NATIONAL CURRICULUM IN REPRODUCTIVE PSYCHIATRY

Eating Disorders

The Basics

Self-Study 1

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Learning Objectives
By the end of this self study, participants will:

1) Be familiar with diagnostic criteria of eating disorders, as well as common presentation and screening tools
2) Understand the various medical complications associated with eating disorders and their symptoms
3) Be able to identify different levels of care and indications for each one
4) Recognize specific challenges in discussing symptoms with individuals with eating disorders, with specific tips and tools to use during treatment

Diagnostic Overview: **DSM-5 Feeding and Eating Disorders**

A. Anorexia Nervosa (AN)
- i. Diagnostic Criteria
  1. Restriction of energy intake relative to requirements, leading to a significantly low body weight in the context of age, sex, developmental trajectory, and physical health. *Significantly low weight* is defined as a weight that is less than minimally normal, or, for children and adolescents, less than that minimally expected.
  2. Intense fear of gaining weight or becoming fat, or persistent behavior that interferes with weight gain, even though at a significantly low weight.
  3. 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.
     - a. Specify: Subtype
       - i. Restricting Type
         1. During the last 3 months, the individual has not engaged in recurrent episodes of binge eating or purging behavior (i.e., self-induced vomiting or the misuse of laxatives, diuretics, or enemas).
       - ii. Binge-Eating/Purging Type
         1. During the last 3 months, the individual has engaged in recurrent episodes of binge eating or purging behavior (i.e., self-induced vomiting or the misuse of laxatives, diuretics, or enemas).
     - b. Specify: Partial Remission or Full Remission
     - c. Specify: Level of Severity
       - i. Based on weight/BMI
         1. Mild: BMI >17 kg/m2
         2. Moderate: BMI 16-16.99 kg/m2
         3. Severe: BMI 15-15.99 kg/m2

4. Extreme: BMI < 15 kg/m2

ii. The level of severity may be increased to reflect clinical symptoms, the degree of functional disability, and the need for supervision

ii. Key Facts

1. Commonly develops during adolescence or young adulthood (Attia and Walsh, 2007)
   a. Peak incidence:
      i. 15-19 yrs for women
      ii. 10-24 yrs for men
2. Lifetime Prevalence: 0.4% for women (Hoek 2006)
3. Female/Male ratio: 10/1
4. 20% have a chronic course; 33% improve with partial or residual features; 46% fully recover (Steinhausen et al., 2009)
5. Weight loss and malnutrition can lead to medical comorbidities and life-threatening conditions (Westmoreland et al., 2016)
6. **Mortality rate (~5%) for anorexia nervosa is higher than that of other psychiatric disorders and the general population (Arcelus et al., 2011)**
   a. Standardized mortality ratio (SMR = ratio of observed to expected deaths)
      i. SMR for AN = 5.86 (about 20% due to suicide).
      ii. In comparison:
         1. SMR for schizophrenia = 2.8 for males; 2.5 for females
         2. SMR for bipolar disorder = 1.9 for males; 2.1 for females
         3. SMR for unipolar depression = 1.5
7. Medical complications from limited nutritional intake and suicide are the most frequent causes of death (Arcelus et al., 2011)
8. Comorbidity with Psychiatric Conditions:
   a. ~ 50% with anxiety disorders
   b. 20-80% with depressive disorders
   c. ~ 25% with substance use disorders

B. Bulimia Nervosa (BN)

i. Diagnostic Criteria

1. Recurrent episodes of binge eating. A binge eating episode is characterized by both of the following:
   a. Eating, in a discrete period of time (e.g., within any 2-hour period), an amount of food that is definitely larger than what most individuals would eat in a similar period of time under similar circumstances.
   b. A sense of lack of control over eating during the episode (e.g., a feeling that one cannot stop eating or control what or how much one is eating).
2. Recurrent inappropriate compensatory behaviors in order to prevent weight gain, such as self-induced vomiting; misuse of laxatives, diuretics, or other medications; fasting; or excessive exercise.
3. The binge eating and inappropriate compensatory behaviors both occur, on average, at least *once a week for 3 months.*
4. Self-evaluation is unduly influenced by body shape and weight
5. The disturbance does not occur exclusively during episodes of AN.

i. Specify: Partial Remission vs Full Remission

ii. Specify: Level of Severity

Based on frequency of inappropriate compensatory behaviors. May be increased to reflect other symptoms or degree of functional disability.

d. Mild: Average 1-3 episodes of inappropriate compensatory behaviors per week
e. Moderate: Average 4-7 episodes of inappropriate compensatory behaviors per week
f. Severe: Average 8-13 episodes of inappropriate compensatory behaviors per week
g. Extreme: Average 14+ episodes of inappropriate compensatory behaviors per week

ii. What constitutes a binge?
1. Objective binge eating:
a. Actual quantity of food
2. Subjective binge eating
a. Personal feeling about quantity of food
b. Don't actually consume an excess quantity of food, but still meet criteria if there is a sense of loss of control
3. Context of binge eating
a. The amount of food consumed is larger than what would be expected for the context in which it occurred (e.g., a quantity of food that might be excessive in a typical meal may be normal during a holiday meal such as Thanksgiving)

iii. Key Facts
1. Lifetime Prevalence: ~1.5 -3%
2. Female/Male Ratio: 10:1
3. Peak incidence: 16-20 years old in women
4. Recovery:
a. Short-term success of treatment: 50-70%
b. High relapse rates à30-85% at 6 months-6 years
c. Standardized mortality ratio (SMR) = 1.9 (~20% due to suicide)
5. Comorbidity with Psychiatric Conditions
a. ~ 80% with anxiety disorder
b. ~ 70% with mood disorder
c. ~ 37% with substance abuse

C. Binge Eating Disorder (BED)

i. Diagnostic Criteria
1. Recurrent episodes of binge eating. A binge eating episode is characterized by both:
a. Eating, in a discrete period of time (e.g., within any 2-hour period), an amount of food that is definitely larger than what most individuals would eat in a similar period of time under similar circumstances.
a. A sense of lack of control over eating during the episode (e.g., a feeling that one cannot stop eating or control what or how much one is eating).
2. The binge-eating episodes are associated with 3 (or more) of the following:
a. Eating much more rapidly than normal
b. Eating until feeling uncomfortably full
c. Eating large amounts of food when not feeling physically hungry
d. Eating alone because of feeling embarrassed by how much one is eating
e. Feeling disgusted with oneself, depressed, or very guilty after overeating
3. Marked distress regarding binge eating is present.
4. The binge eating occurs, on average, at least *once a week for 3 months.*
5. Not part of AN/BN
6. Specify: Partial Remission vs Full Remission
7. Specify: Level of Severity
a. Based on frequency of binges. May be increased to reflect symptoms and degree of functional disability
i. Mild: 1-3 binge eating episodes per week.
ii. Moderate: 4-7 binge-eating episodes per week.
iii. Severe: 8-13 binge-eating episodes per week.
iv. Extreme: 14 or more binge eating episodes per week

ii. Key Facts
1. Lifetime Prevalence:

d. ~3% women
e. ~2% men

6. Age of onset: teens-20s (retrospective data)
7. Strong association with obesity
8. High rates of medical and psychiatric comorbidities

D. Other Feeding and Eating Disorders

<table>
<tr><th></th><th>PICA</th><th>Rumination Disorder</th><th colspan="2">Other Specified Feeding and Eating Disorder</th></tr>
<tr><td rowspan="4">Diagnostic Criteria</td><td rowspan="4">1. Persistent eating of nonnutritive nonfood substances over a period of at least 1 month
2. The eating of these substances in is inappropriate to developmental level
3. Not culturally supported or socially normative
4. If in context of another mental disorder (e.g. intellectual disability, etc.) it is severe enough to warrant clinical attention</td><td rowspan="4">1. Repeated regurgitation (re-chewed, re-swallowed, or spit out) of food >1 month
2. Not attributed to other gastrointestinal issue
3. If in context of another mental disorder (e.g. intellectual disability, etc.) it is severe enough to warrant clinical attention</td><td colspan="2">Symptoms characteristic of a feeding and eating disorder that cause clinically significant distress or impairment but do not meet the full criteria for any of the disorders. The clinician must communicate the reason that the presentation does not meet the criteria for any specific disorder.</td></tr>
<tr><td><u>Atypical anorexia nervosa</u>
All of the criteria for AN are met, but the individual's weight is within or above the normal range.</td><td><u>Purging disorder</u>
Recurrent purging behavior to influence weight or shape in the absence of binge eating</td></tr>
<tr><td><u>Night eating syndrome</u>
Recurrent episodes of night eating, as manifested by eating after awakening from sleep or by excessive food consumption after the evening meal. There is awareness and recall.</td><td>Bulimia nervosa or binge eating disorder of low frequency or limited duration.</td></tr>
</table>

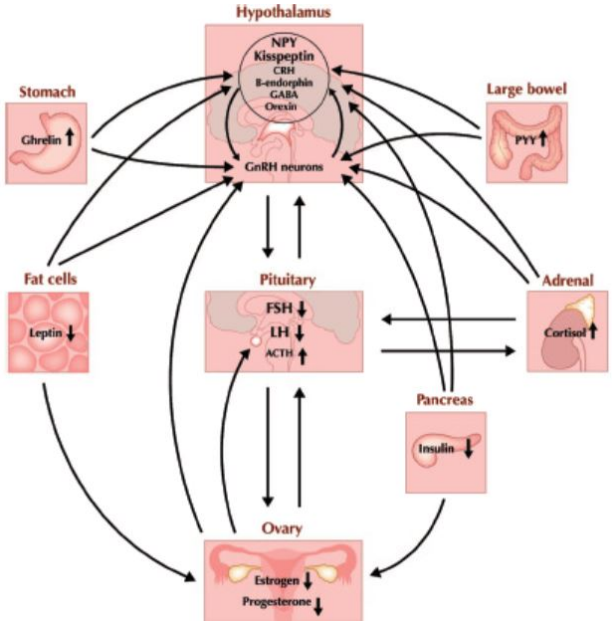
b. Additional diagnoses not included: Avoidant Restrictive Food Intake Disorder and Unspecified Eating Disorder

Eating Disorders and Hormonal Pathways

c. Critical level of stored energy or fat mass is required for initiation and maintenance of regular menstrual function (theory developed in 1960s)
d. Important Hormones in the Hypothalamic-Pituitary-Ovarian (HPO) axis
    i. Leptin = hormone produced in adipose cells important mediator between stored energy balance and HPO axis function
        1. Leptin threshold level permits menstruation
    ii. Ghrelin = metabolic fuel detector produced by cells in stomach
        1. Elevated ghrelin suppresses HPO axis
        2. Amenorrhea despite normal body fat and leptin levels
    iii. Insulin and Peptide YY
        1. Required for normal reproduction function
    iv. CRH and Cortisol

1. ED associated with higher stress response which leads to activated HPA axis

e. Hormones in Women with Eating Disorders
Picture from Andersen, Ryan 2009
   i. Leptin and Insulin LOW
   ii. Ghrelin, Peptide YY and Cortisol HIGH



f. End-Result of Hormonal Cascade in Women with Eating Disorder
   i. Hormonally, this results in inhibition of the normal pulsatile gonadotropin-releasing hormone release, low levels of luteinizing hormone, follicle stimulating hormone, and estradiol, and ovaries characterized by smaller volumes and rare dominant follicles.
   ii. Clinically, this results in dysfunction in ovulation, luteolysis, endometrial development, fertility, menstruation, and bone growth.

B. Presentation and Screening

a. Etiology
   i. Unknown, but likely multifactorial
      1. Biological
      2. Psychological
      3. Familial/Social
      4. Sociocultural

b. How do patients with EDs typically present?
   i. Primary Care Office or Emergency Department
   ii. Gynecologic: amenorrhea and infertility
   iii. GI: pain, constipation, bloating
   iv. Psychological: depression and anxiety
   v. Significant weight loss or failure to gain appropriately
   vi. Other: exertional fatigue, lightheadedness, dizziness, syncope

c. Differential Diagnosis
   i. Endocrine Disorders
      1. Hyper/hypothyroidism
      2. Diabetes mellitus
      3. Hypercortisolism
      4. Adrenal Insufficiency
   ii. Gastrointestinal Disorders
      1. Inflammatory bowel disease
      2. Celiac disease
      3. Infectious diarrhea
   iii. Immunodeficiency or chronic infections (e.g. HIV, TB)
   iv. Psychiatric Disorders
      1. Depression
      2. Obsessive Compulsive Disorder
      3. Anxiety
      4. Substance Abuse
   v. Other Disorders

1. Superior mesenteric artery syndrome, malignancies, CNS tumors (e.g. prolactinoma), pregnancy, excessive exercise or energy imbalance, rheumatologic disease, Wilson's disease, Porphyria

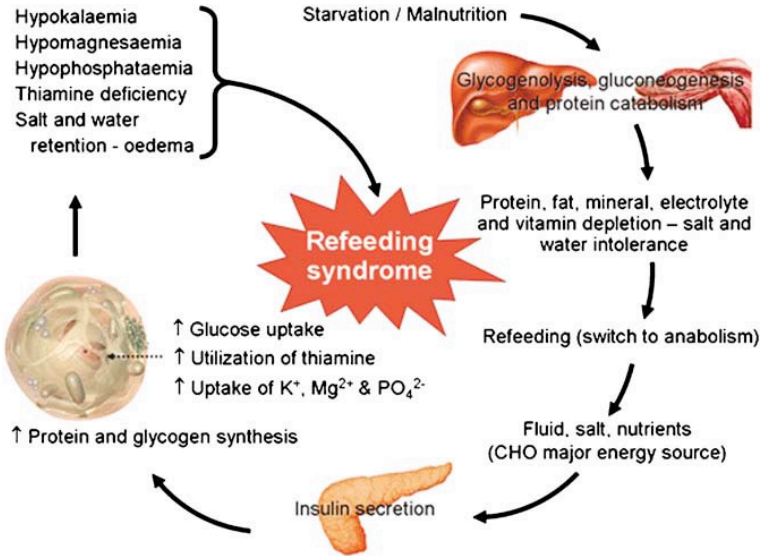
d. Screening Questions (SCOFF)
   i. **If the answer is yes to ≥ 2 consider referral for Eating Disorder evaluation**
      1. Do you make yourself **Sick** (vomit) because you feel uncomfortably full?
      2. Do you worry that you have lost **Control** over how much you eat?
      3. Have you recently lost more than **One** stone (15 lbs) or more in a three month period?
      4. Do you believe yourself to be **Fat** when others say you are too thin?
      5. Would you say that **Food** dominates your life?
   ii. Please see Module 4 for more information on screening for eating disorders <link>

C. Medical Complications

a. Initial Medical Workup
   i. Height and Weight in a gown, after voiding
   ii. Physical Exam findings:
      1. Emaciation
      2. Hypotension/Bradycardia
      3. Hypothermia
      4. Lanugo
      5. Peripheral edema
      6. Hypertrophy of salivary gland
      7. Dental enamel erosion
      8. Calluses of dorsal surface of hand
   iii. Basic Metabolic Panel, calcium, magnesium, phosphorus
   iv. CBC with platelets and differential
   v. Thyroid function tests
   vi. Liver function tests
   vii. Lipids
   viii. Pregnancy test
   ix. EKG
   x. Consider if indicated: Urine Drug Screen, Celiac panel, ESR, and CRP

b. AN
   i. Cardiopulmonary
      1. Severe malnutrition leads to decreased cardiac muscle mass.
      2. IVF too rapidly can lead to cardiac overload and pulmonary edema.
      3. Risk for serious dysrhythmias, which may cause sudden cardiac death
   ii. Gastrointestinal
      1. Food restriction and weight loss leads to delayed gastric emptying
      2. Abdominal pain and distention can be due to: gastroparesis, gastric distention, gastroesophageal reflux, constipation, superior mesenteric artery syndrome.
   iii. Skeletal
      1. Stress of starvation alters hypothalamic-pituitary axis so predisposed to osteoporosis and bony injuries
   iv. Fluid/Electrolyte
      1. *Refeeding syndrome*: cardiopulmonary collapse in early stages of nutritional replenishment

Picture from Stanga et al., 2008



a. Introduce glucose in the diet → insulin secretion → uptake of glucose, K, Mg, and Phos into cell.
   i. Phos used for protein and glycogen synthesis and is depleted → hypophosphatemia → ATP depletion → inability of heart and diaphragm to contract.
   ii. hypoMg and hypoK → cardiac arrhythmias and skeletal mm weakness
b. Physical signs of refeeding syndrome:
   i. Increase in HR
   ii. Lower extremity edema
c. Patients at risk of refeeding syndrome have ≥ 1 of below:
   i. **BMI less than 16** kg/m2
   ii. unintentional weight loss greater than 15% within the last 3–6 months
   iii. little or no nutritional intake for more than **10 days**
   iv. **low** levels of potassium, phosphate or magnesium prior to feeding.
   v. **OR** have ≥ 2 of below:
      1. **BMI less than 18.5 kg/m2**
      2. unintentional weight loss **greater than 10%** within the last 3–6 months
      3. little or no nutritional intake for more than **5 days**
      4. a history of alcohol abuse or drugs including insulin, chemotherapy, antacids or diuretics.

2. *Hypoglycemia:* don't have hepatic stores to replenish when uptake of glucose occurs. Can lead to risk for seizures.

c. BN
   i. Cardiac
      1. Arrhythmias due to hypokalemia
      2. Cardiomyopathy with ipecac abuse (cardiac toxin) → irreversible cardiomyopathy with symptoms of congestive heart failure, ventricular arrhythmias, and sudden death
   ii. Gastrointestinal
      1. Self-induced vomiting → pain or difficulty with swallowing, hoarseness, dental problems, swelling of salivary glands, esophageal problems (irritation, erosion, or rupture), reflux
      2. Laxative abuse → diarrhea and abdominal cramping, severe rebound constipation
   iii. Fluids/Electrolytes:
      1. Dehydration
      2. Edema
      3. Metabolic alkalosis
      4. Hypochloremia
      5. **Hypokalemia** (seen in ~5% of patients)
         a. Can replenish but will drop again when they resume purging.

D. Treatment Modalities

a. Common Components of Effective ED Interventions

i. Psycho-education and psychotherapy
    1. True mainstay → No medication has been shown to be equivalent to psychotherapy in the treatment of eating disorders
ii. Behavioral interventions
    1. Weight checks
    2. Self-monitoring of intake and eating disorder behaviors (e.g., binge eating, purging, exercise) with daily logs
iii. For low weight, emphasis on weight restoration
    1. 2,000-3,500 kcal/day to facilitate weight gain
        a. 2-3 lb/wk inpatient or 0.5-1 lb/wk outpatient

b. Maintaining Recovery
    i. Recovery **is** possible with effective specialist treatment (e.g., CBT, IPT)
        1. At the end of treatment, it is important to collaborate with patients on plans for relapse prevention and continued work on treatment goals
        2. It is helpful to bear in mind warning signs and symptoms that indicate need for action, such as:
            a. High stress interpersonal situations
            b. Low mood, negative affect
            c. Role transitions, stressful life events (including pregnancy)
            d. Over-concern with shape and/or weight

c. Treatment for AN
    i. Weight Restoration
        1. Cornerstone of treatment for low weight patients
        2. Used in combination with all psychotherapy
    ii. Psychotherapy
        1. Family-Based Treatment (FBT): "Maudsley Model"
            a. 10-20 Sessions total over 6-12 month period
            b. Principles
                i. Adolescent is part of a family system
                ii. Adolescent with AN is regressed
                iii. Family must focus on refeeding to free adolescent from eating disorder
            c. Goal is to mobilize and empower parents to refeed their child
        2. Adolescent-Focused Therapy
            a. Individual treatment for adolescents
            b. Useful if unable to use family based approach
            c. Strengthens their sense of self to focus on their own ability to change their eating disorder behaviors
        3. Cognitive Behavioral Therapy (CBT)– for adults
            a. Addresses dysfunctional thoughts/problematic behaviors that maintain disorder
    iii. Pharmacotherapy
        1. Not primary treatment
        2. Possibly helpful in comorbid conditions
        3. Mixed data with antipsychotics
        4. No evidence for appetite stimulants
        5. Appetite reducers such as stimulants should be avoided

d. Treatment for BN
    i. Psychotherapy
        1. CBT (gold standard in adults)
        2. FBT

3. Interpersonal Therapy (IPT)
4. Dialectical Behavioral Therapy (DBT)
5. Self-help

ii. Nutritional counseling
1. Possibly helpful (but not supported in the literature)

iii. Pharmacotherapy
1. Fluoxetine = FDA approved
2. All SSRIs used

e. Treatment for BED

i. Psychotherapy
1. CBT (gold standard in adults)
2. Interpersonal Therapy (IPT)
3. Self-help

ii. Pharmacotherapy
1. Lisdexamfetamine dimesylate – FDA approved

E. Levels of Care

LEVEL OF CARE	TYPICAL CLINICAL FORMAT	PATIENT CRITERIA
Inpatient*	Inpatient psychiatric hospitalization (often locked unit) 24/7 nursing and support staff All meals and snacks supervised Includes: • Nutritional consultations • Medical specialties for consultation • 24/7 supervision with close observation (including around mealtimes and in bathroom) • Group therapy • Psychiatric management by physician daily	• Heart rate <40 bpm • Blood pressure <90/60 mm Hg • Symptomatic hypoglycemia • Potassium <3 mmol per liter • Temperature <36.1°C (97.0°F) • Dehydration • Cardiovascular abnormalities other than bradycardia • Weight <75 percent of the expected weight • Any rapid weight loss of several kilograms within a week • Lack of improvement or rapid worsening while in outpatient treatment
Residential	Daily programming (individual, group, and family treatment) Housing provided so patients can stay overnight with some level of supervision (less than inpatient psychiatric hospitalization, not locked unit) Can be a step down from inpatient or treatment step up from outpatient	Intended for patients who: • Require close monitoring and supervised meals in a structured and supervised setting for most of the day (example: someone who can control behaviors while in PHP/IOP program, but engages in behavior when he/she goes home unsupervised) • Need greater length of time in treatment than provided on inpatient unit • Are medically stable (typically does not have level of medical care that can be provided during inpatient admission)
Partial Hospitalization Program	5 days a week, 6-8 hours per day 2 supervised meals and one snack daily Includes: • Nutritional counseling	Intended for patients who: • Require close monitoring and supervised meals • Have failed to benefit from less intensive care

	• Close medical monitoring • Group therapy • Individual therapy (2-3 hours/week) • Psychiatric management by physician weekly	• Are acutely ill, but do not require inpatient hospitalization • Need step-down care after inpatient hospitalization
Intensive Outpatient Program	3 days a week, 3 hours per day 1 supervised meal Includes: • Nutritional counseling • Close medical monitoring • Group therapy • Individual therapy (1-2 hours/week) • Psychiatric management by physician every 1-2 weeks	Intended for patients who: • Would benefit from the structure of a program but does not require partial level of care • Would benefit from support in continued recovery after returning to work or school
Outpatient	Individual therapy and/or group work Frequency determined by clinician and patient (from weekly to monthly) Often in conjunction with outpatient dietician, primary care team	Intended for patients who: • Have overall stable eating disorder behaviors with little or no medical complications

* Goals for inpatient treatment
- To weight restore someone at critically low weight
- To stabilize and treat medical complications
- To interrupt binge-purge cycle, vomiting, or laxative abuse posing medical risks
- To manage acute issue with comorbid psychiatric disorder

F. Challenges and Wording
   a. Managing patients with severe and enduring ED
      i. Referral to a higher level of care may not be indicated despite serious symptoms
         1. Intensive treatment focuses on amelioration of eating disorder symptoms, which might not be an appropriate goal at this stage of illness
      ii. Individuals with severe eating disorders may remain symptomatic at discharge
         1. External limitations on length of treatment
         2. Ambivalence about change
         3. Inability to address the complex functions of disordered eating symptoms and their associations with comorbid psychopathology
   b. Question of involuntary treatment for ED
      i. Questions to ask:
         1. Does the patient have the medical decision-making capacity to refuse treatment?
         2. Will psychiatric hospitalization help the patient?
         3. How can you balance patient autonomy with the risks related to their illness?
   c. What to say to patients with an ED
      i. As certain phrases and wordings can be especially triggering for those with an eating disorder, use of patient-centric language that will be most helpful for the recovery process is imperative
      ii. Health: Physical and Mental
         1. "Food is your medicine"
         2. "Your health is non-negotiable"
         3. "Your attention/concentration seems better today"
         4. "Your body needs energy to rebuild”

iii. Nutrition stabilization and weight gain
    1. Avoid discussing specific weights
    2. "Your treatment progress is on target"
    3. Provide encouragement to eat 100%
iv. Acknowledge/validate struggle while still encouraging change
    1. Egosyntonic nature of the illness → patients aren't trying to be "difficult"
    2. Recognize the desperation that drives symptoms
    3. Acknowledge that change is hard
    4. "Eating is simple, but not easy. I'm here to help you through this and to help you eat 100%."
    5. "Refeeding is painful AND the only way to get back to your life is by doing what you need to do to get yourself healthier."
v. What to *avoid* saying to patients with an ED
    1. Negotiating with the eating disorder:
        a. Example: Adjusting target weight based on their anxiety
    2. Focusing on body shape/size/appearance:
        a. "You look good/healthy."
        b. "You're gaining weight really well."
        c. "You look like you're normal (healthy) weight."
    3. Drawing attention to the amount or type of food they are eating (unless it is medically concerning)
        a. "You should eat a cheeseburger!"
    4. Discussing your own weight, eating habits, or exercise routines
    5. Minimizing how difficult it is to eat
        a. "Just eat, what's the big deal?"

Reference

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