kg or 14 lb.) in a three-month period?

F – Do you believe yourself to be **Fat** when others say you are too thin?

F – Would you say **Food** dominates your life?

*Two or more positive responses on the SCOFF indicates a possible ED and should prompt referral for further evaluation.

Appendix 2

Considerations in the grading of malnutrition

Mild Malnutrition

(consider if any of the following are present)

- 80-90% median BMI for age/gender using CDC growth curves
- BMI Z-score -1.0 to -1.99
  - In adults these equate to a BMI of 17.2-19.1 in females and 18.4-20.5 in males, in the context of evidence of malnutrition and/or weight loss
- Weight loss > 10% pre-illness weight
- Deceleration in BMI across one Z-score or CDC growth curve line
- Eating 51-75% of estimated needs

Moderate Malnutrition

(consider if any of the following are present)

- 70 – 79% median BMI for age/gender using CDC growth curves
- BMI Z-score -2.0 to -2.99
  - In adults these equate to a BMI of 15.2 – 17.2 in females and 16.1-18.4 in males
- Weight loss >15% pre-illness weight
- Deceleration in BMI across two Z-score or CDC growth curve lines
- Eating 26 – 50% of estimated needs

Severe Malnutrition

(consider if any of the following are present)

- <70% median BMI for age/gender using CDC growth curves
- BMI Z-score ≤ -3.0
  - In adults these equate to a BMI of <15.2 in females and <16 in males
- Weight loss >20% pre-illness weight in 1 year or > 10% in 6 months
- Deceleration in BMI across three Z-score or CDC growth curve lines
- Eating ≤25% of estimated needs

Note: Linear growth stunting as noted on growth curves could indicate severe malnutrition. In addition, it is acknowledged that CDC growth curves reflect norms for a US population; cut-points for BMI may be modified somewhat in other populations.

*Considerations are adapted from the following sources: Golden NH, et al., Position Paper of the Society for Adolescent Health and Medicine: Medical Management of Restrictive Eating Disorders in Adolescents and Young Adults, Journal of Adolescent Health 56 (2015) 121e125., Becker P et al., Consensus Statement of the Academy of Nutrition and Dietetics and American Society for Parenteral and Enteral Nutrition: Indicators Recommended for the Identification and Documentation of Pediatric and Malnutrition (Undernutrition), Nutr Clin Pract. 2015 Feb;30(1):147-61, and Peebles R, Sieke E, Medical Complications of Eating Disorders in Youth, Child and Adol Psych Clinics of North America, 2019

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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