ClearCare Periodontal & Implant Centre

Perio-Prostho Corner Did You Know...

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...how many implants are enough when restoring a complete arch?

Restoring a full arch with an implant supported restorations presents a number of diagnostic considerations. All of which have to be addressed before surgical treatment begins.

Here are some variables worth considering:

1. **Which arch are you restoring?** There can be significant differences in bone quality and quantity between maxillary and mandibular bone. Usually maxillary bone is less dense and has little cortical shell. Anatomic differences also need to be considered. The maxilla has sinus that can challenge implant site selection and the mandible has the mandibular nerve. After tooth loss, the physiological stimuli that give mechanical and cellular maintenance to the alveolar bone disappear. As a consequence, there is bone atrophy. The amount and rate of bone atrophy is different between maxillary and mandibular arch.

2. **What is the number and distribution of teeth in the opposing arch?** It is important to assess the plane of occlusion to ensure that there is enough restorative space. In addition, the number of implants placed should reflect the anticipated forces from the opposing arch. An opposing arch with a full complement of teeth will exert far greater force than an edentulous opposing arch. Also, be aware of uneven distribution of teeth in the opposing arch (all on one side, all in the anterior with no posterior teeth) that can create destructive cantilever and should be considered when selecting position or the number of implants needed.

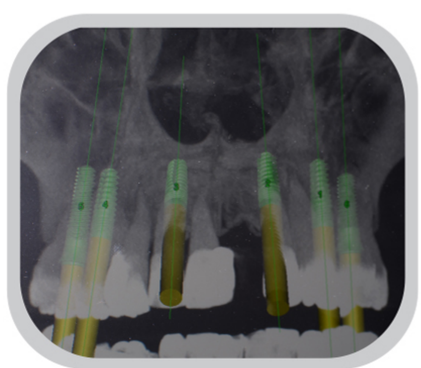
3. **Does the patient grind and/or clench their teeth?** Parafunctional loads can far exceed normal bite forces and parafunction can influence the number and distribution of implants considered. It can also affect the amount of cantilever to be developed.

4. **What is the number and distribution of potential implant sites?** Frequently, anatomic considerations will limit the placement of implants to the anterior portion of an arch. This can create the potential for significant anterior cantilever segments in the implant supported restoration. The maximum recommended distal cantilever is 1 ½ x A-P spread. AP spread is defined as the distance between a line connecting the most distal implants and a line connecting the most anterior implant.

5. **What type of restoration is planned?** The type of restoration can influence the number, position and distribution of the implant sites required. Crown and bridge restorations will require more precise implant positioning and most likely will require more implants than a hybrid style. Occasionally, implant position, angle and location will dictate that only a bar/overdenture can be constructed for the arch to be restored. A screw retained “hybrid” style restoration can be constructed with an internal metal skeleton and denture teeth (allowing for the plastic teeth to wear down over time and reducing the stresses transferred to the implants. Monolithic zirconia restorations are more durable but have higher lab fees and are not as easily serviced in the future.

6. **Better safe than sorry!** Implants can fail. If you only need 4 implants to restore a lower arch, you might want to recommend 5 implants. An “extra” implant can be done at a reduced fee as a back of for a rainy day.

Dentistry is a **“one size fits one” endeavour**. Tailor your treatment to the patient you have and not to the ideas presented by the manufacturer. Before you start a complex implant treatment, it is recommended to take a CBCT, do virtual treatment planning in an available software and construct the appropriate surgical guides. If immediate provisionalization is planned, order the necessary denture and prepare any supportive procedure in advance. There is no substitute for thoughtful treatment planning.



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