



## **CORRECTION OF BITE IN ADULTS**

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### **Abstract**

#### **Types of bite problems**

Pathological occlusion is a violation of the relative position of the dentition, observed when the upper and lower jaws are completely closed. Today, most people have a different bite than normal. However, as a rule, such violations are not critical and do not require correction.

In turn, serious anomalies in the structure of the bite can lead to a violation of the functions of the dental apparatus, other organs and systems of the body, cause morphological and aesthetic failures. Such violations require timely detection and correction using modern orthodontic structures and devices.

#### **Types of pathological bite**

1. Modern orthodontics identifies five key forms of pathological occlusion:
2. • mesial (mandibular bone significantly protrudes forward);
3. • distal (the frontal part of the upper row of teeth protrudes significantly forward);
4. • deep (the mandibular incisors are overlapped by the upper incisors by more than  $\frac{1}{2}$  of the length);
5. • open (in this case, part of the teeth on both jaws cannot close, forming a gap);
6. • cross (one or both sides of one of the jaws are underdeveloped).

Some researchers include disorders such as diastema and dystopia in this classification. Dystopia is the pathology of occlusion, in which individual teeth are located outside their standard position in the dentition. In turn, the term diastema refers to such a violation of the position of the teeth, in which a gap with a width of up to 6 mm is formed between adjacent central incisors.

The causes of the formation of a pathological bite

Any malocclusion occurs under the influence of the following factors:

- injuries sustained during childbirth;
- poor heredity;





- a number of diseases suffered by a woman during pregnancy;
- chronic diseases of the nasopharynx;
- mistakes when feeding a baby from a bottle or breast;
- multiple carious lesions of the teeth
- formation of oral respiration;
- inadequate, improper nutrition;
- relative lack of fluoride or calcium;
- exchange failures;
- injuries to the maxillary system;
- the child's adoption of the wrong position during sleep
- abuse of a pacifier at an early age;
- habit of sucking collar, finger, toys;
- incorrect posture;
- rickets;
- uneven abrasion of temporary teeth;
- prolonged replacement of temporary teeth with molars;
- long before their change to permanent ones, the removal of temporary teeth.

### **Malocclusion: consequences and complications**

Unfortunately, in the absence of treatment, malocclusion can become one of the factors provoking the development of a number of pathological processes in the body.

In particular, malocclusion can be a consequence of:

- changes in the principles of functioning of the dental system;
  - increasing the load on some teeth and weakening it on others;
  - accelerated abrasion of the enamel layer of teeth;
  - noticeable increase in tooth sensitivity;
  - changes in the shape of the face, loss of its symmetry, the appearance of aesthetic defects, violations of facial expressions;
  - impaired speech function;
  - increased risk of injury to the tongue, cheeks, gums;
  - increased risk of periodontal disease;
  - damage to the TMJ;
  - the appearance of inflammatory processes;
- problems during prosthetics and implantation procedures;  
the appearance of sleep apnea;  
impaired respiratory function;  
the occurrence of diseases of the nasopharynx, digestive organs, and respiratory tract.





### **Among the main types of malocclusion:**

Crossbite is a condition in which one or more teeth of the lower jaw appear outside the arch of the upper jaw when closing. Crossbite can be either unilateral or bilateral. It affects the normal functioning of the jaw, can cause tooth wear and problems with the jaw joint. Treatment usually involves the use of braces or special plates to gradually adjust the position of the teeth.

An open bite is characterized by the presence of a vertical space between the dentition of the front teeth with the jaw closed. This interferes with the normal chewing of food and can lead to diction problems. An open bite is often corrected with orthodontic treatment using braces.

Deep bite - the upper teeth strongly overlap the lower ones, sometimes to the extent that the lower teeth can come into contact with the gum of the upper jaw, causing injury. A deep bite can contribute to tooth wear and pain in the jaw joint. Treatment usually includes orthodontic intervention to reduce overlap and restore balance between the jaws.

The tilt of the teeth leads to improper closure and wear of the teeth, as well as creates difficulties in oral care. Treatment usually involves wearing braces or other orthodontic devices for alignment or reversal.

Crowding - there is not enough space in the jaw for all the teeth, as a result of which they begin to overlap each other. Crowding can make dental care difficult, contributing to the development of caries and gum disease. Orthodontic treatment often involves the removal of one or more teeth and the use of braces to optimally distribute the remaining teeth in the available space.

### **Diagnostics**

Before starting treatment, our orthodontists perform a thorough diagnosis. We examine the oral cavity, take X-rays and 3D scans of the teeth to accurately determine the type and extent of the problem, as well as develop an optimal treatment plan.

Indications and contraindications for bite correction

### **Orthodontist treatment is necessary if there is:**

- Constant or periodic pain in the jaw.
- Difficulty chewing or diction.
- Tooth enamel wear due to malocclusion.
- The desire to improve the appearance of a smile.

There are limitations to orthodontic correction:

- Acute inflammatory gum diseases.





- Serious systemic diseases that can complicate the process of tooth alignment.
- Insufficient oral hygiene.

#### Bite correction methods

Aligners are transparent mouth guards that gently and gradually align teeth. They are comfortable, almost invisible and do not require special care. They are removed during meals and cleaning.

Braces are a classic method of correcting overbite. Bracket systems effectively cope with serious abnormalities and involve long-term treatment (from six months to 2-2.5 years, depending on the complexity). There are such devices:

Metallic - the most traditional type, made of high-strength metal alloys, visible during a conversation or smile. They are not suitable for metal allergy sufferers.

Ceramic - made of ceramics, the milky shade of which is closer in color to natural teeth.

Sapphire - transparent braces made of synthetic sapphire, almost invisible, are popular among adults due to their aesthetics.

Lingual - they are attached to the inner (lingual) side of the dentition, completely invisible from the outside.

Trainers are used to correct simple bite problems. These devices are worn at night or for several hours a day.

Surgical correction of occlusion - in difficult cases, orthognathic surgery is required to correct serious abnormalities by changing the position of the jaws.

#### **Preparation for the procedure**

We make careful preparations before starting treatment. Professional cleaning is always carried out at the dental hygienist. If there are dental diseases, the therapist eliminates carious foci, gum inflammation, etc. Otherwise, while the braces are on the teeth, the situation may worsen. Therefore, the systems are installed only on healthy teeth. When the patient is ready for dental alignment, an individual treatment plan is developed for him.

#### **How is the treatment of malocclusion**

Treatment begins with the installation of the selected device – aligners or braces. The doctor takes prints and orders the manufacture of individual orthodontic devices. If a bracket system is installed, a person needs to come for correction once a month. If the teeth are lined with mouth guards, a new set is made every week to move the teeth to the desired position.





### **Recommendations after treatment**

After the end of treatment, it is important to follow the doctor's recommendations - do not forget about regular preventive visits to a specialist, wear retainers for the prescribed number of hours a day, monitor hygiene.

### **Possible complications**

Complications in orthodontics are rare and correctable. This may be an increased sensitivity of the teeth, discomfort when wearing the device, or gum inflammation. If you can't get used to a removable or non-removable device, consult your doctor. Also remember that all the features of the body, for example, allergic reactions, must be reported to the doctor at the stage of choosing a treatment system.

### **Prevention**

To prevent bite problems, you should visit the dentist regularly, take proper care of your teeth and avoid bad habits (do not bite hard objects).



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