

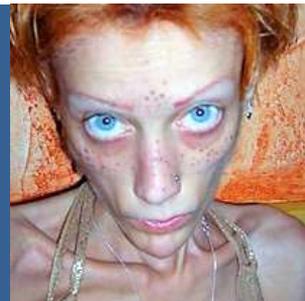


Eating Disorders and Oral Health

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EDUCATIONAL OBJECTIVES

1. Identify risk factors of eating disorders.
2. Summarize the etiology, clinical features, epidemiology and medical complications for anorexia nervosa, bulimia nervosa and bigorexia.
3. Describe the oral manifestations of eating disorders.
4. Describe an evidence based dental care and support protocol for patients with eating disorders.





Eating Disorders

Eating disorders are **psychiatric illnesses** characterised by **disordered eating**, and **disturbed attitudes to eating and body image**; they are often accompanied by inappropriate, dangerous methods of weight control



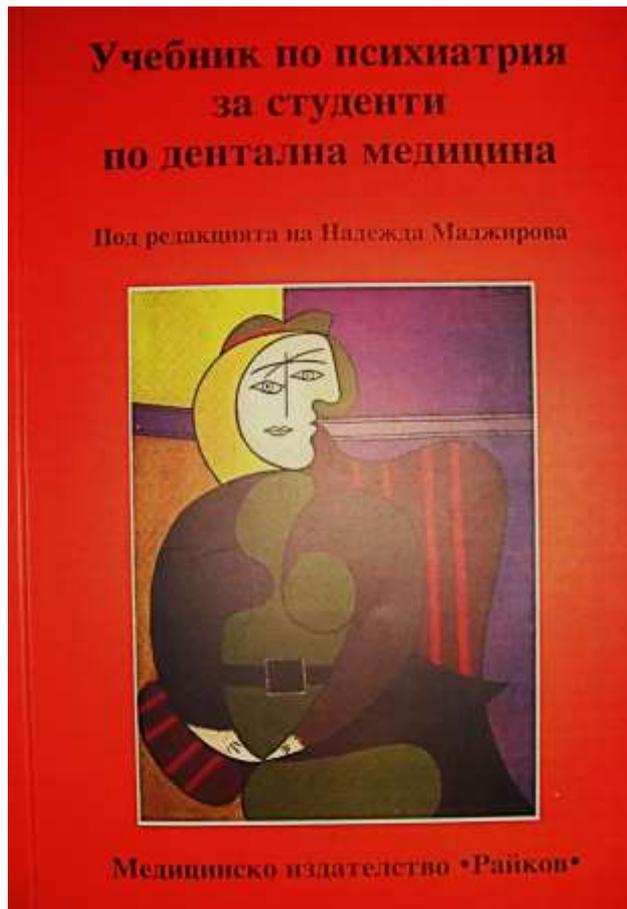
Eating Disorders

An individual with an ED has **intense emotions, attitudes, and behaviors surrounding weight, food, and body image** influenced by society and culture, as well as psychological factors. **Psychological factors** that can contribute to the development of an ED are feelings of low self-esteem, lack of control in life, depression, anxiety, anger, and loneliness.



Prevalence of eating disorders

- According to a 2012 survey, 1.5% of Bulgarian women aged 15–24 years had an eating disorder. The UK has the highest rate of eating disorders in Europe.
- Eating disorders occur mostly in females aged 15–25 years of age, but also occur in males, in children as young as seven, and in people aged over 50.

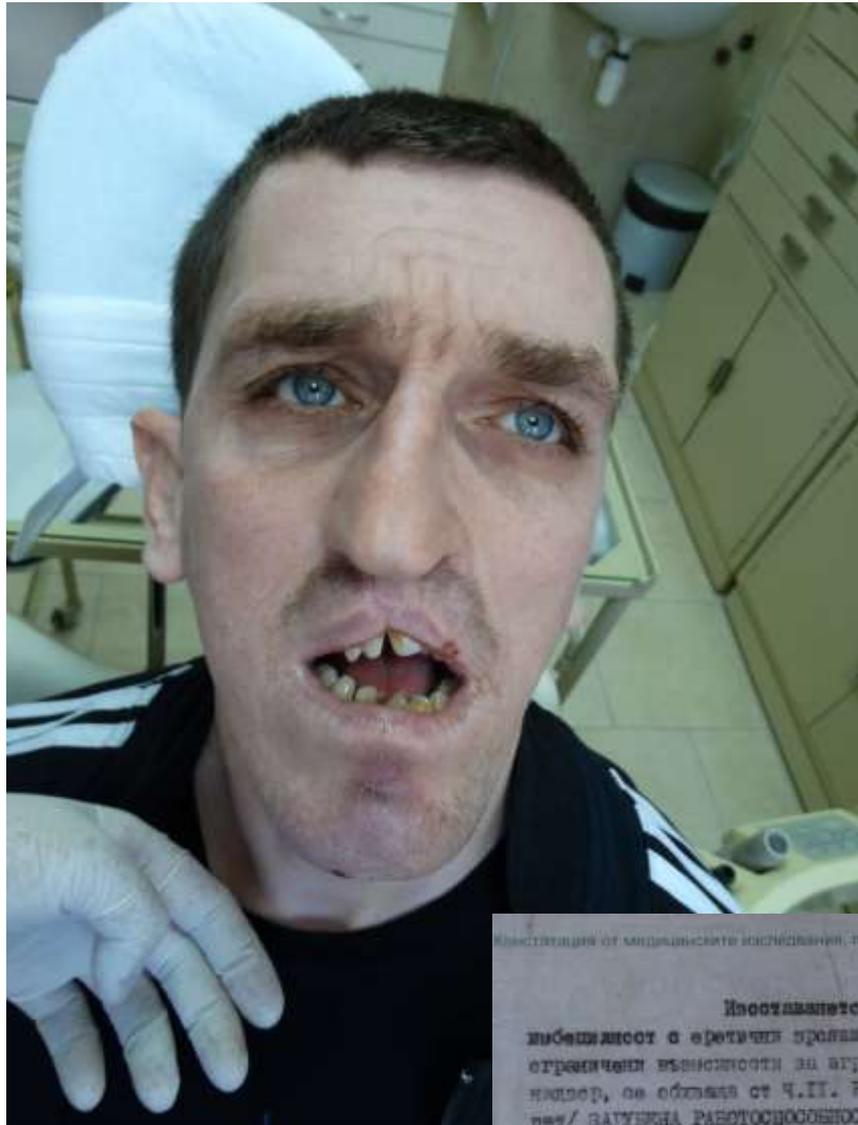


Eating disorders should not be misdiagnosed as psychiatric diseases where oral health is affected coincidentally due to disabilities, poor oral hygiene or drugs side effects



Patient: V.I. from Plovdiv, 25 years old male
Diagnosis: paranoid schizophrenia
Oral status: rampant caries and parodontitis





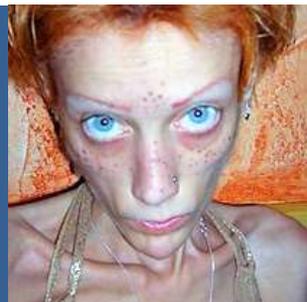
Класификация от медицинските изследвания, представените документи и мотиви за медицинско заключение

Насождането в псих.развитие до степен или лека
набелязано с еретични прояви, поддържащ говор, довели до озно
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Eating Disorders

- anorexia nervosa
- bulimia nervosa
- bigorexia



Anorexia Nervosa



- AN is characterized by **self-starvation and excessive weight loss**.
- Risk factors for developing AN including genetics, hormone regulation, and family dynamics.
- In the Bulgaria, AN occurs in **0.9% of women** and 0.3% of men, with the average age of onset at 19.7,8
- **Mortality rates** associated with AN are high; **6% to 20%** of patients eventually die due to starvation or suicide.7,8.

Anorexia nervosa is marked by three main features:



- A refusal to eat enough to maintain body weight within 15% of the minimally normal weight for age and height
- An extreme fear of gaining weight
- A distorted body image: thinking they are fat, even when they are emaciated

Bulimia nervosa



- Bulimia nervosa is **the most common eating disorder** and is characterised by a pattern of **consumption of massive amounts of food** (binge-eating) and recurrent inappropriate behaviours to control one's weight.
- These include purging through **self-induced vomiting**, abuse of laxatives, diuretics, or emetics, or other behaviors such as fasting (not eating for at least 24 hours) or excessive exercise.

Bulimia nervosa



- The **weight** of bulimic individuals tends to **fluctuate**, but is usually within normal limits.
- About one third of bulimics have a **history of anorexia nervosa**, and some have a **history of obesity**.
- They typically eat high-calorie foods. This is followed by depression, panic and guilt, and a compulsion to purge.
- These episodes occur at least twice weekly over a period of several months; some bulimic individuals vomit five or six times per day.

Medical complications of ED



General

- Fatigue
- Dehydration, malnutrition
- Electrolyte imbalance
- Hypoglycaemia
- Anaemia
- Low white blood cell count, and impaired immunity
- Slow metabolism
- Osteoporosis
- Loss of muscle mass

Medical complications of ED



Skin

- Extremely dry, scaly, itchy skin with a grey cast
- Decreased scalp hair, which is short and brittle
- Increased lanugo hair - fine hair on the back, abdomen and arms (the body's attempt to retain body heat after excessive loss of body fat)
- Bloodshot eyes and broken capillaries (petechiae) of the skin around the eyes, related to forced vomiting

Medical complications of ED

Heart and major organs

- Cardiac arrhythmias, and cardiac arrest related to electrolyte imbalance (especially low potassium), dehydration, or starvation-induced atrophy of the cardiac muscle
- Slow pulse rate & Low blood pressure
- Impaired capacity to think, due to starvation-related brain changes
- Kidney damage
- Liver damage due to starvation or substance abuse¹⁶
- Hypothyroidism
- Infertility related to disruption or cessation of the menstrual cycle



Medical complications of ED

Digestive system

- Abdominal pain
- Chronic constipation
- Poor muscle tone of the colon, and incontinence related to misuse of laxatives
- Mallory-Weiss lesions (gastro-oesophageal laceration syndrome) - bleeding, lacerated oesophagus due to vomiting
- Gastric bleeding
- Ruptured stomach might occur during bingeing
- Liver damage due to starvation or substance abuse
- Swollen parotid glands and sore throat related to purging



Medical complications of ED

Extremities

- Clubbed fingers related to cardiac complications, or overuse of laxatives
- Cold hands and feet related to peripheral vasoconstriction
- Russell's sign: callouses, scars or abrasions on the knuckles of the dominant hand, related to inserting the fingers in the mouth to induce vomiting
- Carotenoderma - orange pigmentation of skin, especially on the palms of the hands, related to a restricted diet with excessive intake of foods containing carotene



Oral complications



Oral complications

Oral complications are also related to ED behaviors.

In the **restrictive type**, oral manifestations result from malnourishment and include:

- soft tissue lesions
- angular cheilitis
- candidiasis
- glossitis

In the extremely underweight, **poor oral hygiene has been reported due to fatigue and depression**, and may be a factor in caries and periodontal incidence.

Oral complications



Oral complications

Of all ED habits/rituals, those who purge through vomiting display the most obvious oral manifestations.

Patients who purge through vomiting may exhibit:

- Parotid gland enlargement
- Salivary dysfunction, including xerostomia
- Tooth enamel erosion (classically on the lingual surfaces of the maxillary anterior, may be noted after 6 months of purging behavior, due to high acidity of stomach fluids)

Patients with BN may complain of sensitive teeth due to exposed dentin and or perimolysis (decalcification due to exposure of stomach acid from chronic vomiting) around existing restorations.

Dental erosion affects more than 90% of people with bulimia nervosa and 20% of individuals with anorexia nervosa. There is considerable overlap between anorexia and bulimia; people with anorexia may sometimes engage in binge-purge behavior, and those with bulimia may have periods of severe food restriction.



Usually erosion from bulimia is noticeable on the upper front teeth, particularly on the lingual side and incisal edges. The bottom teeth tend to be protected by the tongue when a person vomits, so this particular pattern of erosion is a cause for concern.



N.B. Teeth exposed to stomach acids lose enamel and their appearance becomes diagnostic for an eating disorder!





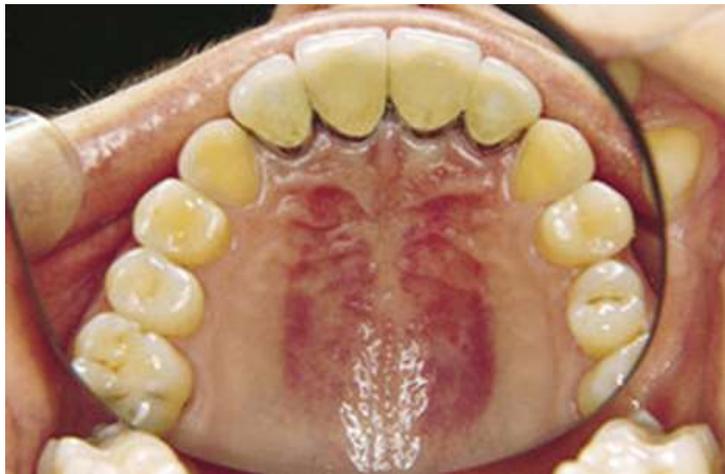
Oral complications



Oral complications

- **Palatal lesions** and or chipped anterior teeth may be detected from fingers or other objects including spoons, combs, and toothbrushes jammed into the tissues to induce vomiting
- **Soft tissue lesions** are noted due to malnutrition from malabsorption of nutrients due to constant purging behaviors.
- Unlike patients with AN who do not have the energy for self-care and have poor oral hygiene, patients with BN, because of their obsessive-compulsive nature, tend to have excellent oral hygiene.

In severe cases the **salivary glands can become enlarged**, causing the sides of the face under the ears to look puffy. The **palate, throat, and back of the tongue can appear reddened or otherwise traumatized** from the use of fingers to induce gagging. Moreover, the acidity of the stomach contents can damage and cause **ulceration of the soft tissues**.



*A Bizarre Palatal Haematoma In A 30-Year-Old Female Bulimic
(From BDJ 1999; 186: 109–113)*



*An Example Of Bilateral Parotid Enlargement; This Is Episodic
(From BDJ 1999; 186: 109–113)*



General appraisal begins as soon as we greet our patient. We should be tactfully observant of their general demeanor, gait, and facial symmetry; the skin should also be observed for lesions and pallor, and the hands for *Russell's sign*, or nail clubbing



Russell's sign: calluses, scars or abrasions on the knuckles of the dominant hand, related to inserting the fingers in the mouth to induce vomiting

Oral manifestations of eating disorders and resulting malnourishment.

Eating Disorder	Characteristic Habits	Resulting Oral Risk Factor	Oral Manifestations
Anorexia nervosa	Restrictive	Poor oral hygiene due to exhaustion	Increased risk of periodontal diseases and caries
		Malnourishment	Increased risk of periodontal diseases Soft tissue lesions Angular cheilitis Candidiasis Glossitis
	Purging via vomiting	May exhibit within 1 week: • parotid gland enlargement • salivary dysfunction	Increased risk of caries and/or burning tongue and mouth due to xerostomia
Bulimia nervosa		Increased acidity in oral cavity as a result of high acidity of stomach fluids in the vomitus	Tooth enamel erosion, classically on the lingual surfaces of the maxillary anteriors, may be noted after 6 months resulting in increased risk of caries and tooth sensitivity

Clinical
case



Clinical
case



Clinical
case



Clinical
case



Clinical
case



Lactobacillus (CFU>10⁵)

Treatment plan

Diagnosis of ED

- When an eating disorder is suspected, this sensitive topic needs to be broached in a **non-judgmental, non-threatening manner**.
- It is beyond our scope of practice to diagnose eating disorders, but **we can present the findings of our examination to the patient**.
- For example, **if there is dental erosion, mention some possible causes**: acidic drinks, acid reflux or frequent vomiting.
- This gives the patient an opportunity for disclosure.



Treatment plan

Appropriate brushing, flossing and use of necessary oral therapy aids

Tongue cleaner to remove acid residue

Home fluoride therapy

- 1.1% neutral fluoride gel in tray
- 0.5% fluoride daily rinse
- Office fluoride therapy

Suggestions for dentinal hypersensitivity

Suggestions for xerostomia

Avoid brushing after regurgitation

- Wait at least forty minutes
- Avoid rinsing with tap water after regurgitation
- Rinse with 1 teaspoon of sodium bicarbonate with 8 ounces of water immediately after regurgitation



Treatment plan

To minimize enamel loss:

- Use soft or ultra soft toothbrushes
- Avoid toothpaste with abrasive levels above FDA recommendations
- Avoid “scrubbing” toothbrushing methods

Use of mouthguard during vomiting episodes

Discussion of nutritional issues and the relationship to the health of the oral cavity

Provide examples of noncariogenic and cariostatic foods

- Proteins
- Products with Xylitol

Provide examples of acidic foods that can contribute to erosion

- Use a straw for acidic beverages
- Carbonated beverages
- Pickled products
- Citrus products















- A **mouthguard** can be used to protect the dentition during vomiting.
- The patient **should not brush directly after vomiting**, as this causes more loss of tooth structure, and rinsing with water will reduce the protective properties of the saliva.
- Instead, the **oral pH should be neutralised** by rinsing with one teaspoon of bicarbonate of soda in 8 oz of water, or a product with calcium and phosphate ions.



ДПС НА ДИЕТА
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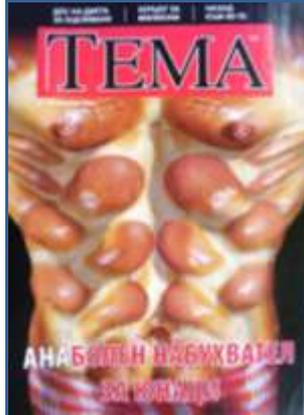
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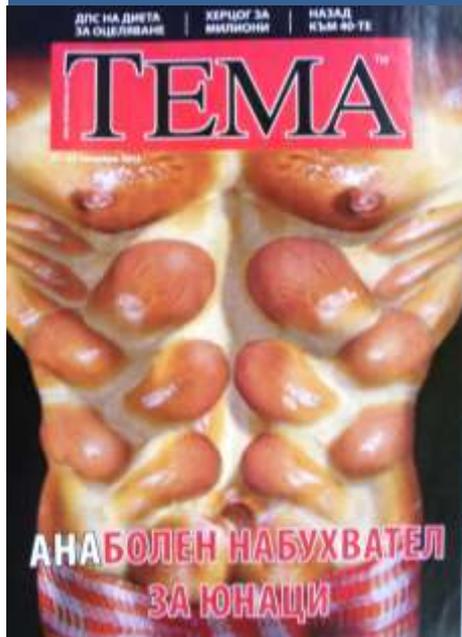
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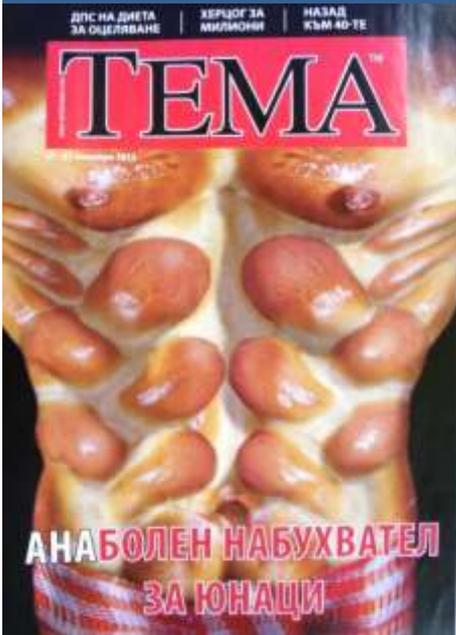
Bigorexia

- Muscle dysmorphia (also known as "bigorexia") is a disorder that is characterized by a **fear of being too small**, and perceiving oneself as small and weak even when one is actually large and muscular.
- Sometimes referred to as the **Adonis Complex**, muscle dysmorphia is a very specific type of body dysmorphic disorder.
- In this disorder a person is **preoccupied with thoughts concerning appearance, especially musculature**.
- They are hypervigilant to even small deviations from perceived ideal and they ignore information that their body image is not consistent with reality



Bigorexia. Anabolic-androgenic steroids abuse





Complications of Bigorexia

- Frequent injury and damage to muscles, joints and tendons due to over exercising
- Health complications due to abuse of anabolic steroids and other supplements used to build body mass (possible effects of cardiovascular alterations are [hypertension](#), cardiac [arrhythmias](#), congestive heart failure, heart attacks, and [sudden cardiac death](#))
- Muscular para-functions ([bruxism](#), bruxomania, tooth [abrasion](#), tooth [fractures](#))
- [Aggression](#), anxiety, self-hatred and depression, suicidal tendency



THANK YOU FOR YOUR ATTENTION!



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