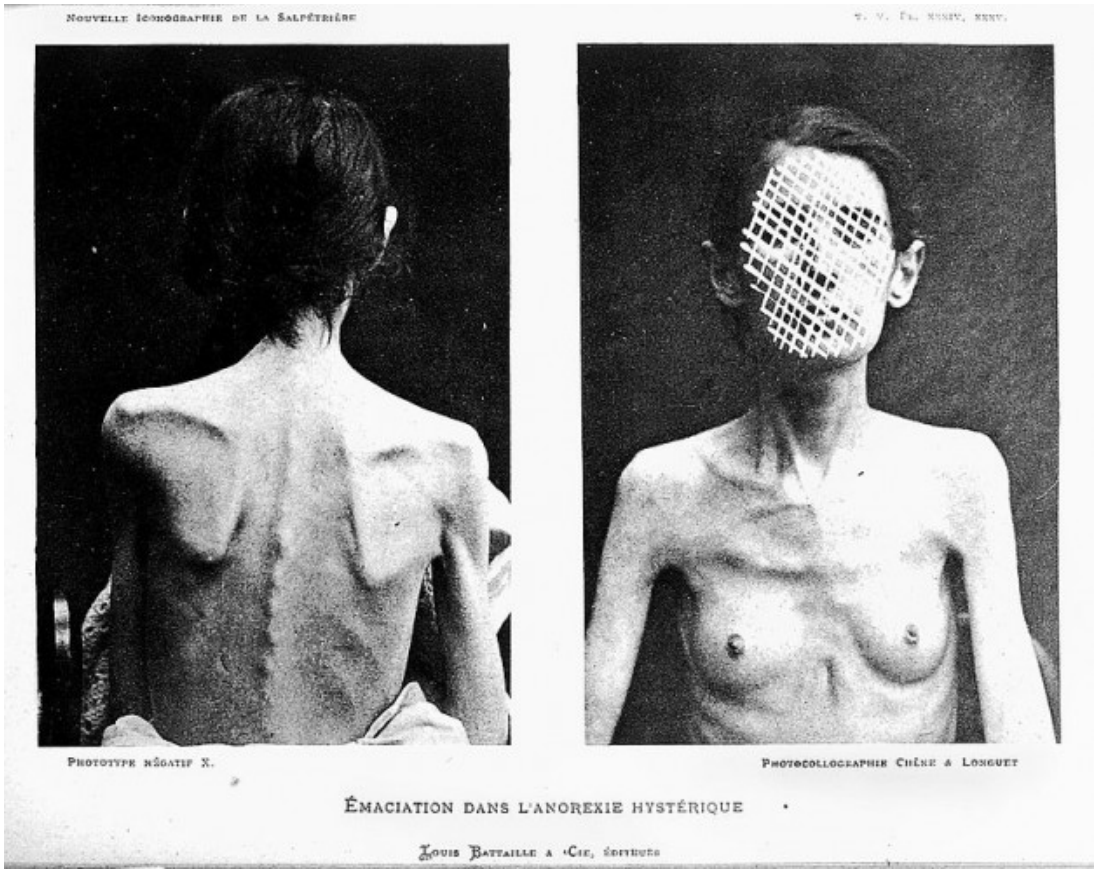
Anorexia, Bulimia, Binge Eating: An Overview of Eating Disorders

See online here

Eating disorders like anorexia nervosa, bulimia nervosa, and binge eating disorder are common diseases. Theoretical knowledge of the pathogenesis and symptoms of these diseases, which mostly affect young women, is crucial for correct diagnosis and treatment. This article will help you to correctly diagnose the different eating disorders in both the medical board exam and clinical practice.



Definitions of Eating Disorders

Eating disorder: A chronic psychiatric condition characterized by a persistent disturbance of eating behavior that has a significant negative impact on physical health and/or psychosocial functioning.

Anorexia nervosa: An eating disorder characterized by **self-imposed starvation** and inappropriate dietary habits due to a **morbid fear of weight gain** and disturbed perception of body shape and weight. These patients are often emaciated and their **body weight often drops below 85%** of ideal body weight with associated physiological and

psychological complications.

Bulimia nervosa: An eating disorder characterized by recurrent episodes of **binge eating** accompanied by inappropriate **compensatory behavior** to counteract the effect of binge eating.

Binge eating disorder: An eating disorder characterized by recurrent episodes of binge eating **without** inappropriate compensatory behavior.

Epidemiology of Eating Disorders

Eating disorders have a higher prevalence in the younger population, mostly affecting girls and women, and occur more frequently among individuals in higher social classes and in developed countries.

Anorexia nervosa is common in young females aged 15–25 years and has a prevalence of about 1%. Ballet dancers, athletes, and models are frequently affected.

Bulimia nervosa has a prevalence of 2%–4% in the young adult population. Females aged 18 to 35 years are most commonly affected.

Binge eating disorder has a prevalence of 2%–5% in the general population. About half of patients with this disorder are overweight, and one-third of all cases are males.

Etiology of Eating Disorders

The etiology of eating disorders cannot be traced back to a single event but rather consists of a complex interaction between biological, psychological, and social factors. Studies of twins show that genetic factors also play a role in their pathogenesis.

All eating disorders have in common a disturbed perception of body shape and weight. To avoid weight gain and to reduce weight, some individuals may use extreme measures such as fasting, physical exertion, and laxatives, which can cause serious medical complications.

Individuals with eating disorders often have a distorted body image and low self-esteem, and they also have a higher prevalence of other mental health disorders, such as obsessive-compulsive disorder, affective disorders, or impulse-control disorders.

Anorexia Nervosa

Anorexia literally means “**loss of appetite,”** which, strictly speaking, does not apply to this disorder. Patients with anorexia nervosa experience hunger sensations but deny and try to suppress them due to fear of gaining weight.

The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) defines the following criteria for the diagnosis of anorexia nervosa:

- Restricted dietary habits resulting in significantly low body weight
- Intense fear of gaining weight
- Disturbance in perceived body weight and body shape

Classification of anorexia nervosa

Anorexia nervosa is classified into the following two types depending upon the dietary behavior:

- **Restrictive type:** characterized by excessive starvation
- **Purging type:** characterized by the use of drugs (e.g., laxatives, diuretics), induced vomiting, and excessive exercise as a means to reduce weight

Clinical features of anorexia nervosa

Picture: “Two images of an anorexic female patient in a French medical journal Nouvelle Iconographie de la Salpêtrière vol 13, published in 1900.” by Georges Gasne. License: gemeinfrei

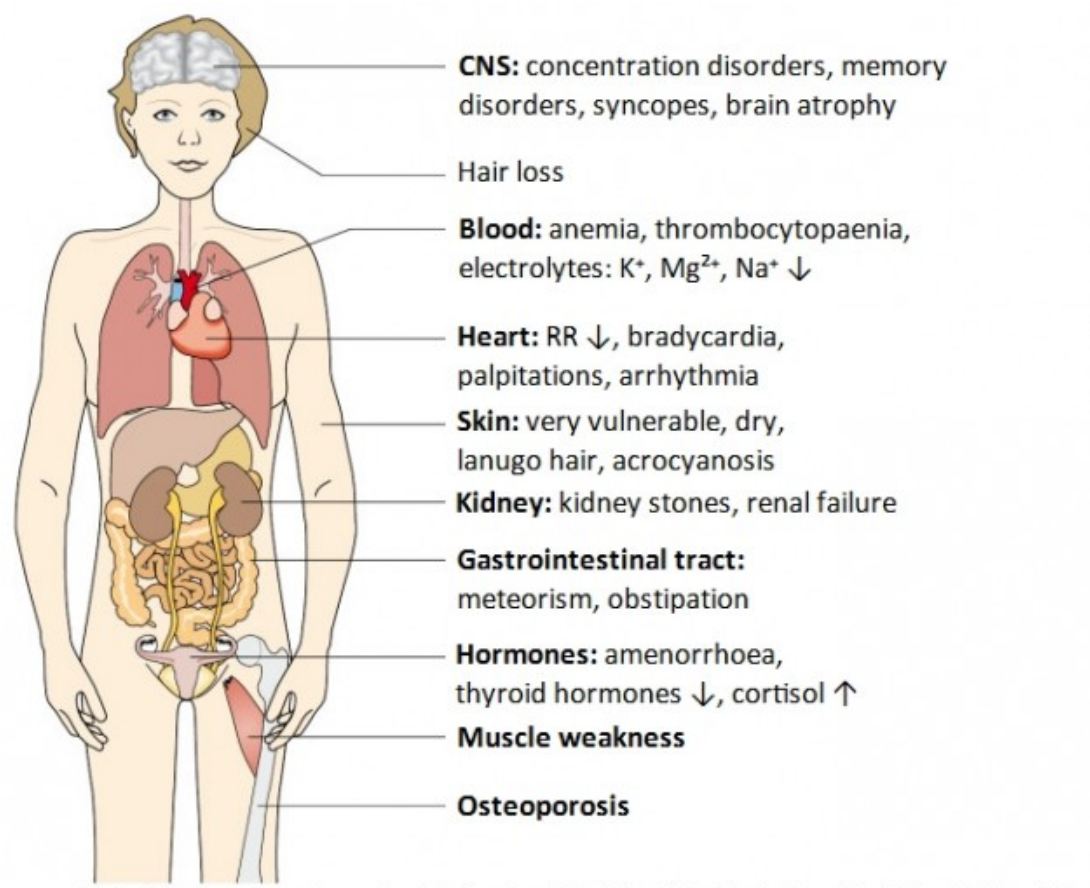
The characteristic symptoms of anorexia nervosa are the **excessive fear of weight gain** along with a **body image disturbance.** These patients consider themselves too fat despite being underweight and often find their own body displeasing. These symptoms hamper their daily activities, and they are preoccupied with weight issues. Additionally, these patients lack **disease awareness;** therefore, compliance is minimal or absent, especially at the beginning of treatment.

On systemic review, the patients may also have the following symptoms:

- Difficulty in concentration and decision-making
- Mental health concerns (for example, anxiety, depression, social withdrawal)
- Amenorrhea
- Headaches
- Dizziness
- Lethargy

On physical examination, the patients are **markedly underweight** and have a **body mass index (BMI) of less than 17.5 kg/m^2**. Other signs that may be present include the following:

- Hypotension
- Bradycardia
- Hypothermia
- Dry skin
- Lanugo body hair/Thin hair
- Breasts atrophy
- Swelling of the salivary glands
- Peripheral edema



Effects of Anorexia nervosa on the organism, taken from: Leucht, Förstl: Kurzlehrbuch Psychatrie und Psychotherapie, Thieme 2012 (see Lecturio post on Anorexia nervosa)

Treatment of anorexia

The treatment of anorexia nervosa consists of a combination of **psychotherapy and pharmacotherapy.**

Anorexia nervosa has widespread effects on all of the body systems and can be life-threatening. In most cases, hospitalization is advisable to remove patients from the environment that promotes the disorder. During the hospital stay, the goal of therapy is for the patient to gain approximately 0.5–1 kg of weight per week. Initially, force-feeding with parenteral electrolyte solutions and a nasogastric tube may be necessary. The electrolytes are regularly checked as **refeeding syndrome** may occur.

The **refeeding syndrome** is a constellation of metabolic disturbances that may occur due to refeeding of malnourished patients who are persistently starved, as in the case of anorexia nervosa. It results from sudden shifting of fluid and electrolytes leading to marked electrolyte disturbances (with the hallmark feature being **hypophosphatemia**), seizures, and delirium, and it can be fatal.

In patients with depression, short-term administration of **antidepressants** or **neuroleptics** is reasonable. Due to low self-awareness of patients with this disease, it is difficult to achieve compliance, and therapy can span a period of several months to years.

Bulimia Nervosa

The DSM-5 defines the following criteria for the diagnosis of bulimia nervosa:

- Recurrent episodic binge eating
- Recurrent inappropriate compensatory behaviors to prevent weight gain, such as the use of laxatives and diuretics, self-induced vomiting, fasting, or excessive exercise
- Excessive emphasis on body shape or weight

Clinical features of bulimia nervosa

The characteristic symptoms of bulimia nervosa are recurring ravenous hunger attacks accompanied by the **intake of large amounts of high-calorie foods.** Following these binge-eating episodes, feelings of guilt and shame arise that result in **counter-regulatory** measures (self-induced vomiting, laxatives, diuretics, fasting, excessive exercise, and thyroid gland preparation) to avoid weight gain.

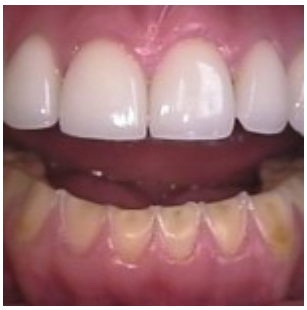
In contrast to patients with anorexia nervosa, patients with bulimia mostly are of **normal weight** (sometimes slightly overweight), and this is sometimes the only differentiating point between them. They do not suffer from a body image disorder; however, they exhibit high **psychological strain**. They are often **conscious** of their disturbed eating behavior and are ashamed of it, and they use methods to hide it.

More than two-thirds of the patients show psychological comorbidities, such as **depression, anxiety,** and **suicidal inclinations**.

The physical examination may reveal the following signs:

- **Dental caries** caused by repetitive self-induced vomiting
- Swollen **parotid glands**
- Due to self-inflicted vomiting, **lesions** on the back of the hand can be found in some cases **(“Russell’s sign”)**.

Picture: “Russell’s Sign on the knuckles of the index and ring fingers.” by Kyukyusha. License: Public Domain



Picture: “Oral Manifestation of Bulimia.” by Jeffrey Dorfman. License: CC BY-SA 3.0

Treatment of bulimia

Like anorexia nervosa, the treatment of bulimia consists of a combination of psychotherapy and pharmacotherapy.

Psychotherapy—and more precisely, **cognitive behavioral therapy**—is the first choice for therapy. The goal is to normalize the patient's eating behavior and avoid the destructive binge-eating attacks. Furthermore, self-esteem must be strengthened, while the fear of gaining weight must be decreased.

With regard to **pharmacotherapy,** tricyclic antidepressants or selective serotonin reuptake inhibitors (e.g., fluoxetine) are suitable choices. Monoamine oxidase inhibitors are useful for treating coexisting depressive symptoms and for relapse prophylaxis.

If outpatient therapy fails, or if self-injuring or suicidal behavior is present, hospitalization may be necessary.

Severe cases	**Interdisciplinary team**	**Medical stabilization**
Admission to hospital and slow regimented feeding advance	Primary care provider, nutritionist, psychologist, psychiatrist	Hypovolemia, cardiac dysfunction, electrolyte abnormalities
Nutritional rehabilitation	**Behavioral intervention**	**Medications**
Repletion of nutritional stores	Psychotherapy and support groups	To treat comorbid psychiatric conditions

Binge Eating Disorder

The DSM-5 defines the following criteria for the diagnosis of binge eating disorder:

- Recurrent episodes of binge eating
- Marked distress regarding binge eating
- **Absence** of inappropriate compensatory behavior (unlike bulimia nervosa)

Clinical features of binge eating disorder

The characteristic symptoms of binge eating disorder are recurring cravings accompanied by the intake of large amounts of high-calorie foods. Following these binge eating episodes, patients feel guilt and shame. Unlike bulimia, counter-regulatory measures are **absent** following binge eating episodes.

In contrast to anorexia and bulimia, patients with binge eating disorder are mostly **overweight** or **obese.** One-third of all cases are men.

Treatment of binge eating disorder

It is important to treat not only the patients' dietary symptoms but also the underlying psychiatric issues (depression, anxiety, low self-esteem) and comorbidities (obesity, hypertension, etc.).

Similar to the other eating disorders, treatment is attempted with the combination of **psychotherapy** via cognitive behavior therapy, and **medications** (SSRI, TCA, etc.).

Overview of the differences between eating disorders

Anorexia Nervosa	Bulimia Nervosa	Binge Eating Disorder
Underweight (decreasing)	Normal weight (fluctuating)	Overweight (increasing)
Goal: weight loss	Goal: no weight gain	Low fear of weight gain
Control compulsion	Control loss	Control loss
No psychological strain	High psychological strain	Psychological strain
Denial	Feelings of shame and guilt	Feelings of shame and guilt
Bad compliance	Good compliance	Intermediate compliance

Review Questions

The correct answers can be found below the references.

1. Bulimia nervosa mostly occurs in women between the ages of 18 and 35 years. Which symptom is not typical for this disease?

A. The high psychological strain of the patients.
B. Feeling of control loss.
C. Feelings of shame and guilt due to disturbed eating behavior.
D. Bad compliance in the therapy of the disease.
E. Repeated episodes of eating attacks with subsequent counter-regulatory measures.

2. A 17-year-old girl visits her family doctor due to concentration problems and decreased performance in school. On physical examination, she has a height of 1.60 m and weighs 44 kg. When asked, the patient states that she feels well but would like to become productive in school again. Which disease matches her symptoms?

A. Binge eating disorder
B. Anorexia nervosa
C. Diabetes mellitus
D. Hypothyroidism
E. Bulimia nervosa

3. Anorexia is often accompanied by medical complications. Which of the following conditions is not typically related to anorexia nervosa?

A. Alopecia
B. Amenorrhea
C. Hypokalemia
D. Osteoporosis
E. Decreased cortisol levels

References

Bliss, E. L., & Branch, C. H. (1960). *Anorexia nervosa: Its history, psychology, and biology*. New York: Hoeber.

Newman, M. M. (1993). The Hospital Treatment of Eating Disorders. *The Eating Disorders*, 185-195. doi:10.1007/978-1-4613-8300-0_16.

Palmer, B. (2005). Concepts of Eating Disorders. *Handbook of Eating Disorders,*1-10. doi:10.1002/0470013443.ch1.

The Pathophysiology of Anorexia Nervosa and Bulimia Nervosa. (1986). *Annual Review of Nutrition*, *6*(1), 299-316. doi:10.1146/annurev.nutr.6.1.299.

Correct answers: 1D, 2B, 3E

Notes