Recognition and Management of Eating Disorders for the Primary Care Physician

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Conflict of Interest Disclosure

I have no conflicts and disclose that:

- *I anticipate referencing the unlabeled / unapproved use of the following medications: spironolactone for Pseudo-Bartter syndrome, olanzapine for anorexia nervosa, SSRIs and topiramate for binge eating disorder, metoclopramide for gastroparesis.*

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Objectives

- Name the DSM criteria for the diagnosis of the most common eating disorders
- Identify the common presenting symptoms and medical complications of eating disorders in the primary care and acute care settings
- Explain the initial medical evaluation of eating disorders in the primary care setting
- Identify the clinical indications for inpatient treatment of patients with eating disorders
- Describe key points regarding the management of common medical complications of eating disorders

Overview

- Case examples
- Prevalence and risk factors
- Diagnostic criteria for eating disorders
- Recognition of Eating disorders: Signs and symptoms
- Medical assessment and management
- Screening for eating disorders
- Take away points

Cases

Case 1

- 38 year old cisgender female presents with fatigue
- BP 98/60 HR 48 Height 5'7'' Weight 115 lbs BMI 18.0
- Exam: bradycardia, heart rate increases to 100 with short walk in hallway
- ECG sinus bradycardia
  - Runs 5 miles a day, Restricting food intake to <1000 calories per day
  - Diagnosis: Anorexia nervosa, restricting type

Case 2

- 26 year old transgender male presents with abdominal pain, bloating, and nausea
- Vitals: BP 108/68 HR 60 Ht 5'8" Wt 175 lbs BMI 26.6
- Exam: Diffuse abdominal tenderness, hypoactive BS
- Labs normal
- Abdominal X-ray large amount of stool in the colon
- Restrictive keto diet 500 calories per day, 2 hours of exercise daily, purging once a week, 20 lbs weight loss in 3 months
- Diagnosis: Atypical anorexia nervosa

Case 3

- 29 year old cisgender male presents to the ER with heart palpitations, lightheadedness
- Vital signs: BP 108/70 HR 118 Height 5'10" Weight 160 lbs BMI 23
- Exam: CV sinus tachycardia with ectopy, dry mucous membranes
- Labs: Potassium 3.1, Bicarb 34, creatinine 1.0, BUN 23
- Given 2 L IVF upon arrival to the ER
- Develops bilateral lower extremity edema
- Binge eating/purging episodes twice a day
- Diagnosis: Bulimia nervosa

Case 4

- 34 year old cisgender female status post Roux-en-Y gastric bypass surgery 6 months ago presents for routine f/u
- BP 128/80 HR 60 Height 5'4'' Weight 217 lbs, BMI 37.2
- Labs: Mild transaminitis, UA large ketones
- Severe restrictive eating 500 calories or less per day, losing 3-5 lbs per week, total weight loss 120 lbs since surgery
- Diagnosis: Atypical anorexia nervosa

Case 5

- 44 year old transgender female presents to PCP for routine annual exam
- Vitals: BP 128/78 HR 78 Height 5'9" Weight 220 lbs BMI 32.5
- Exam: Normal
- Labs: BMP, lipids, TSH normal
- Instructed by PCP to lose weight by starting a low carb diet
  - Restricting throughout the day, and binge eating episodes nightly
  - Diagnosis: Binge eating disorder

Case 6

- 23 year old cisgender female presents with right foot pain for 2 weeks
- Vital signs: BP 120/72 HR 56 Height 5'5" Weight 125 lbs BMI 20.8
- Exam: tenderness right foot metatarsals
- Xray: Stress fracture 5th metatarsal
- Weight 6 months ago was 165 lbs, amenorrheic for 6 months
  - Restrictive eating, cardio exercise at the gym for 2 hours daily
  - Diagnosis: Atypical anorexia nervosa

Eating Disorders: Epidemiology and Risk Factors

Epidemiology

- Lifetime prevalence of eating disorders in a national population-based study in 2007:
  - Anorexia nervosa: 0.9% in women and 0.3% in men
  - Bulimia nervosa 1.5% in women 0.5% in men
  - Binge eating disorder: 3.5% in women 2% in men
  - Lacking data on Other specified feeding and eating disorders
- Eating Disorders have the highest mortality rate of any other mental illness

Hudson et al. Biol Psychiatry. 2007;61(3):348. Epub 2006 Jul 3

Eating Disorders Among Marginalized Groups

- People with Atypical Anorexia Nervosa (presenting with weight in the normal, overweight, or obese ranges) have delays in diagnosis and treatment despite carrying the same risk of medical complications.
- People of color with eating and weight concerns are significantly less likely to receive referrals for eating disorder care.
- Transgender youth are four times more likely to suffer from an eating disorder than cisgender peers.

Sawyer et al. Pediatrics April 2016. 137 (4). Becker et al. Int J Eat Disord. 2003 Mar;33(2):205-12. Gordon et al. Behav Ther. 2006 Dec;37(4):319-25. Epub 2006 Jul 21. Diemer EW, Grant JD, Munn-Chernoff MA, Patterson DA, Duncan AE. Gender identity, sexual orientation, and eating-related pathology in a national sample of college student. J Adolesc Health. 2015;57(2):144-149.

Risk factors

- Dieting
- Sociocultural idealization of thinness
- Bullying and weight stigma
- Genetics
- Co-occurring anxiety disorders

Golden, N. H., Schneider, M., & Wood, C. (2016). Pediatrics, 138(3). doi:10.1542/peds.2016-1649 Culbert, K. M., Racine, S. E., & Klump, K. L. (2015). J Child Psychol Psychiatry, 56(11), 1141-1164.

Diagnosis of Eating Disorders

DSM 5 Criteria: Anorexia Nervosa

A. Restriction of energy intake relative to requirements, leading to a significantly low body weight

B. Intense fear of gaining weight or of becoming fat or persistent behavior that interferes with weight gain

C. Disturbance in the way in which one's body weight or shape is experienced, undue influence of body weight or shape on self-evaluation, or persistent lack of recognition of the seriousness of the current low body weight

DSM 5 Criteria: Anorexia Nervosa

- **Restricting type:** Weight loss is accomplished primarily through dieting, fasting, and/or excessive exercise
- **Binge eating/purging type:** During the last three months, the individual has engaged in recurrent episodes of binge eating or purging behavior.

DSM 5 Criteria: Bulimia Nervosa

A. Recurrent episodes of binge eating characterized by eating an unusually large amount of food in a discrete period of time with a sense of lack of control over eating during the episode
B. Recurrent inappropriate compensatory behavior to prevent weight gain, such as self-induced vomiting; abuse of laxatives, diuretics, or enemas; fasting; or excessive exercise.
C. The binge eating and inappropriate compensatory behaviors both occur, on average, at least once a week for three months
D. Self-evaluation is unduly influenced by body shape and weight.

DSM 5 Criteria: Binge Eating Disorder

A. Recurrent episodes of binge eating characterized by eating an unusually large amount of food in a discrete period of time with a sense of lack of control over eating during the episode
B. Binge eating episodes are marked by at least three of the following:
   1. Eating more rapidly than normal
   2. Eating until feeling uncomfortably full
   3. Eating large amounts of food when not feeling physically hungry
   4. Eating alone because of embarrassment by the amount of food consumed
   5. Feeling disgusted with oneself, depressed, or guilty after overeating
C. Episodes occur, on average, at least once a week for three months
D. No regular use of inappropriate compensatory behaviors

DSM 5 Criteria: Other Specified Feeding and Eating Disorders

- **Atypical anorexia nervosa:** All of the criteria for anorexia nervosa are met, except that body mass index is in the normal, overweight, or obese ranges at presentation.
- **Bulimia nervosa of low frequency and/or limited duration**
- **Binge eating disorder of low frequency and/or limited duration**
- **Purging disorder**

Body weight and Eating disorders

- **All disordered eating behaviors occur in bodies of all sizes**

C/o Erin Harrop, BS, MSW. ICED conference 2018.

Eating Disorders Presentation

- Eating disorders do not discriminate
- Masquerade as other medical conditions
- Many varied presenting signs and symptoms
- Present to ERs, Urgent Care, PCPs, specialists
- Often go unrecognized

Eating Disorders Recognition: Signs and Symptoms

General signs and symptoms

- Weight fluctuations
  - Weight loss or weight gain
  - Weight suppression important marker
  - Lack of weight gain or height growth in adolescents
- Fatigue
- Temperature regulation
  - Cold/heat intolerance
  - Hypothermia
  - Sweats

Berner et al. Int J Eat Disord. 2017 Apr;50(4):442-446. doi: 10.1002/eat.22697. Epub 2017 Mar 6. Jenkins et al. J Psychiatr Ment Health Nurs. 2018 Jun;25(5-6):297-306. doi: 10.1111/jpm.12462. Epub 2018 May 31. Levender et al. J Psychiatr Res. 2015 Oct;69:87-93. doi: 10.1016/j.jpsychires.2015.07.021. Epub 2015 Jul 20.

Cardiovascular symptoms and signs

Symptoms	• Palpitations • Dizziness/syncope • Chest pain • Dyspnea • Edema
Vital signs	• Hypotension • Bradycardia (HR <60) • Orthostatic hypotension/tachycardia
Exam	• Heart murmur • Lower extremity edema • Acrocyanosis

Abnormal ECG findings

- Low voltage
- Sinus bradycardia
- Sinus tachycardia
- AV block
- PACs, PVCs
- Prolonged QT
- T wave changes/U waves

Second Degree AV block Mobitz Type 1 Wenckebach

QT prolongation

Gastrointestinal signs and symptoms

- **Salivary gland enlargement:** parotid and submandibular gland swelling, pain
- **GERD:** heartburn, cough, sore throat, hoarseness
- **Gastroparesis:** bloating, fullness, early satiety
- **Constipation:** abdominal pain, bloating

Gastrointestinal signs and symptoms

- **Irritable bowel syndrome/Functional bowel disorders:** diarrhea, constipation, abdominal pain, bloating
- **Rectal prolapse:** incomplete evacuation, straining, prolapsed tissue
- **Transaminitis:** Asymptomatic
- **Pancreatitis:** epigastric pain, vomiting

Gastrointestinal signs and symptoms

- **Mallory-Weiss tear**
  - Esophageal mucosal lacerations due to vomiting
- **Esophageal rupture (Boerhaave syndrome)**
  - Perforation of the esophagus
  - Increased intraesophageal pressure and negative intrathoracic pressure

Gastrointestinal signs and symptoms

Cathartic colon

- Due to chronic laxative abuse
- Colonic dilation and loss of haustral folds on imaging
- Symptoms: Bloating, fullness, abdominal pain, incomplete evacuation

Endocrine signs and symptoms

- **Hypothalamic-pituitary axis suppression**
  - Amenorrhea or oligomenorrhea
  - Osteoporosis/Stress fractures
  - Low FSH, LH, estradiol or testosterone
- **Euthyroid sick syndrome**
  - Low T3, T4, normal TSH

Endocrine signs and symptoms

- **Hypoglycemia:** Dizziness, nausea, tremor, seizures
- **Patients with Type 1 or Type 2 Diabetes Mellitus:**
  - Higher incidence of eating disorders
  - Hypoglycemia
  - Hyperglycemia/DKA

Hematologic signs and symptoms

Presenting symptoms	Lab findings
• Fatigue • Often asymptomatic • Petechiae in rare cases	• Leukopenia • Anemia • Thrombocytopenia • Due to vitamin deficiencies (Iron, B12, folate) and bone marrow suppression

Neurologic signs and symptoms

- Cognitive dysfunction
  - memory loss, confusion
- Seizures
- Peripheral neuropathy
  - Tingling/numbness
- Wernicke's encephalopathy
  - Confusion, ophthalmoplegia, ataxia

Seitz et al. Z Kinder Jugendpsychiatr Psychother. 2014 Jan;42(1):7-17; quiz 17-8. doi: 10.1024/1422-4917

Musculoskeletal signs and symptoms

- Symptoms
  - Myalgias
  - Muscle cramps
- Lab findings
  - Elevated CK
  - Renal insufficiency due to rhabdomyolysis

Renal and electrolytes

Lab	Direction	Cause
Sodium	Dec	Vomiting, laxatives, water loading, impaired conc
Potassium	Dec	Laxatives, Vomiting, Diuretics
Chloride	Dec	Vomiting, laxatives
Magnesium	Dec	Malnutrition, diuretics
Phosphorus	Dec	Malnutrition
Calcium	Dec	Malnutrition
Bicarb	Inc	Vomiting
	Dec	Laxatives
Creatinine	Inc	Dehydration, hypokalemia
	Dec	Low muscle mass
BUN	Inc	Dehydration
Spec gravity	Inc	Dehydration
	Dec	Water loading

Pseudo-Bartter syndrome

- Patients with chronic self-induced vomiting or laxative abuse
- Occurs with abrupt discontinuation of the behaviors or aggressive fluid resuscitation

Skin, hair, teeth symptoms and findings

- Lanugo
- Telogen effluvium
- Dry skin
- Russell's sign
- Dental caries

Common Presentations of Eating Disorders in Primary Care

- ❑ Amenorrhea or oligomenorrhea
- ❑ Syncope or dizziness
- ❑ Bradycardia
- ❑ GI symptoms
- ❑ Stress fractures
- ❑ Vitamin deficiencies, anemia
- ❑ Fatigue
- ❑ Asymptomatic and normal labs

Eating Disorders: Medical Assessment and Management

Medical assessment: Vitals

- Blind weight
- BP, HR, Temp, Resp, O2 sat

Orthostatic Vital Signs
≥20 mm Hg decrease SBP
≥ 10 mm Hg decrease DBP
HR ≥20 points increase

- Heart rate walk test
  - Conditioned athletic heart vs malnourished heart

Medical assessment: Exam

- General: variations in body sizes
- Skin/hair: lanugo, hair loss, dry skin
- HEENT: salivary glands, mucous membranes, dentition
- Cardiovascular: Murmurs, Arrhythmias, Edema, Acrocyanosis, Pulses
- Respiratory: respiratory rate and effort
- Abdominal: BS, distension, tenderness, HSM
- Neurologic: weakness, decreased sensation, reflexes

Medical assessment: Labs to order

CBC	**Ferritin**
BMP, Mg, Phos	**Vitamin B12**
LFTs	**Folate**
Amylase, lipase	**25-OH vitamin D**
TSH, FT4, FT3	**Thiamine**
Urinalysis	**Zinc**
Urine pregnancy test	**FSH, LH**
CK	**Estradiol or testosterone**

Medical assessment: Tests to order

- ECG
- Echocardiogram: based on symptoms, exam, and ECG findings
- Xray Imaging if indicated
- DEXA indicated if:
  - Amenorrhea or Low testosterone in men
  - Stress fracture
  - Anorexia nervosa present for ≥ 6 months

Management: Referral to Appropriate Levels of Care

- Inpatient
- Residential
- Partial Hospitalization Program (PHP)
- Intensive Outpatient Program (IOP)
- Outpatient

Management: Criteria for Inpatient Treatment of Eating Disorders

- Heart rate < 40 (<50 in adolescents)
- Blood pressure <90/60
- Temperature <97
- Glucose < 60
- Potassium < 3
- <85% expected body weight
- Renal/Electrolytes: Severe electrolyte abnormalities, Metabolic acidosis/alkalosis
- Cardiac: Prolonged QT, acute arrhythmias, CHF, persistent orthostasis
- GI: Pancreatitis, esophageal tears
- Neurologic: Seizures

Yager et al. *Practice Guideline for the Treatment of Patients with Eating disorders.* Third Edition. American Psychiatric Association. 2010.

Outpatient management: Team approach

- Referral to outpatient eating disorders specialists: Registered Dietitians, Therapists, Psychiatrists, Medical providers
- Nutritional counseling: Meal plans, intuitive eating, moderation/discontinuation of exercise
- Psychotherapy: CBT, DBT, ACT, FBT, Somatic therapy, Group therapy

Outpatient management: Role of the PCP

- Collaboration and coordination of care with outpatient team
- Pharmacologic therapy if indicated
- Assessment and management of medical complications and psychiatric comorbidities

Pharmacologic Therapy

Anorexia nervosa:

- SSRIs utilized for co-occurring mood and anxiety disorders, but are ineffective at very low weights and with severe restriction in food intake
- Evidence for use of Atypical psychotics, primarily olanzapine

Bulimia nervosa:

- SSRIs effective for decreasing binge/purge behaviors, particularly fluoxetine
- Buproprion is contraindicated due to seizure risk

Binge Eating Disorder

- Evidence for use of SSRIs, topiramate, lisdexamfetamine

Medical complications: Key points for management

Gastrointestinal

- **Constipation:**
  - Stool softeners
  - Polyethylene glycol
  - Saline/mineral oil enemas
  - Avoid stimulant laxatives
  - Pelvic floor physical therapy
- **GERD:**
  - PPIs and H2 blockers
- **Functional bowel disorders:**
  - Probiotics
- **Gastroparesis:**
  - metoclopramide

Medical complications: Key points for management

Endocrine

- **Amenorrhea and osteopenia:**
  - OCPs ineffective to treat osteopenia
  - Treatment is re-nourishment
  - Some evidence for use of transdermal estradiol
  - Calcium/vitamin D supplementation
- **Euthyroid sick syndrome:**
  - Thyroid supplementation not indicated
  - Treatment is re-nourishment

Medical complications: Key points for management

Renal/Electrolytes

- **Electrolytes:**
  - Replete aggressively
- **IV Fluids:**
  - Slow continuous infusion rather than boluses
- **Pseudo-Bartter's syndrome:**
  - spironolactone 25 mg daily for 2 weeks

Risks of treatment: Refeeding syndrome

Malnutrition/total body electrolyte depletion → Glucose replenishment → Insulin secretion → Shift of electrolytes (Phos, Mg, K) into cells → Tissue hypoxia

Manifestations

- Low Phos, K, Mg, elevated LFTs
- Rhabdomyolysis, myocardial dysfunction, diaphragmatic dysfunction
- Edema, CHF, arrhythmias
- Seizures

Management

- Electrolyte Replacement
- Telemetry
- Supportive Care

Weight-inclusive Care for Eating Disorders

- Underdiagnosis of eating disorders in people in larger bodies
- Recognize weight bias
- Acknowledge weight stigma and its effect on risk of eating disorders
- Consider risks of dieting on development of eating disorders
- Screen for eating disorders in patients presenting to discuss their weight

Ohara and Taylor. SAGE Open April-June 2018: 1 –28. 2018, Puhl et al. Am J Public Health. 2010 June; 100(6): 1019–1028., Tylka et al. J of Obesity. July 2014. Puhl et al. Obesity,vol.14,no.10,pp.1802–1815,2006.

Weight-inclusive Care for Eating Disorders

- **Binge eating disorder:**
  - Cycles of restriction and bingeing are typical
  - Focus on adequate nourishment and avoidance of restriction/dieting in addition to addressing bingeing behaviors
- **Atypical anorexia nervosa:**
  - Focus on weight suppression rather than presenting BMI
  - Assess for complications of malnutrition, which occur in all body sizes
  - Prompt referral to specialists and treatment centers

Sawyer et al. Pediatrics April 2016. 137 (4). Berner et al. Int J Eat Disord. 2017 Apr;50(4):442-446. doi:10.1002/eat.22697. Epub 2017 Mar 6. Jenkins et al. J Psychiatr Ment Health Nurs. 2018 Jun;25(5-6):297-306. doi: 10.1111/jpm.12462. Epub 2018 May 31. Pershing and Turner. *Binge Eating Disorder*. 2019.

Screening for Eating Disorders in Primary Care

Eating Disorders Screening Tools

SCOFF questionnaire:

- Do you make yourself **S**ick because you feel uncomfortably full?
- Do you worry you have lost **C**ontrol over how much you eat?
- Have you recently lost more than **O**ne stone (14 lbs) in a 3 month period?
- Do you believe yourself to be **F**at when others say you are too thin?
- Would you say that **F**ood dominates your life?

*2 or more Yes responses: high risk of ED (sens 100%, spec 88%)

Reference: Morgan et al. The SCOFF questionnaire: assessment of a new screening tool for eating disorders. BMJ 1999; 319(7223): 1467.

Eating Disorders Screening Tools

Eating Disorder Screen for Primary Care

- Are you satisfied with your eating patterns?
- Do you eat in secret?
- Does your weight affect the way you feel about yourself?
- Have any members of your family suffered with an eating disorder?
- Do you currently suffer with or have you ever in the past suffered with an eating disorder?

*2 or more Yes responses: high risk of ED (sens 100%, spec 71%)

Reference: Cotton et al. Four simple questions can help screen for eating disorders. J Gen Intern Med. 2003; 18(1):53.

Take away points

- Eating disorders affect people of all ages, body sizes, genders, and races/ethnicities.
- Eating disorders present with a multitude of signs and symptoms and masquerade as other conditions.
- Patients with eating disorders may have no symptoms, normal exam and lab findings but still be very sick and in need of treatment.
- Early recognition and referral to eating disorders specialists and treatment centers is crucial.

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- Mehler and Anderson. *Eating disorders: A Guide to Medical Care and Complications*.
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- Pritts et al. Diagnosis of Eating Disorders in Primary Care. *Am Fam Physician*. 2003 Jan 15;67(2):297-304.
- Harrington et al. Initial Evaluation and Treatment of Anorexia nervosa and Bulimia nervosa. *Am Fam Physician*. 2015. Jan 1;91(1):46-52.
- *Health at Every Size* by Linda Bacon and *Body Respect* by Linda Bacon and Lucy Aphramour

Questions?

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