



QUESTIONS ABOUT IMPLANTATION. WHAT IS A GUM SHAPER?

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Abstract

A gum shaper or gingival cuff is a temporary element. It is installed in the implant during the final period of osseointegration (artificial root engraftment). A natural contour of soft tissues is formed around it. So the junction of the titanium pin with the mucosa looks natural.

The gum shaper is a short screw with a wide cylindrical cap, which is screwed into the implant for 1-3 weeks before installing the abutment and crown.

After tooth extraction, atrophy of the jaw bone begins (loss of bone tissue) in this place. It's not just hard tissues that suffer. Due to the decrease in bone volume, the attached (chewing) edge of the gum also decreases in volume, subsides. Without restoring the contour of the mucous membrane, it is impossible to get a beautiful smile, no matter how high-quality the implantation itself is.

To achieve the most natural smile, a gingival cuff shaper (FDM) is used. It plays several important roles in implantation:

Aesthetic. Reconstructs the natural volume of the periodontal. After installing the element, soft tissues begin to grow around it. Their size in width and height is restored. In the future, the gum will surround the artificial root in the same way as a natural tooth.





Protective

The formed parotid roller prevents the penetration of food particles, plaque, and bacteria to the neck of the implant. This reduces the risk of inflammation, which can lead to periodontitis and peri-implantitis - rejection of the titanium pin.

Preparatory work. At the final stage of implantation – prosthetics – a crown or bridge is installed. The orthopedic structure fits snugly to the gums. If the contour of the mucosa is formed correctly due to FDM, chafing, damage, bleeding of the mucosa are excluded.

Stabilizing. FDM supports gum resistance. Increases their strength. Normalizes the trophism of soft tissues. This prevents atrophy of soft and hard tissues. Sometimes the gum shaper is called a temporary abutment. But unlike an abutment, it does not serve as an adapter between a titanium screw (implant) and a crown. His task is different.

What is a gum shaper for?

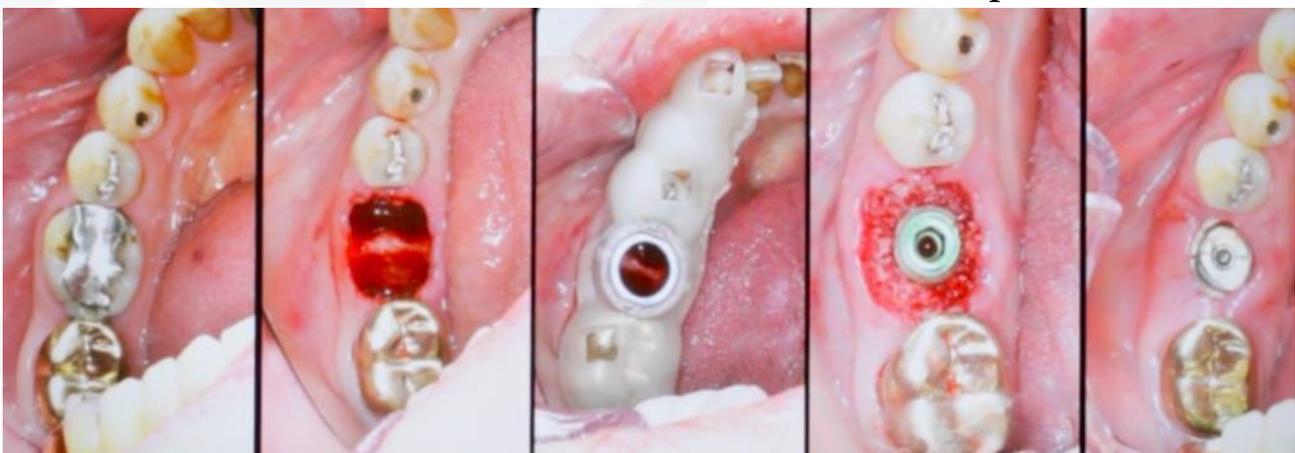
The purpose for which the gum shaper is installed on the implant is clear from its name – it is the formation of the correct contour of the gum, ensuring proper coverage, fitting of the gum implant.

A dental implant is a composite structure, it includes:

- titanium (or zirconium) screw, which serves as an artificial root,
- an abutment that serves as an adapter between the titanium screw and the crown,
- A crown that recreates the outer part of the tooth.

The titanium screw is screwed into the jaw bone and fuses with it, forming a solid monolith.

The abutment serves the correct distribution of loads on the implant.





A narrow groove with a thread is made in the center of the implant. An abutment is screwed into this recess, after which a crown is put on it, which is fixed with cement. But before installing the abutment, it is necessary to form the gingival tissue so that after the complete assembly of the structure, it looks like a natural tooth. The gum shaper serves this purpose.

In addition to aesthetic purposes, the gum shaper plays a preventive role. The tight fit of the gum prevents the penetration of bacteria to the implant, which can cause inflammation – peri-implantitis.

In which cases is it necessary to install a gum shaper?

The gum shaper is installed on the implant in two cases:

- with two-stage implantation,
 - for instantaneous or simultaneous implantation, when a titanium implant is installed immediately after tooth extraction, into the hole formed after its extraction.
- Two-stage implantation is still considered the preferred method of implantation, primarily for prosthetics of chewing teeth (molars, premolars). This technique provides faster osseointegration and higher rates of implant engraftment. The temporary crown used for single-stage implantation is not designed for chewing loads, which can be completely avoided. This means that it is experiencing loads that are transmitted to the implant and can lead to its loosening in the bone and prevent fusion with it or slow down this process.

What materials is the gum shaper made of?

As a rule, the gum shaper is made of titanium. It is a bioinert material that is not rejected and does not cause allergic reactions.

Titanium has a unique ability to fuse with bone tissue – this process is called osseointegration. This property has made titanium an exceptional material for the manufacture of dental implants.

In addition to the ability to osseointegration, titanium has other valuable properties – it is light, durable, and most importantly, bioinert. That's why titanium was used to make not only implants, but also abutments and gum shapers.

Another material with the same properties is zirconium dioxide. Unlike titanium, which looks like an ordinary metal, zirconium dioxide has a white color. Therefore, it is used in cases where the aesthetic factor is of great importance, namely, when implanting frontal teeth in the smile area.



What does the gum shaper look like?

1. The gum shaper is a screw with a cylindrical cap. The diameter of the cap corresponds to the diameter of the implant.

Thus, gum shapers can be wide or thin, depending on the thickness of the titanium implant.

2. Usually, straight shapers are used for dental implantation, but they can also be angular, and in difficult cases individual profiles are used.

3. According to the material of manufacture, the shapers are titanium or zirconium.

When is the gum shaper installed on the implant?

Before dental implantation, a complete sanitation of the oral cavity is performed. This means that diseased teeth must be healed, periodontal, periodontal, and gum diseases cured.

If bite correction is planned, orthodontic treatment should be performed before implantation.

Next, the doctor must make sure that there is enough bone tissue to securely hold the titanium implant.

For this purpose, an X-ray or CT scan (computed tomography) is performed.

Computed tomography has the advantage that, unlike X-rays, it shows not only the volume of bone tissue, but also its structure. If the bone is loose, it will not be able to hold the implant, even with a visible sufficient volume. Considering that it is possible to do without osteoplasty, the doctor may make a mistake and install an implant, which will then fall out.

If there is not enough bone tissue, its build-up is carried out with the help of osteoplastic material.

In a two-stage, classical implantation, a titanium screw is screwed into the jaw bone, on which a temporary abutment is put on, and the gum above it is sewn up.

A temporary abutment is not a gum shaper, but just a plug that prevents gingival tissue from sprouting inside the implant.

After the implant is inserted into the jaw bone, it takes time for it to take root and fuse with it into a single monolith.

The time of osseointegration depends on a number of factors:

- age (in old age, osseointegration takes longer),
- implant models,
- individual characteristics of the body.

Premium grade implants have a special rough, microporous hydrophilic surface that accelerates and facilitates implant engraftment. Due to this, the survival rates of such



implants as NobelBiocare, AstraTech exceed 99%, and the survival rate of Korean implants IPPO, Osstem, Denitum exceeds 97-98%.

After the doctor is satisfied that the implant has taken root, he cuts the gum, removes the plug and screws in the gum shaper instead.

If the purpose of the plug was to protect the implant from gum germination into it, then the purpose of the shaper is to ensure proper fitting of the gum abutment and crown.

The gum around the gum shaper is sutured. Now it should take time for the right soft tissues to form. It can take from 10 days to 2-3 weeks.

After the doctor is convinced that the goal has been achieved, he unscrews the gum shaper and screws it into the placement, on which the crown is fixed. This means the completion of the implantation.

The success of implantation depends on taking into account all individual characteristics and factors, including dental occlusion, features of the biomechanics of the maxillary system, the work of the temporomandibular joints and masticatory muscles. For this purpose, diagnosis is carried out by gnathological methods – condylography, articulator examination, telereöntgenogram, etc. This helps to eliminate factors that can prevent the implant from taking root, the correct formation of soft tissues, provoke the loss of the implant or the destruction of its crown.

In case of simultaneous or instant implantation, the implant is installed almost immediately after tooth extraction. This avoids bone re-drilling, because the implant is installed in the hole of the removed tooth.

In this case, the gum shaper is installed simultaneously with the implant. After complete healing and achieving proper fit with soft tissues, the shaper is removed and an abutment with a crown is installed in its place.

What should I do if the gum shaper falls out?

The gum shaper is screwed into the implant. If it fell out, it means that the screw connection turned out to be unreliable.

The reason for this may be a defect in the thread, poor-quality production.

Another possible reason is the implant's too deep fit, which caused bone overgrowth, which prevented the complete screwing of the shaper and the tight fit of its cap.

If the gum shaper falls out, you need to consult a doctor who performs the implantation. You should not try to solve this problem yourself.

The doctor will find out why the gum shaper fell out and install it so that this problem does not happen again.



What to do after installing the gum shaper

In order for the gum formation process to pass without complications, quickly and correctly, it is important to follow several rules.

For the first 3-4 hours after installing the gum shaper, you should refrain from eating. Coarse, dry, hard, dense food should be avoided throughout the formation of the gum. The food should be neither too hot nor too cold, soft, preferably semi-liquid or liquid, puree-like.

Smoking and alcohol should be avoided (at least for the first few days after installing the gum shaper).

For the first 3-4 days, it is recommended to make oral baths with a weak solution of furacilin, chlorhexidine, and miramistin.

It is recommended to use a soft bristle brush to clean your teeth.

Excessive physical activity, baths, saunas should be avoided.

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