

MUCIEK, Adrianna, MOCARSKA, Martyna, MENCEL, Jan, STRAKOWSKA, Katarzyna, OPALSKA, Laura, MARYŃCZAK, Anna, NITSCHKE, Nicole and ORŁOWSKA, Anna. Anorexia nervosa: Trapped between Mind and Body: An Analysis of Causes, Symptoms, and a Holistic Approach to Therapy. Quality in Sport. 2025;43:61452. eISSN 2450-3118.

<https://doi.org/10.12775/QS.2025.43.61452>  
<https://apcz.umk.pl/QS/article/view/61452>

The journal has been awarded 20 points in the parametric evaluation by the Ministry of Higher Education and Science of Poland. This is according to the Annex to the announcement of the Minister of Higher Education and Science dated 05.01.2024, No. 32553. The journal has a Unique Identifier: 201398. Scientific disciplines assigned: Economics and Finance (Field of Social Sciences); Management and Quality Sciences (Field of Social Sciences). Punkty Ministerialne z 2019 - aktualny rok 20 punktów. Załącznik do komunikatu Ministra Szkolnictwa Wyższego i Nauki z dnia 05.01.2024 Lp. 32553. Posiada Unikatowy Identyfikator Czasopisma: 201398. Przypisane dyscypliny naukowe: Ekonomia i finanse (Dziedzina nauk społecznych); Nauki o zarządzaniu i jakości (Dziedzina nauk społecznych). © The Authors 2025. This article is published with open access under the License Open Journal Systems of Nicolaus Copernicus University in Torun, Poland. Open Access: This article is distributed under the terms of the Creative Commons Attribution Noncommercial License, which permits any noncommercial use, distribution, and reproduction in any medium, provided the original author(s) and source are credited. This is an open access article licensed under the terms of the Creative Commons Attribution Non-commercial Share Alike License (<http://creativecommons.org/licenses/by-nc-sa/4.0/>), which permits unrestricted, non-commercial use, distribution, and reproduction in any medium, provided the work is properly cited. The authors declare that there is no conflict of interest regarding the publication of this paper. Received: 26.05.2025. Revised: 05.07.2025. Accepted: 05.07.2025. Published: 08.07.2025.

## **Anorexia nervosa: Trapped between Mind and Body: An Analysis of Causes, Symptoms, and a Holistic Approach to Therapy**

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## **Abstract**

*Anorexia nervosa* is a serious eating disorder marked by an intense fear of gaining weight and a distorted body image, leading to extreme food restriction and dangerous weight loss. It most commonly affects adolescents and young adults, particularly women. The causes of anorexia are complex, involving a combination of genetic, psychological, and socio-cultural factors. Key symptoms include significant weight loss, obsessive thoughts about food, and excessive physical activity. Effective treatment requires a multidisciplinary approach, integrating medical stabilization, nutritional support, psychotherapy, and, when necessary, pharmacotherapy. Long-term care and relapse prevention are essential for sustained recovery. Raising public awareness and promoting healthy body image is vital in preventing anorexia and its complications. This article explores the causes, symptoms, and treatment options for anorexia nervosa, highlighting the importance of early intervention in improving outcomes.

**Keywords:** anorexia nervosa, eating disorders, psychotherapy

## **Introduction**

Anorexia nervosa (AN) is a devastating eating disorder, which affects millions of people around the world, including an increasing number in Poland. It is characterized by deliberate weight loss, induced and sustained by the patient (Pużyński & Wciórka, 2000, s.151). People suffering from AN experience strong psychological compulsion leading to drastically limiting food intake and obsessive focus on body weight, which arises from a pathological fear of gaining weight (Kochman & Jaszczak, 2021).

Epidemiological data indicate an increasing prevalence of AN in Poland. In 2019, the total prevalence of the disorder was about 0.19% of the population (Matera et al., 2023). It most often affects women - in this group, the incidence ranges from 0.51% to 3.7%, while in men it is estimated at about 0.1% (Kochman & Jaszczak, 2021). People in adolescence (15-19 years) are particularly vulnerable (Rzepko et al., 2016), although it should be noted that anorexia can occur in people of any age, regardless of gender.

Current knowledge does not indicate clear causes of AN; it is considered that AN development is caused by interactions of biological, sociocultural, and psychological factors and personality traits (Pużyński & Wciórka, 2000). Risk factors include perinatal complications, sexual abuse, physical negligence, perfectionism, and low self-esteem (Jacobi et al., 2004; Dahlenburg et al., 2019).

Regarding the biological background of AN, the studies mostly concentrate on neurotransmitters—mainly serotonin, but also on structural and functional changes in the central nervous system (Yokokura et al., 2019; Pietrini et al., 2011). The main sociocultural factors taken into account are social media and the ideal slim silhouette, as well as obesity stigmatization (Kochman & Jaszczak, 2021).

Modern media have a great impact on almost every aspect of human lives – from interests to aspirations and value systems. The image of a slim figure perpetuated in media messages can lead to insecurities and the need to achieve an unmatched ideal at all costs (Możdzonek & Antosik, 2017). Additionally, the fast pace of life, the pressure to succeed both professionally and personally, and the accompanying stress can promote compensatory weight control (Bąba-Kubiś et al., 2018).

Literature highlights the importance of family environment – most importantly parents' role in developing self-esteem in their children. A specific family model is described (domineering mother and passive father), lack of communication, and no respect of child's autonomy (Rzepko et al., 2016).

AN is not only the statistics and definitions – it is first and foremost a personal drama. This disorder involves much more than just issues with eating or weight; it is often a manifestation of deep psychological suffering, rooted in fear, perfectionism, and social pressure. Many people suffer in silence, struggling internally with a distorted self-image and low self-esteem. Lack of a swift diagnosis and proper intervention may lead to serious somatic complications, chronic psychological problems, and even death. Early diagnosis and treatment administration significantly increase the chances of full recovery.

### **The aim of this study**

The purpose of this article is to synthesize the knowledge of AN by discussing its causes, symptoms, and current treatments. In addition to the clinical aspect, the importance of emotional factors, self-esteem and the patient's overall mental state is also emphasized. Attention is given to the necessity of a holistic therapeutic approach, which can significantly affect the prognosis and recovery process.

## **Diagnostics criteria**

The diagnosis of AN should be based on a comprehensive clinical evaluation, including medical history, physical examination, and psychological assessment. Currently, the Diagnostic and Statistical Manual of Mental Disorders 5 (DSM-5) and International Classification of Diseases 11th Revision (ICD-11) contain the most commonly used diagnostic criteria for AN.

1. Significantly reduced body weight about a person's height, age, developmental stage, or weight history. In clinical practice, the diagnostic threshold is considered to be a body mass index (BMI) below 18.5 kg/m<sup>2</sup> in adults and a BMI-for-age below the 5th percentile in children and adolescents. If the other diagnostic criteria are met, rapid weight loss may be an alternative to the criterion of reduced body weight. In children and adolescents, instead of weight loss, there may be a lack of expected weight gain, consistent with the individual's growth and development trajectory.
2. Low body weight cannot be attributed to another medical condition or lack of access to food.
3. A persistent pattern of restrictive eating behaviors aimed at achieving or maintaining abnormally low body weight, typically accompanied by fear of weight gain. These behaviors may include restricting caloric intake, provoking vomiting, using laxatives, diuretics, enemas, excessive physical activity, and other ways to increase energy expenditure - such as deliberately exposing oneself to cold or taking substances to speed up metabolism.
4. Excessive focus on body weight and figure, expressed in the perception of low body weight as a key element of self-esteem or a distorted self-image. A person may perceive their figure as too large or unacceptable, despite having no basis in reality. Manifestations of this preoccupation may include frequent body weight checks, measuring body circumferences, inspecting one's figure in the mirror, meticulously counting calories, and seeking information on weight loss methods. Avoidance behaviors may also occur, such as forgoing mirrors in the home, reluctance to wear tight clothes, avoiding weighing oneself, or purchasing clothes in a particular size (World Health Organization, 2022)

## Classification

According to Kochman and Jaszczak (2021), the criteria for underweight assessment in AN differ based on the patient's age. In children and adolescents under the age of 15, AN can be diagnosed on the basis of a decrease in body weight by at least two percentile channels down, with reference to the BMI or age-appropriate weight-to-height ratio.

For patients over 15 years of age, the severity of AN is based on body mass index (BMI):

- Mild form:  $\text{BMI} \geq 17 \text{ kg/m}^2$
- Moderate form:  $\text{BMI} 16\text{-}16.99 \text{ kg/m}^2$
- Severe form:  $\text{BMI} 15\text{-}15.99 \text{ kg/m}^2$
- Very severe form:  $\text{BMI} < 15 \text{ kg/m}^2$  (Kochman & Jaszczak, 2021).

## Prognosis

The prognosis in AN is complex and based on many factors such as the severity of the disease, moment of treatment administration, and treatment effectiveness. In some patients full remission can be observed, whereas in some patients, a chronic or recurrent course, can be observed.

The important prognostic factor is the psychological dynamics of the disorder. It can firstly present itself as subjective pride and euphoria from losing weight. During the course of the disorder, these emotions transform into increasing irritability, apathy, and in severe cases – symptoms of depression and even suicidal thoughts (Kochman & Jaszczak, 2021).

Another important predictor of prognosis is the length of the disorder - adults with a longer course of anorexia tend to have a lower susceptibility to treatment and a higher risk of relapse after initial somatic improvement (Muratore & Attia, 2021).

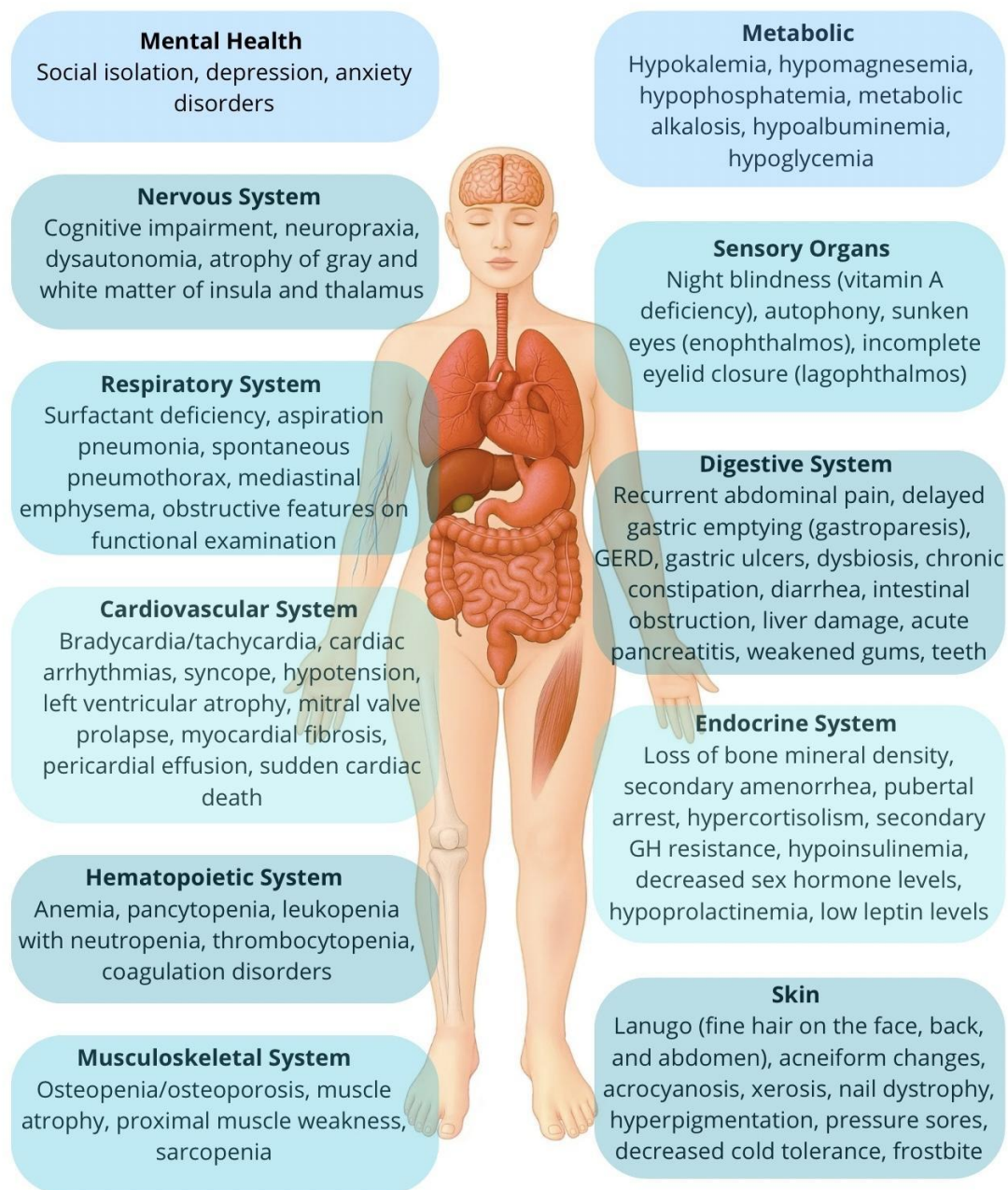
Unfortunately, AN is ranked among the psychological disorders with the highest mortality rate, which according to different sources can differ between 5% and 18% (Rzepko et al., 2016). These deaths are the result of somatic complications, such as heart and organ failure, and suicidal acts. It is estimated, that more than half of deaths are the result of suicide (Rzepko et al., 2016). Importantly, the risk of attempted suicide increases with the duration of the eating disorder (Cepuch et al., 2020).

## **Complications of AN**

AN is related to numerous, often simultaneous complications from different systems and organs. The severity of the complications is related to the duration and severity of the disorder. Although many of these disorders resolve with the implementation of effective nutritional therapy and restoration of normal weight, some can lead to permanent damage to the body (Cost et al., 2020).

It is worth noting that some complications may manifest or can be exacerbated during treatment. An example of such a condition is a re-feeding syndrome, which poses a serious clinical threat during the initial phase of nutritional restitution (Baenas et al., 2024; Skowrońska et al., 2019).

Figure 1 shows selected systemic complications associated with anorexia, compiled from the available literature on the subject (own elaboration).



**Fig. 1:** Systemic complications of anorexia nervosa described in available literature (own elaboration).

### The importance of holistic treatment

The basis for preventing complications and improving the prognosis of anorexia nervosa is a multidisciplinary therapeutic approach, including psychological support, nutritional rehabilitation, and, if necessary, ongoing medical supervision, aimed at monitoring the patient's vital signs, hormonal functions, and overall metabolic status. The treatment of anorexia in



children and adolescents involves a therapeutic team, that should consist of a child psychiatrist and/or pediatrician, a psychotherapist, a dietitian, a physiotherapist and/or an occupational therapist, and qualified nursing staff with the communication skills to work effectively with both the patient and his or her caregivers (Herpertz-Dahlmann, 2021).

The primary goal of treatment in all eating disorders is the elimination of directly life-threatening somatic symptoms and the restoration of adequate nutritional status. In cases of severe symptoms, such as cachexia, cardiovascular disorders, or electrolyte disturbances, hospitalization in the internal medicine unit, intensive care, or, in the case of pediatric patients, in the pediatrics department is necessary. Once the general condition is stabilized, the treatment should be continued in a psychiatric unit or an outpatient setting.

The therapeutic team has to be aware that AN is not only a somatic disorder with serious complications, but it is also deeply rooted in the emotional sphere. Treatment should address patients' mental suffering, treating the psychological aspect as equally important as physical recovery. At every stage of treatment - with particular emphasis on contact with primary care physicians - an empathetic approach, free of judgment and pressure, that fosters trust, is crucial. This is especially important given patients' frequent resistance to treatment, stemming from fear or disease denial mechanisms.

Emotions, fears, and self-esteem of patients suffering from AN should be the main focus during treatment. It is important to emphasize that an emphatic approach, long-term support and properly chosen therapeutic methods significantly increase the chances of full recovery, improve patients' quality of life and reduce the risk of death.

### *Psychotherapy*

Psychotherapy is considered to be the most effective form of treatment for severe cases of AN, especially in patients with high awareness of their condition and ready to cooperate in the therapeutic process (Rzepko et al., 2016). Individual therapy, group therapy – which allows sharing experiences with people struggling with similar difficulties, and family therapy – which involves patients' parents are commonly used.

Among the particularly effective methods, cognitive-behavioral therapy (CBT) is crucial, to identifying and modifying distorted beliefs about eating, weight, and appearance, as well as eliminating destructive behavioral patterns, such as restrictive food intake or the use of compensatory behaviors (Muratore & Attia, 2021).

In treating adolescents, family-based therapy (FBT) is considered a "golden standard", because of its proven effectiveness in this age group. This therapy is most often usually

conducted on an outpatient basis and requires the active involvement of the entire family in the recovery process (Muratore & Attia, 2021).

Other therapeutic approaches based on cognitive approaches used in psychotherapy on AN include cognitive remediation therapy (CRT), third-wave cognitive-behavioral therapy, specialist supportive clinical management (SSCM)

Contrary to the children and adolescent population, in the case of adult patients with AN, none of the therapeutic methods is conclusively more effective than the others, therefore there is no "gold standard" of treatment in this patients group.

#### *Pharmacotherapy*

Once weight stabilization has been achieved, second-generation antidepressants such as selective serotonin reuptake inhibitors (SSRIs), norepinephrine reuptake inhibitors (SNRIs), and norepinephrine-dopamine reuptake inhibitors (NDRIs) are used to treat co-occurring depressive and anxiety symptoms in patients with AN. These drugs have a more favorable safety profile compared to older formulations (Himmerich et al., 2021). However, it should be noted that most randomized controlled trials have not confirmed their significant efficacy in terms of weight gain or reduction of AN symptoms compared to placebo (Muratore & Attia, 2022).

Among second-generation antipsychotics, in adult patients with AN, olanzapine shows potential in promoting moderate weight gain. Despite promising results, its use as adjunctive therapy requires further well-designed clinical trials to assess efficacy and safety (Han et al., 2022).

#### *Neuromodulation*

Concerning the hypotheses of biological basis for anorexia nervosa, there has been growing interest in the use of neuromodulatory methods such as repetitive transcranial magnetic stimulation (rTMS), transcranial direct current stimulation (tDCS) and deep brain stimulation (DBS), particularly in the treatment of cases unresponsive to conventional therapy (Gallop et al., 2022). Although techniques such as stereotactic ablation and DBS may show beneficial clinical effects, further research is needed to accurately assess the risk-benefit ratio and to precisely define patient eligibility criteria for such interventions (Murray et al., 2022).

#### *Physiotherapy*

A systematic literature review by Minano-Garrido et al. suggests that chosen forms of physiotherapy may be a beneficial supplementation to AN treatment. Strength training, basal body awareness therapy (BBAT), whole-body massage, and relaxing techniques may contribute to improvement of muscle strength, mood, relationship with one's body, eating behavior and

reducing anxiety in women with AN. In addition, physical exercise combined with cognitive-behavioral therapy supports improvements in patients' overall quality of life.

Although none of the studies included in the systematic review revealed any complications, the lack of evidence indicates the need for further studying the effectiveness of physiotherapy in AN treatment (Minano-Garrido et al., 2022).

## **Summary**

The increase in suicidal behavior among adolescents is a disturbing phenomenon observed in recent years, both in Poland and around the world. Those struggling with eating disorders, which are often accompanied by other forms of destructive behavior, such as self-harm, substance abuse, or compulsive behavior are particularly vulnerable (Cepuch et al., 2020). Consequently, increasing the vigilance of medical personnel - especially in pediatric wards - and stepping up educational efforts for public awareness of the scale and complexity of the problem are key to prevention.

Early diagnosis and correct assessment of the symptoms are fundamental because they allow quicker implementation of effective treatment (Cost et al., 2020). Integrated, multidisciplinary medical care, implemented in the earliest stages, is crucial in preventing serious complications. A therapeutic team should include physicians, psychologists, nutritionists, and other specialists, taking into account the individual needs of the patient (Baenas et al., 2023).

A holistic approach to the treatment of anorexia, which takes into account not only the medical aspect but also the psychological one, is essential. The empathy shown by staff and the willingness to provide active, long-term support have a key impact on the course of therapy, by contributing to a reduction in mortality, which remains one of the most serious risks in the course of this disease.

When dealing with a patient suffering from anorexia nervosa, promoting self-acceptance and a positive body image, supporting the development of constructive ways to cope with emotions and stress, as well as patience and understanding are particularly important. The recovery process requires time and continuous, gradual work to rebuild a healthy relationship with food and oneself.

## Conclusions

1. Epidemiological data on AN in Poland show a diverse picture of the disease across age groups and time periods. Continued monitoring and further research are needed to better understand trends and develop effective intervention strategies.
2. Education and raising social awareness on the topic of eating disorders remain crucial elements in combating this complex health problem.
3. Prioritizing early diagnosis and implementation of adequate treatment may help not only in restoring physical health but also in rebuilding self-esteem and regaining control of one's life.
4. By promoting a holistic approach, full of understanding and compassion, we can provide those struggling with anorexia not only with adequate medical support but also with the necessary psychological and emotional help for recovery and improved quality of life.

## Authors' contributions statement

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All authors have reviewed and agreed to the publication of the final version of the manuscript.

**Conflict of Interest Statement:** No conflicts of interest.

**Funding Statement:** The study did not receive any specific funding.

**Informed Consent Statement:** Not applicable.

**Ethics Committee Statement:** Not applicable.

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