Movement of the mandible during the assessment of occlusion: terms and definitions The main goal in restoring occlusion in the case of a removable denture is to ensure stability of its base. This concept is completely different from that used in the restoration of natural teeth with intact roots and periodontal ligament. The principles of recreating occlusion for removable partial dentures lie somewhere in the middle. When making partial removable dentures, it is important to take into account the location of the chewing surfaces relative to the alveolar ridge, the presence of balancing contacts on the non-working side, the inclination or complete absence of cusps. But all this does not matter when creating a permanent structure. The methods for recording and reproducing movements of the lower jaw during the manufacture of fixed and removable structures are almost the same, but the modeling of occlusal relationships, although similar in some ways, still has some differences. Hinge axis (SHO) and rear closure arc. This axis passes through both condylar processes; around it, during movements of the lower jaw, the condylar processes move to the most posterior (comfortable) position, describing the posterior arc of closure. This movement is clinically reproducible and its recording is often useful in the fabrication of crowns and bridges and is indispensable in the construction of complete dentures. SH can be determined individually for each patient, but usually average values obtained using a facebow are used. Maximum fissure-tubercle contact (FTC). The position of maximum fissure-tubercle contact is also sometimes called “central occlusion,” but this term is often confused with “central jaw relation,” and is also used in relation to the central position of the condylar processes in the glenoid fossa, the coincidence of the midline of the mandible with the midline of the face, or the central position of the cusps in the fissures of antagonist teeth. Meanwhile, these provisions do not always coincide. For this reason, it is better not to use the term “central occlusion”. Rear contact position (RCP). This is the most posterior position of the lower jaw when the teeth are closed. Usually this position is easily reproducible, but some patients with abnormal activity of the masticatory muscles may have difficulty moving the jaw into the PCL, even with the help of a physician. In less than 10% of the population, the ZKP coincides with the FBK. The term “central jaw relation” is also used to describe this position, but it has the same disadvantages and limitations as “central occlusion”. The terms “central occlusion” (CO) and “central jaw relation” (CR) can be used when creating complete removable dentures, but in this case their meanings do not coincide with FBR and ZKP. Movements of the lower jaw When there is a difference between the FBK and the FBK, people usually unconsciously close their teeth in the FBK from a position of physiological rest. But while in the dentist’s chair and consciously moving their jaw at the doctor’s request, patients quite often, instead of closing their teeth directly, make chaotic movements along a broken trajectory. The patient tries too hard to help the doctor, without understanding at the same time what is actually required of him. And how can you understand when from dental students, for example, you often heard the command “close your chewing teeth” (and the patients were neither doctors, nor even dentists)! Closure in a number of intermediate positions between the FBC and the PCC occurs during swallowing saliva (especially at night), chewing dense food, and parafunctional activity. At the same time, the lower jaw made of FBK can move without opening the teeth in 4 main positions and in countless intermediate positions between them. 4 main directions of movement: • Posterior (retrusion). • Anterior (protrusive). • Left side. • Right lateral. Backward movements of the lower jaw. The range of movements when moving the jaw from the FBK position to the ZKP is limited by the cusps of the antagonist teeth of the masticatory group. Of great importance are the angle of slip when changing position from the FBC to the ZCP, the length of the sliding trajectory and the groups of teeth in the area in which it occurs - these parameters should be assessed. Even more important is any unevenness in the trajectory of movement, since deviations in the movement of the lower jaw are involved in the formation of occlusal relationships. Movement of the lower jaw forward. The direction of movement of the lower jaw forward with closed teeth is usually set by the incisors. The exception is cases of open bite in the anterior region or class III incisor relationship. The angle and length of the trajectory of movements are entirely determined by the relationship of the incisors. For example, with a relationship according to class II, subclass II, with an increase in the depth of the incisal overlap, the lower jaw is forced to make an almost vertical movement before it is able to move forward. Limiting movements in the anterior region is very important when replacing anterior teeth. If the crowns of the teeth are preserved and have a normal shape, it is useful to reproduce the natural trajectory as accurately as possible.

movements, otherwise it is unnecessary and even harmful. Moreover, one of the goals of treatment may be to change the movement restrictions imposed by the anterior teeth. Moving the jaw to the side. In lateral abduction of the mandible, the side to which abduction occurs is called working, and the opposite side is called non-working. The non-working side is also sometimes called balancing, but since this term is also used to denote stabilization of the base of a complete removable denture, it is undesirable to use it in relation to the natural occlusion. On the working side, contacts can be located only in the canine area or cover a group of teeth. Sometimes the movement is also determined by individual pairs of chewing teeth, which cannot be considered an ideal option. If the trajectory of movement is mainly set by the canines, then this can be considered as a defensive reaction in relation to the teeth of the distal group, which at this moment open. On the non-working side there are normally no occlusal contacts. Sometimes contacts do occur - usually as a result of tooth extraction and dentoalveolar lengthening, and sometimes after orthodontic treatment, especially with the use of removable appliances, which makes it possible to tilt the chewing teeth. Contacts can also occur in posterior crossbite, which is characterized by the location of the lower chewing teeth outside the upper ones (buccally).