

# Implantation as a Tool for Personalized Medicine: From Genetic Compatibility to Adaptive Technologies

**Mamatkulov Farkhodjon Khusenovich**

**Khazatov Alisher Isamiddinovich**

PhD, Associate Professor

**Abstract:** Do you want to have a beautiful smile and healthy teeth? Don't wait any longer! Modern methods of dental implantation quickly and painlessly restore missing teeth and strengthen your jaw. Modern methods of dental implantation are an effective replacement of missing teeth with new non-removable structures for prosthetics on installed implants. They preserve the functionality and visual aesthetics of the teeth. Prosthetics on implants and the installation of artificial titanium pins are performed using the least traumatic and reliable, safe and convenient methods. Modern technologies of dental implantation allow for recovery in the shortest possible time.

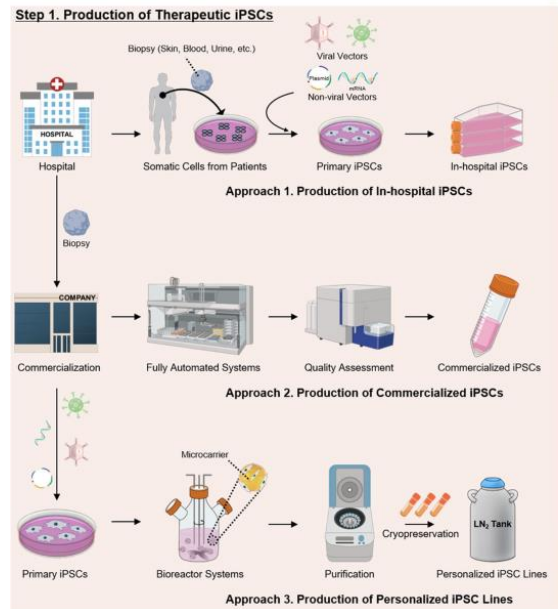
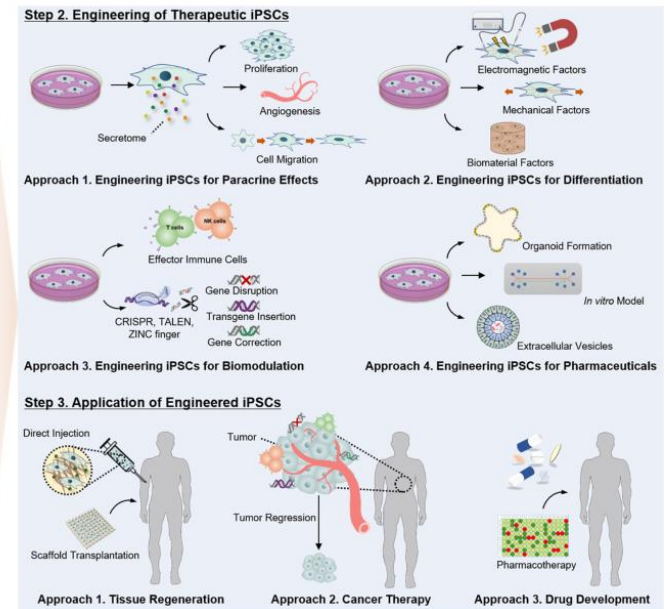
**Key points:** Implantation, advantages of modern implantation, convenience, compatibility.

## **Introduction:**

Our dentists use minimally invasive treatment methods to reduce rehabilitation time and make the recovery period more comfortable for the patient after the installation of implants and dentures. Low-traumatic methods of implant placement use laser and puncture methods to eliminate stitches and the associated discomfort.

Implant and denture installation can be done in one step, so you can get new teeth literally on the day of your visit to the clinic. Crowns and dentures are made directly in our own laboratory at the dentist's office, so we keep the cost of treatment low. Any work performed by doctors is covered by a guarantee. Implants have manufacturer's certificates and a lifetime guarantee of several decades.

The clinic has a high rating and is equipped with special medical microscopes and modern digital equipment, which helps to model the layout of the future smile at the preparatory stage, and also allows you to create a surgical template, thanks to which you can calculate for yourself. go ahead with the operation and save the patient's time. Thanks to modern equipment, it is possible to calculate, visualize and see the result of prosthetics even before the start of treatment. You can find out the prices in the relevant section of the website or by phone at +7(495)159-81-74.

**I. Production and Automation of iPSCs for Personalized Medicine****II. Engineering Strategies of iPSCs for Personalized Medicine**

All of the above methods are indicated for single and multiple missing teeth. The most important thing is to follow all the recommendations of an experienced treating doctor, who will select the most appropriate methods and types of surgical interventions to obtain the highest quality turnkey treatment with a guarantee of a good result.

**Modern methods of indications and contraindications**

Indications for modern implantation

One or more teeth are missing

Instructions for tooth extraction (implants can be removed and placed in one step)

Progressive resorption of jaw tissue

Contraindications to wearing removable dentures

Total edentulism (absence of all teeth)

Contraindications to modern implantation

Oncology and chemotherapy (installation of implants is possible after one year of remission)

Blood diseases that affect blood clotting (requires the opinion of a specialized doctor)

Mental disorders affecting the doctor-patient relationship

Severe somatic diseases (requires a conclusion from a specialized doctor)

Pregnancy 1 trimester and lactation period (implants can be installed after the end of breastfeeding)

Infections during exacerbation of the disease (implant placement is performed after treatment)

Chronic diseases in the acute stage (implant placement is performed after treatment)

Advantages of modern implantation

Stopping the process of jaw bone atrophy by installing implants.

Immediate restoration of chewing load is guaranteed.

To get rid of digestive problems due to the inability to chew food well.

Proper distribution of chewing load and healthy use of remaining teeth.

Restoration of the bite (the prosthesis also restores its height), reducing the load on the temporomandibular joints, restoring the oval of the face, smoothing nasolabial folds.



By template

The dental specialist creates a dental surgical template based on a 3D model of the oral cavity, and the implantologist pre-calculates the best algorithm for the operation. In fact, this method allows the doctor to perform a training operation on a model of your jaw. In the clinic, the template is included in the turnkey price for dental implants.

### **HD consulting and diagnostics**

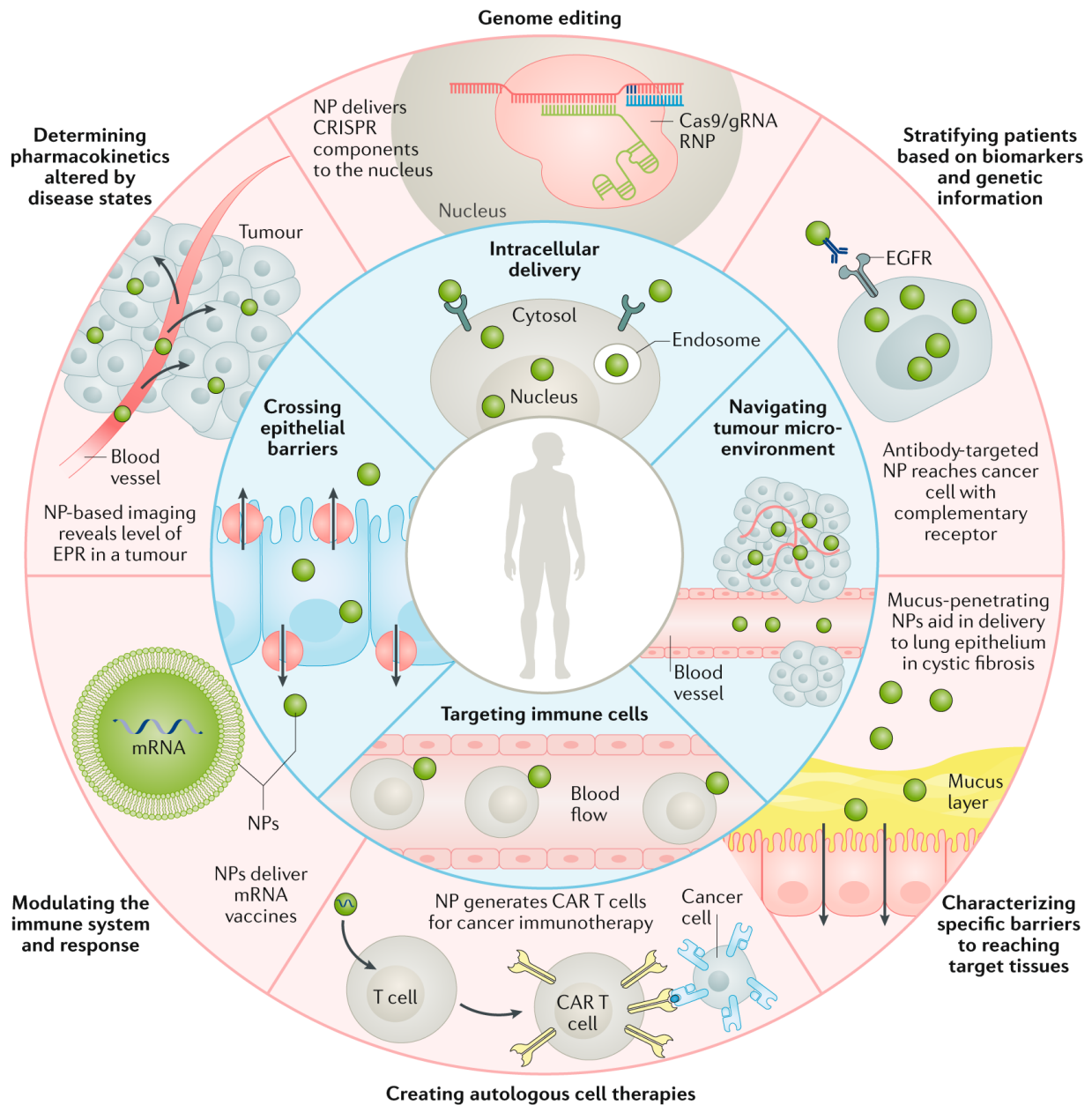
At this stage, the patient is examined, a computed tomography scan is performed, a photo protocol is taken for a visual assessment of the clinical situation, the appropriate technology for dental implantation is determined, and the prosthetic method is discussed. A complete visual examination and a detailed survey are carried out to obtain anamnesis. This is necessary to identify possible contraindications and create a clear clinical picture. Also, before implantation, the patient must undergo a general blood test (standard tests for a fee at the district polyclinic or any diagnostic center under the compulsory medical insurance policy). The diagnostic stage, including computed tomography and all examinations by doctors in our clinic, are free of charge.

### **Preparation**

Then a step-by-step treatment plan is drawn up, which records all the costs of future procedures and methods of their implementation, methods of installing dental implants and types of prostheses. If necessary, professional oral hygiene is performed. In case of bone tissue deficiency, its directed regeneration is performed - osteoplasty, which can be combined with implantation in one stage, which gives good results and guarantees the installation of the implant in a situation where there is a deficiency of bone tissue. volume. In addition, a 3D scan is performed before treatment to create a 3D model. The specialist uses the program to simulate the expected result of the treatment: he creates a surgical template and a model of the future adaptive prosthesis.

### **Implantation**

At this stage, implants are installed according to the selected protocol: two-stage, one-stage or one-stage. In the two-stage protocol, the patient receives the implants, the plug is installed, the gum is sutured and the operation is completed. Prosthetics occurs in a separate stage after the integration of the root systems into the jaw: after 3-6 months. Using the one-stage protocol, loading with a prosthesis is possible immediately: on the day of implant placement or within 1-3 days after it. Any implantation is performed using local anesthesia and lasts from 20 minutes to 3 hours (with full dentition). In some cases, implantation is combined with bone tissue augmentation using bone material. Full integration of implants takes about 3-6 months.



## Prosthetics

The type of prosthesis installed depends on the implantation protocol. With single-stage implants, crowns or dentures are installed on the day of surgery, which are recommended to be worn no more than a year after implant placement; Adaptive complete dentures with complex solutions are included in the treatment price. Permanent crowns and dentures are installed after the implants heal and are made of zirconium, metal-ceramic, etc. For two-stage implants, adaptive dentures are used, which are recommended to be worn during the 3-6-month implant healing period, to shape the bite, as well as aesthetics. After the osseointegration period (after 3-6 months), the denture can be replaced with a permanent denture made of any suitable material.

## Rehabilitation

The recovery period after implant placement lasts approximately 3-6 months. How long does it take for the implant to fully integrate into the jaw? Discomfort is possible only in the first 10 days after the installation operation, when the primary swelling subsides and adaptation to the new prosthesis occurs. At this stage, in order to achieve a good long-term result, it is necessary to follow all the doctor's recommendations and in the first days do not perform excessive chewing loads with very hard food, do not allow pressure changes, jaw injuries, do not engage in active activities. do not play sports, do not visit baths, saunas, swimming pools, and also do not consume alcohol

excessively. Preventive appointments during the rehabilitation period are included in the cost of implantation.

### Care

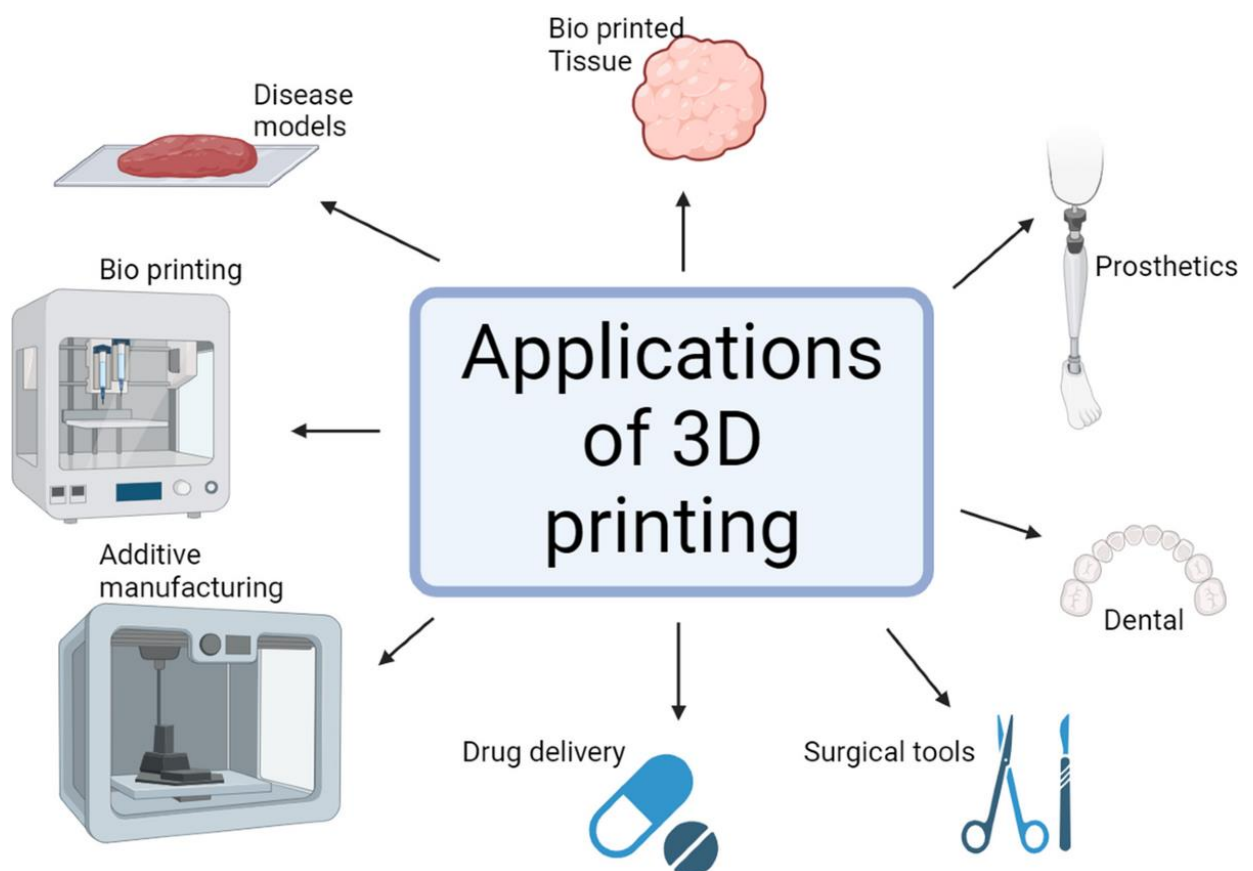
Regular oral hygiene will determine how long your dentures or crowns will last. Implants themselves are so reliable that there is no limit to how many years they can be used; however, it is important to visit your dentist regularly for professional cleaning of your dentures at least once a year. If all recommendations are followed, your new teeth can serve you for many years.

The technology allows not to separate the implantation and tooth extraction operations in time, thereby saving two to three months for the hole to heal and reducing the risk of rejection. Simultaneous implantation is used in the absence of inflammation and infection of soft tissues and with careful tooth removal without damaging the bed. The essence of the method is to install the implant in a new socket immediately on the day of removal of the old tooth. If inflammation is detected at the top of the tooth root, implants cannot be installed, which is immediately determined at the diagnostic stage;

The main advantage is fewer surgical interventions, less tissue damage, and improved prosthetic efficiency when installing dental implants.

### Two-stage classic dental implantation

This restoration method ranks first in the ranking of implant methods and includes the following stages: implant placement and only then permanent prosthetics after their final sealing. At the same time, a non-removable prosthesis or crown refers to orthopedic structures that are permanent and not flexible. This method is quite long and takes about six months to complete the work. However, it reduces the risk of implant failure and allows gum tissue to recover, which affects the stability and durability of your new tooth and the aesthetic component. The prosthesis on the implant will be as similar as possible to your natural tooth and will last as long as possible.



## One-stage dental implantation

It has undoubted advantages in the form of speed of problem solving. And after a few days it will allow you to have a full set of teeth.

In dentistry, a temporary prosthesis or crown is installed on the same day as the titanium root is installed. It performs all the necessary functions and can withstand daily stress on the surface, like a normal healthy tooth. In particular, it is recommended to install a crown or prosthesis as a separate stage 3 days after the implant is installed. If you choose this method, you do not have to wait for the root part of the implant to completely heal, you will get a long-term adaptive prosthesis in one stage with the implant. And until the permanent prosthetics are made, the temporary structure performs both the cosmetic and functional functions of the tooth. Fully adaptive prostheses are included in the price of installing one-stage implants.

Of course, if you choose this path, you should initially treat the structure carefully and not load it with solid food. If the patient does not follow the recommendations, the warranty does not apply. And, of course, if you need long-term treatment of a damaged tooth bed, this technology is not suitable for you.

The technology takes only 1-3 days to apply, and dentistry with its help will help you achieve a healthy smile in the shortest possible time. You can immediately smile openly and chew, but you should not increase the chewing load for the new crown. Although the prosthesis copes well with the increased load, the root part has not yet taken root in the jaw.

### List of used literature:

1. Asrorovna X. N., Muzaffarovich M. S. CLINICAL STUDY OF THE EFFECTIVENESS OF MODERN ANTIVIRAL DRUGS FOR THE TOPICAL TREATMENT OF PATIENTS WITH HERPES SIMPLEX LIPS //European International Journal of Multidisciplinary Research and Management Studies. – 2024. – T. 4. – №. 02. – С. 301-304.
2. Asrorovna K. N. et al. Periodontal Tissue Changes in Patients with Diabetes //EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE. – 2024. – T. 4. – №. 2. – С. 74-77.
3. Xolboeva N. et al. PATHOLOGICAL CHANGES IN THE ORAL MUCOSA IN DIABETES MELLITUS //Science and innovation. – 2023. – T. 2. – №. D12. – С. 493-496.
4. Xolboeva N., Murtazaeva Z., Shukurova M. CHANGES IN THE ORAL MUCOSA IN TUBERCULOSIS //Science and innovation. – 2023. – T. 2. – №. D12. – С. 76-78.
5. Холбоева Н. А., кизи Усмонова М. И., угли Бахтиёров М. А. ILDIZ KANALLARINI KIMYOVIY MODDALAR BILAN MEKANIK ISHLOV BERISH VA KENGAYTIRISH //Евразийский журнал медицинских и естественных наук. – 2022. – Т. 2. – №. 5. – С. 186-188.
6. Asrorovna X. N., Ugli J. O. M., Ugli K. S. F. THE MAIN CLINICAL FEATURES OF THE ORAL CAVITY OF PREGNANT WOMEN SUFFERING FROM GINGIVITIS //European International Journal of Multidisciplinary Research and Management Studies. – 2023. – T. 3. – №. 10. – С. 258-262.
7. Xolboeva N., Murtazaeva Z., Safoeva S. PATHOLOGICAL CHANGES IN THE MUCOUS MEMBRANE OF THE ORAL CAVITY IN DIABETES //Science and innovation. – 2023. – T. 2. – №. D12. – С. 72-75.
8. Asrorovna K. N., Davlatmurodovich E. K. Changes of Dental Hard Tissue in Diabetes Mellitus //EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE. – 2024. – T. 4. – №. 3. – С. 33-37.
9. Asrorovna K. N., Melidior R. MODERN INTERPRETATION OF THE CHANGES AND TREATMENT OF THE MUCOUS MEMBRANE OF THE ORAL CAVITY IN

- TUBERCULOSIS //EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE. – 2024. – Т. 4. – №. 2. – С. 475-480.
10. Asrorovna X. N., Muzaffarovich M. S. IMMUNOLOGICAL INDICATORS OF VIRAL INFECTION IN PATIENTS WITH LICHEN PLANUS OF THE ORAL MUCOSA //European International Journal of Multidisciplinary Research and Management Studies. – 2024. – Т. 4. – №. 02. – С. 305-308.
  11. Xolboeva N., Xaydarova D. PROVISION OF THERAPEUTIC DENTAL CARE AND PREVENTIVE MEASURES DURING PREGNANCY //Science and innovation. – 2022. – Т. 1. – №. D6. – С. 179-181.
  12. Asrorovna X. N. et al. Methods Of Instrumental Treatment of Root Canals //Texas Journal of Medical Science. – 2021. – Т. 2. – С. 17-19.
  13. Asrorovna H. N., Badriddinovich T. A., Kizi T. K. F. Evaluation of the effectiveness of non-invasive methods of treatment of periodontal tissues in violation of glucose hemostasis. – 2021.
  14. Муратова С. К. и др. ЭФФЕКТИВНОСТЬ ПРИМЕНЕНИЯ ИММУНОМОДУЛЯТОРОВ В ВОСПАЛИТЕЛЬНЫХ ЗАБОЛЕВАНИЯХ СЛИЗИСТОЙ ОБОЛОЧКИ ПОЛОСТИ РТА //АКТУАЛЬНЫЕ ВОПРОСЫ СТОМАТОЛОГИИ. – 2019. – С. 152-154.
  15. Asrorovna K. N. Changes in the Mucous Membrane of the Oral Cavity in Leukemia //EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE. – 2024. – Т. 4. – №. 2. – С. 316-319.
  16. Asrorovna H. N., Muhridin B., Shohruh L. Change of Oral Mucus in Patients with Diabetes //Eurasian Medical Research Periodical. – 2022. – Т. 15. – С. 51-55.
  17. Холбоева Н. А., Хайдарова Д. М. МЕХАНИЧЕСКАЯ ОБРАБОТКА И РАСШИРЕНИЕ КОРНЕВЫХ КАНАЛОВ ХИМИЧЕСКИМИ ПРЕПАРАТАМИ (ЭНДОЛУБРИКАНТЫ) //Вестник науки и образования. – 2022. – №. 4-1 (124). – С. 88-92.