



Implant-supported Denture Procedure

INFORMATION SHEET

Implant-supported denture procedure (placement of implants)

Implants, which are a proven, reliable solution, have become a common treatment option. Available treatment options for patients who have lost of all their teeth has expanded considerably in recent years. Implants are currently no longer the exception. When used under the right conditions by practitioners with expertise in surgical, prosthetic and occlusal techniques, implants provide acceptable medium- and long-term results. Prosthetic dental implant rehabilitation is an interesting option that is more stable and functional for patients than traditional solutions.

Prior to implant placement

First of all, it's important to point out the therapeutic goals of dental prosthetics: restore functions affected by the loss of teeth, namely, occlusion (bite), appearance, pronunciation, chewing, swallowing, connections between the jaws, preservation of the remaining anatomical structures where the prosthesis is being placed, and the patient's physical and psychological comfort. It is also important to not only restore these functions but maintain them in the long term.

Workup prior to implant placement

A workup is an essential preliminary step when providing any treatment. This involves assessing the initial condition of the mouth and formulating the treatment decision. The purpose is to check for any general conditions based on medical history which may interfere with the surgical plan or flag a contraindication. The preimplant workup involves a medical examination, complemented by a clinical examination and X-rays and impressions. In terms of function and appearance, the clinical exam is important for establishing the degree of difficulty. X-ray exams are vital for assessing pre-implant conditions and monitoring osseointegration (fusion between the bone and implant).

In some situations, implants are **not possible**, so those situations must be strictly ruled out. These situations may be:

• **medical:** weak immune system, systemic disorder, major allergies, high-risk medical treatment (e.g., anticoagulant),

certain heart disorders (heart valve disease) or progressive disorders, are absolute contraindications;

- **anatomical:** quality of gums, bone density and structure, location of inferior dental nerves, sinus volume
- **patient-specific:** lack of understanding of the implications for follow-up, neglect, poor hygiene and low motivation are contraindications

All factors should contribute to an optimal result, and all this information helps the practitioner suggest a specific solution. Lastly, implant procedures require a practitioner with appropriate training and a patient with committed discipline.

Potential choices

Depending on the patient's overall health, they can choose from different implant-supported device options, which may be fixed or removable. There are advantages and disadvantages associated with each option, for the upper jaw (maxilla) and lower jaw (mandible).

Prosthesis retained with two implants plus:

• a snap-in attachment (locator) (Fig. 1a). With this model, the overdenture snaps into place on the implants. The two implants are then placed in the anterior (front) part of the lower (or upper) jaw. The overdenture can be removed and the patient is responsible for maintaining it. This option provides superior stability and retention to a traditional denture because the implants are anchored in the bone, but it is slightly inferior to other implant devices. Ball abutments still allow for slight movement of the device which may be a disadvantage for some patients.



• a straight-bar (or continuous-bar) attachment (Fig. 1b). The operation consists of placing two implants in the anterior part of the upper or lower jaw and connecting them with a straight or continuous bar. The overdenture prosthesis is fully removable and can be taken out by the patient. The bar has an axis of rotation to move the prosthesis up and down. Over time, this movement may place major stress on the implants and their components.

Device supported by four or five implants and a bar attachment (Fig. 2)

By adding an additional two implants, this device has even more retention and stability than the two-implant device. This device is also removable and the patient must be vigilant when cleaning so as not to cause inflammation to the gum around the implants.



Fixed prosthetic device using four or five implants (Fig. 3)

This denture, known as a "denture on stilts" is specifically indicated in the lower jaw in cases of heavy resorption and hypersensitivity of the gum, because the prosthesis does not come into contact with the gum. Having this prothesis on the upper jaw is also a possibility. It is entirely fixed and can only be removed by the dentist. It is highly stable and very similar to natural teeth, in terms of stability and retention. Cleaning under the prosthesis is slightly more difficult.

These various treatment choices provide patients with varying degrees of satisfaction in terms of stability, retention, chewing and esthetics.



During osseointegration

In the period after implant placement, the goal is to allow optimal bone healing. Depending on the jaw (upper or lower) and bone quality, this waiting (healing) phase may last two to six months. During this period, the patient wears their traditional denture which the dentist has previously adjusted to the implants using a supple material, so as not to injure the patient and to ensure proper chewing ability. The material should be changed as needed.

After implant placement

After placement of the implant-supported denture, several items need to be monitored.

- **Risks:** temporary numbress (paresthesia) of the lower lip.
- **Failures:** implant mobility. In the short term, this refers to "non-osseointegration" of the implant, meaning a lack of fusion between the bone and implant. In the medium and long term, the implant is rejected, resulting in slow resorption (destruction) of the surrounding bone.
- **Complications:** complications may develop at all stages of treatment and represent a large proportion of all complications observed in implantology. This mainly involves:
 - 1. fractured implant, a major complication which requires it to be removed and replaced with a new implant; fortunately, this is uncommon.
 - **2.** loosening of one or more of the device tightening screws or abutment screws, which may even break, making removal sometimes tricky.
 - **3.** broken device or other breakages associated with retention parts which may occur, leading to additional costs.
- **Hygiene:** issues around maintaining good gum health are essential for the durability of implants. Poor hygiene and buildup of bacterial plaque quickly cause an infiltration under the gum and cratering around the implant. Generally, the gum diseases encountered develop late and mimic the forms of gingivitis and periodontitis observed around natural teeth.
- **Follow-up:** as with all other treatments, proper post-treatment follow-up is important. Lack of regular follow-up may lead to complications or failure of the prosthetic treatment. The implant-supported device needs to be checked by the dentist and changed as needed because it experiences wear and tear and ageing, just like a traditional denture.

I gave this information sheet to patient (name):

Date:

Dentist's signature:

Please note that the scientific content in this sheet was reviewed and adapted in line with scientific knowledge and recognized best dental medicine practices at the time of publication (January 2024).