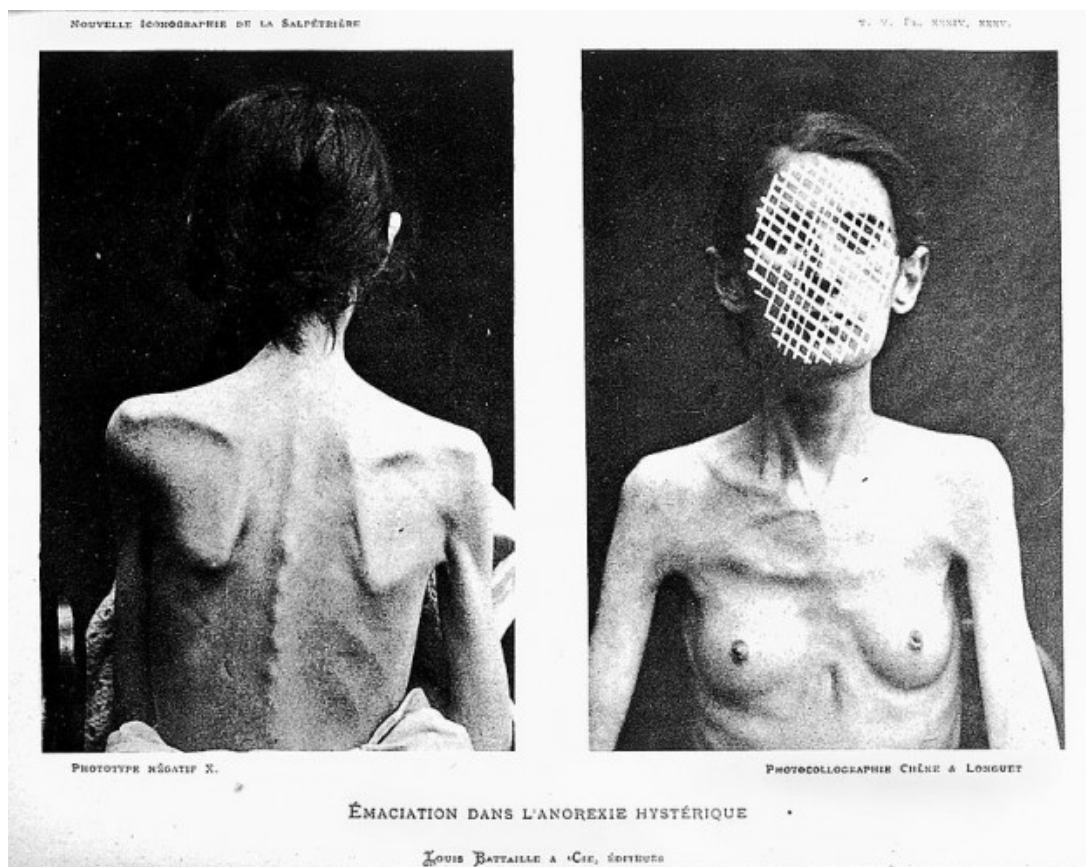


## Anorexia, Bulimia, Binge-Eating: An Overview of Eating Disorders

[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

The eating disorders have a higher prevalence in the younger population, mostly affecting the female gender, and are far more frequent 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, people use measures like fasting, physical strain, and laxatives, which more usually than not result in consequential organic diseases.

These patients often have disturbed self-image and self-esteem, and they also have a higher prevalence of other disorders such as obsessive-compulsive disorders, affective disorders, or impulse-control disorders.

## Anorexia Nervosa

**Anorexia** literally means '**loss of appetite**', which, strictly speaking, does not apply to this disease. The patients experience hunger sensations but deny them 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 gain weight
- Perceived disturbance in body weight and 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 (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.  
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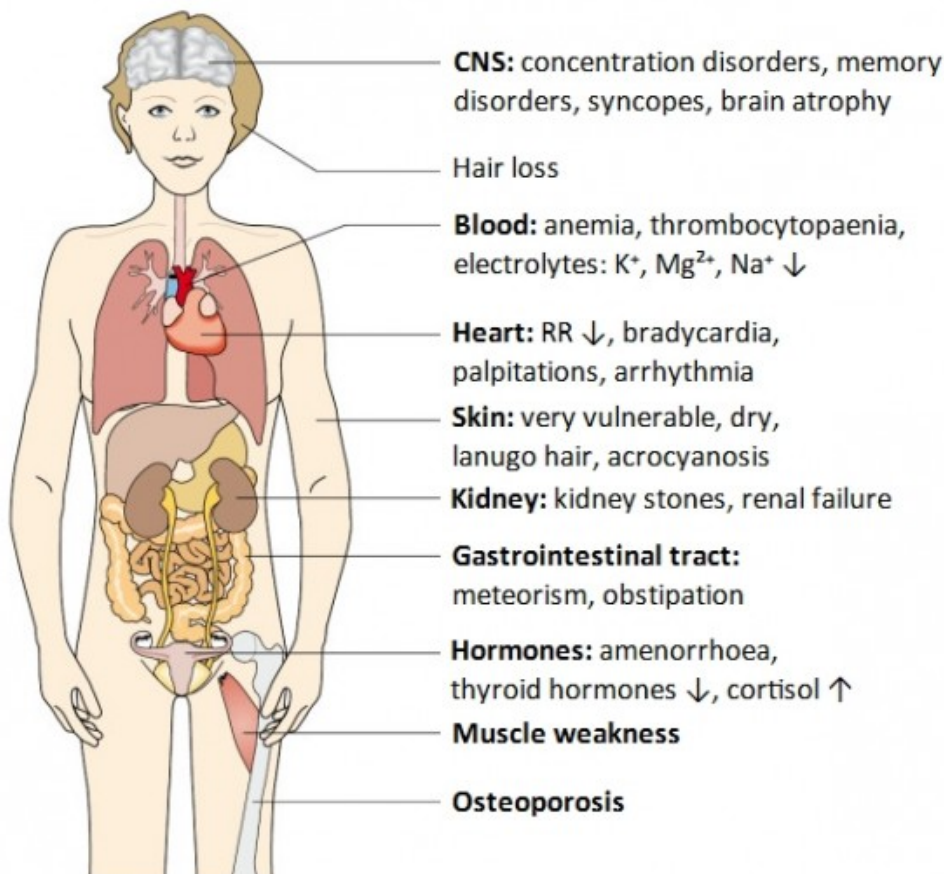
The characteristic symptoms of anorexia nervosa are the **excessive fear of weight gain** along with a **body image disturbance**. These patients consider themselves too fat despite being underweight and often find their own body displeasing. These symptoms hamper their daily activities, and they are 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 additionally 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<sup>2</sup>**. The following additional signs may be present on the examination:

- 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 Psychiatrie 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 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 the low disease awareness of the patients, therapy often is very difficult and spans over 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, e.g., **depression, anxiety, and suicidal inclinations**.

The physical examination may include 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.

Concerning **pharmacotherapy**, tricyclic antidepressants, or selective serotonin reuptake inhibitors (e.g., fluoxetine) are suitable, while monoamine oxidase inhibitors are useful for treating coexisting depressive symptoms and for relapse prophylaxis.

Should outpatient therapy fail, or in the case of self-injuring behavior or increased risk of suicidal tendencies, hospitalization may be necessary.

<b>Severe cases</b>	<b>Interdisciplinary team</b>	<b>Medical stabilization</b>
Admission to hospital and slow regimented feeding advance	Primary care, nutritionist, psychologist, psychiatrist	Hypovolemia, cardiac dysfunction, electrolyte abnormalities
<b>Nutritional rehabilitation</b>	<b>Behavioral intervention</b>	<b>Medications</b>
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 patients with binge eating disorder are recurring cravings accompanied by the intake of large amounts of high-calorie foods. Following these binge-eating episodes, there arise feelings of guilt and shame but the counter-regulatory measures are **absent** following the binge eating episodes (unlike bulimia).

In contrast to anorexia and bulimia, the patients 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).

# Symptoms of Eating Disorders in an Overview

<b>Anorexia Nervosa</b>	<b>Bulimia Nervosa</b>	<b>Binge Eating Disorder</b>
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	Shame and feelings of guilt	Shame and feelings of 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. Shame and feelings of 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. On physical examination, she has a height of 1.60 m and weighs 44 kg. Upon inquiry, however, the patient, states that she feels well except for decreased performance. She experiences her physical state as normal. Furthermore, she requests her doctor to help her quickly 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 organic consequential diseases. Which of the following symptoms does not apply to anorexia nervosa?**

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

## References

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**Correct answers:** 1D, 2B, 3E

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