

# Dental implants - home-care is key!

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**Dental implants are now routine therapy in many dental practices and studies support the use of titanium implants and implant supported prosthesis as a predictable treatment for partially edentulous and fully edentulous patients. The success or failure of dental implants relies on four important factors; proper placement, proper occlusion with the prosthetic restorations, the patient's home-care and safe implant maintenance by a dental professional. This article is focused on understanding implants; implant placement and prosthetic restorations, and current home-care protocols to equip you with the knowledge to confidently care for patients with implant prosthetic restorations.**

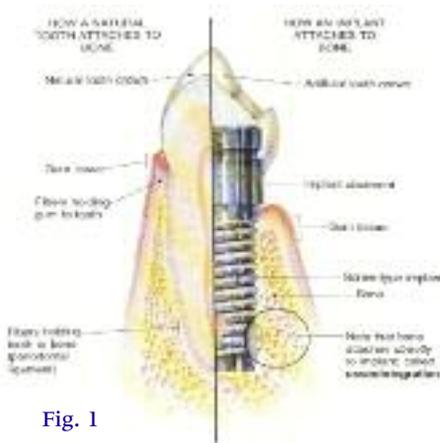


Fig. 1

## Implants

A fundamental understanding of dental implants, accompanied by the verbal skills to talk to patients, and a basic clinical knowledge about how they are placed, is essential for implant therapy success. A dental implant is a device that is surgically placed into the bone in the oral cavity and categorized into three

groups; transosteal, subperiosteal and endosteal design. A transosteal or staple implant is a titanium plate with five to seven parallel posts or dowels, two of which protrude through the mandible and function as abutments for an overdenture. Subperiosteal implants are custom casted of surgical grade metal or alloy framework and lay on top of the jawbone, used when there is not enough bone to place an endosteal implant and are used specifically for overdentures. Endosteal, the most commonly placed implant, is generally made of titanium alloy and replaces the root of the tooth. They can be cylindrical or root-form and come in many different sizes, lengths, and shapes.

Endosteal implants are placed in the bone, an abutment is attached to the implant and the prosthesis is then positioned. Alternatively, one-piece endosteal implants are available that do not require placement of separate abutments.

## Communication skills

As dental hygienists and therapists we need to attain the verbal skills to discuss with patients the risks, benefits, and alternatives to replacing missing teeth with dental implants. These skills truly help patients to better understand their role, responsibility, and treatment options to make informed decisions about their long-term oral health.

The success rate varies depending on many factors such as occlusion, health of patient (e.g. smoker), or poor placement. The alternatives to implants, traditional tooth replacement therapy (bridge, partial, or denture), do not compare with the longevity, improved function, and most of all, patient psychological results that implants offer. The 10-year survival rate is 75% for a fixed prosthesis on

natural teeth with decay.<sup>1</sup> Implants and implant-supported prosthesis can boost a 90% plus survival rate.<sup>2</sup> Another key point to discuss with patients is the effect of bone loss in the first year following extraction. There is a 25% decrease in width and an overall 4mm decrease in bone height during the first year after extractions for immediate denture.<sup>3</sup>

Furthermore, an implant replicates a natural tooth by replacing



Figure 2a. Subperiosteal implant



Figure 2b. Transosteal implant



Figure 2c. Endosteal implants

the crown and the root, and in the presence of a tooth or implant, force is transmitted to the surrounding bone, which stimulates and helps maintain the bone. Continued bone loss can lead to severe bone loss levels; the patient may be unable to wear dentures because they put pressure on the nerve bundle causing pain. Bone needs to be stimulated to be maintained, by transmitting force to surrounding bone when in occlusion.<sup>4</sup> Therefore, implants maintain and increase bone density, preserving facial structure. Other benefits of implants and implant-supported prosthesis include enhanced appearance, restoration of normal eating, and improvement of removable denture retention. Single implants replace teeth without the need for a bridge that may involve preparing virgin or minimally restored teeth.

### Dental endosteal implant placement

The outline below is a basic step-by-step process to help the dental team explain to patients the surgical treatment involved in dental implant placement.

1. The surgeon prepares the implant site by removing just enough bone – the osteotomy (a site prepared in bone for the placement of dental implant or graft)
2. Implant(s) or abutments are placed by threading or tapping into the bone
3. Over a period of several months, the implants will osseointegrate (the direct and intimate contact between living bone and the dental implant surface)
4. The implants are restored with a crown(s), a bridge, fixed hybrid or removable overdenture

### Restorations and prosthesis

Implant prosthesis can vary depending on the patient's needs,



Figure 3a: Single crown/bridge implants



Figure 3b: Full arch crown/bridge implants

bone, and expectations. Implant prosthesis can involve one single crown, cemented or screwed to the abutment of the implant to replace one or multiple teeth, or a single bridge, or bridge attached to multiple implants up to an entire arch, referred to as full arch cemented or screwed implants.

Multiple implant treatment options are available for edentulous patients. A removable lower overdenture with 2-4 abutment implants is now considered 'standard of care' in many parts of the world for lower edentulous patients. Implant abutments alone, or attached to a Hader Clip bar, support an overdenture that is removable, or are attached to a fixed hybrid/high water bridge. A fixed hybrid, also called a high water bridge, is a thinner overdenture, removable only by a dentist or hygienist, with the advantage of teeth and tissue plus

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**Acknowledgments:** Figures 2a, 4b, 5a and 5b are courtesy of Dr. Robert Schneider, DDS, MS University of Iowa Hospitals and Clinics Div. of Maxillofacial Prosthodontics. Figures 3a & b and 4a are courtesy of Salvin Dental Specialties

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stability. Advantages for all implant retained overdentures for edentulous patients are that facial features are maintained as well as increased stability, improved speech, aesthetics and function.



Figure 4a: Implant hader clip bar to support lower overdenture



Figure 4b: Fixed lower hybrid

### Implant home care

A daily meticulous home-care routine is essential for the long-term success of implants. A simple, easy to follow protocol should consider the type of implant prosthesis and the patient's dexterity. Home-care begins immediately with post-surgical guidelines to maintain a healthy field and to initiate healing.

### Post-surgical home-care

- Drink only clear liquids for the rest of the day
- Take antibiotics and pain medication as prescribed and recommended
- Eat soft foods for the first few days of healing
- Avoid wearing a temporary prosthesis or denture to let the gum tissue heal (if the implant was not immediately loaded)
- Use an extra-soft toothbrush to clean the dentition, pre-existing implants and the gum tissue (do not

- brush the surgical, incision area)
- Use salt-water rinses or an antiseptic rinse if prescribed or recommended

### Oral care for single-tooth implants

Meticulous oral hygiene is even more critical for an implant than a natural tooth. The biological differences between an implant and a natural tooth make the implant more susceptible to inflammation and bone loss from bacterial plaque.<sup>5</sup>

- Brush twice daily with a low-abrasive dentifrice
- Floss once daily (mesial/distal and facial/lingual)
- Use a rubber-tip stimulator once daily
- Use an antimicrobial rinse if inflammation is present
- If recommended, use of a water irrigation unit (not metal-tipped)

Oral care for single-tooth implants involves a number of steps. The patient should brush the implant(s) twice a day with a low-abrasive dentifrice, brushing as one would natural teeth to remove bacterial plaque. Using a low-abrasive dentifrice ensures that it will not scratch the surface or irritate the tissue cuff surrounding the implant.<sup>6</sup> A soft toothbrush should be used – options include a manual brush, electric or sonic battery toothbrush. Interdental or end-tuft brushes can be used to clean around single implants, full arch implants, under a Hader bar or fixed



Figure 5a: Interdental brush under fixed hybrid



Figure 5b: Interdental brush under and around bar retained implant

hybrid/ high water bridge. Interdental or end-tuft brushes can also be used to clean hard-to-reach implants and around locator or ball implant abutments.

Instruct the patient to floss once a day on contact points (mesial and distal) and it is also recommended to loop the floss around the implant on buccal and lingual surfaces to ensure all the plaque is removed. (See figure 6).

There are many types of floss on the market and generally a single-tooth implant can be flossed with the patient's regular floss. Alternatively, implant floss can be used (e.g., Thornton's bridge and Implant Interdental floss). For bar-retained prostheses or wider interproximal spaces, thicker floss or one with a built-in threader (e.g., Oral-B® Super Floss; Butler® Postcare) is recommended.



Figure 6: Flossing fixed hybrid / high water bridge

Anti-microbial rinses may be recommended one to two times daily, especially if inflammation is present, the patient has dexterity problems, or has an area that is difficult to clean. If the patient is prone to inflammation, the use of chlorhexidine gluconate or another anti-microbial rinse, in conjunction with a water irrigation unit is recommended.<sup>7</sup>

### Oral care for fixed hybrid/ high-water bridge or full arch

- Brush twice daily with low-abrasive dentifrice
- Floss once daily
- Optional, a water irrigation unit can be used twice daily

Water irrigation units (e.g., Hydro Floss®, Water Pik® Ultra) can be beneficial if used one to two times daily following proper instruction to ensure that the perimucosal seal is not

damaged. Direct the water  $\frac{1}{4}$  inch from flat surface of teeth interproximal, horizontally, and on a low setting to avoid damaging the perimucosal seal. This is helpful especially if inflammation is present, difficult area to clean, or dexterity problems are present. Also an anti-microbial rinse can be added in a 1:10 water dilution in the water irrigation unit.



Figure 7a: Plaque retained bar implants



Figure 7b: Overdenture clip and O-Ring attachments

### Oral care for overdentures

Start by instructing the patient to remove the overdenture for care. Home-care for the ball, locator, or bar-retained implant abutments is the same as single-tooth implants.

- Brush twice daily with a low-abrasive dentifrice
- Floss once daily
- Use an antimicrobial rinse if inflammation is present
- If recommended, use of a water irrigation unit (not metal-tipped)

The overdenture should be soaked in denture cleaner for the recommended time and a denture brush used to clean the underside, while being careful not to damage the bar-and-clip system or O-ring if present. Remove the overdenture from the cleaner and rinse with water and

anti-microbial rinse.

### Summary

Keep it simple! Have an understanding of dental implants, placement and restorations with the communication skills to speak to patients in a confident manner. Motivate and educate patients using the current guidelines for home-care

and the importance of proper in-surgery implant maintenance appointments for long-term oral health.

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