FEEDING AND EATING DISORDERS

Anorexia Nervosa

AN

DSM-5-TR 307.1 | ICD-10-CM F50.01, F50.02

Energy restriction producing significantly low weight, driven by intense fear of weight gain and disturbed body image.

LIFETIME PREVALENCE	TYPICAL ONSET	SEX RATIO	MORTALITY
~0.8-1.7% (women)	Ages 14-20; bimodal peaks	~10:1 female:male	SMR ~5-6; ~5% per decade

CLINICAL PICTURE

- Presents emaciated yet describing the self as fat; family usually initiates the visit while the patient denies illness and negotiates every gram.
- Rigid food rules, calorie counting, ritualized eating, cutting food into tiny pieces, and cooking elaborate meals for others without eating.
- Compulsive exercise, standing rather than sitting, layered clothing that hides weight loss and blunts cold intolerance, and repeated body checking.
- Exam shows bradycardia, hypotension, orthostasis, lanugo, dry skin, alopecia, cold mottled extremities, and amenorrhea or loss of libido.
- Starvation-driven cognitive narrowing, irritability, social withdrawal, insomnia and food preoccupation mimic depression and obsessive-compulsive disorder.
- Binge-purge subtype adds self-induced vomiting, laxative or diuretic misuse, parotid swelling, dental erosion and Russell sign on the knuckles.

DIAGNOSTIC CRITERIA AT A GLANCE

- Three-part structure: energy restriction producing significantly low weight for age, sex and trajectory, plus fear of weight gain and body image disturbance.
- Fear of fatness may be shown behaviorally as persistent interference with weight gain rather than voiced verbally, which is common in children.
- Subtypes are assigned over the last 3 months as restricting or binge-eating/purging, and crossover between subtypes is common across the illness course.
- Adult severity is anchored to BMI: mild at 17 or above, moderate 16 to 16.99, severe 15 to 15.99, extreme below 15; children use BMI percentile.
- Amenorrhea was dropped as a criterion in DSM-5, and partial versus full remission specifiers track weight restoration separately from cognitive symptoms.

NEUROBIOLOGY & PHYSIOLOGY

- Twin heritability is roughly 50-60%; a **2019 genome-wide study** found eight risk loci plus metabolic correlations, reframing AN as metabo-psychiatric.
- Altered insula and anterior cingulate processing distorts interoception and taste reward, while dorsal striatal habit circuitry sustains restriction.
- Elevated **5-HT1A** and reduced **5-HT2A** binding with high CSF 5-HIAA after weight restoration suggests a trait anxious serotonergic system.
- Starvation raises cortisol and ghrelin while lowering leptin, triiodothyronine and gonadotropins, producing functional hypothalamic amenorrhea.
- Medical sequelae include sinus bradycardia, prolonged QTc, hypokalemia, osteopenia in over half of patients, and pseudoatrophy on brain MRI.
- Refeeding syndrome from intracellular phosphate shift causes hypophosphatemia, hypokalemia and hypomagnesemia with cardiac failure in the first week.

PSYCHOLOGICAL MECHANISMS

- Weight and shape become the dominant basis of self-worth, and restriction delivers immediate relief and a sense of control that negatively reinforces it.
- Premorbid perfectionism, harm avoidance, cognitive rigidity and weak central coherence persist after recovery and predict poorer long-term outcome.
- The ego-syntonic quality means the disorder is experienced as identity and achievement, which flattens motivation and drives treatment ambivalence.
- Family accommodation, high expressed emotion and criticism around meals maintain the illness, and **FBT** deliberately targets this interpersonal loop.
- Alexithymia and social anxiety limit affect tolerance, so restriction functions as an emotion regulation strategy rather than as a diet.

DIFFERENTIAL & COMORBIDITY

- Rule out malignancy, inflammatory bowel disease, celiac disease, hyperthyroidism, type 1 diabetes and adrenal insufficiency before attributing weight loss to AN.
- Distinguish from **ARFID**, which lacks body image disturbance, from bulimia nervosa at normal weight, and from body dysmorphic disorder with non-weight focus.
- Comorbidity is the rule: anxiety disorders in up to 65%, major depression near 40%, OCD in 15-20%, and substance use mainly in the binge-purge subtype.
- Crude mortality is about 5% per decade with a standardized mortality ratio near 5-6, the highest in psychiatry, and roughly one in five deaths is suicide.
- Obtain electrolytes, phosphate, ECG for QTc, and bone density after 6-12 months of amenorrhea; screen for insulin omission in type 1 diabetes.

Treatment EVIDENCE-BASED MANAGEMENT

PHARMACOLOGIC

- No medication carries FDA approval for anorexia nervosa; nutritional rehabilitation and weight restoration remain the primary, non-negotiable intervention.
- **Olanzapine 2.5-10 mg/day** modestly improves weight gain in adults without changing obsessional thinking; monitor metabolic panel, QTc and sedation.
- **Fluoxetine 20-60 mg/day** does not prevent relapse in underweight patients, so reserve SSRIs for comorbid depression or OCD after weight restoration.
- Avoid bupropion because of seizure risk with purging, and use caution with any QTc-prolonging agent given bradycardia and electrolyte derangement.
- Supplement vitamin D and calcium, check thiamine and phosphate before refeeding, and reserve bisphosphonates for selected adults rather than adolescents.

PSYCHOTHERAPY

- **Family-based treatment** is first-line for adolescents, delivering about 20 sessions over 12 months with roughly 40-50% full remission at one year.
- **CBT-E** runs 20 sessions over 20 weeks for non-underweight patients and extends to 40 sessions over 40 weeks when BMI falls below 17.5.
- **MANTRA** and specialist supportive clinical management are NICE-endorsed adult options with comparable outcomes; adult effects remain modest overall.
- Weekly open weighing, structured meal planning and behavioral contracting anchor treatment, while motivational work supports but never replaces refeeding.
- Adolescent-focused individual therapy is a reasonable alternative when family treatment is contraindicated by abuse or severe parental psychopathology.

ADJUNCT & SUPPORTIVE

- Escalate level of care on vital signs: heart rate below 50, systolic BP below 90, temperature below 36 C, or weight below 75% of expected body weight.
- Contemporary inpatient refeeding starts higher at roughly 1500-2000 kcal/day with daily phosphate, potassium and magnesium checks for 5-7 days.
- Partial hospitalization and intensive outpatient programs with supervised meals bridge the step-down and lower relapse rates after discharge.
- Track progress with the **EDE-Q**, EAT-26 screening, growth charts, DEXA and serial ECG rather than relying on patient self-report of intake.
- Coordinate care with a dietitian, pediatrician or internist, school personnel, and dentistry for enamel erosion in purging subtype patients.

CLINICAL PEARLS

- Weight restoration precedes cognitive recovery; do not judge therapy failure in a starved brain.
- Check phosphate daily for the first refeeding week: hypophosphatemia kills, not the calories.
- Highest mortality of any psychiatric illness, and one in five deaths is suicide, not starvation.

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NOTE

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