

Dental Implantation

Prepared by Dr. Kristin Domike

History

- Egyptians secured teeth to jawbone with gold wire
- Days of Amer. Revolution seamen were attacked in darkened waterfront areas and their teeth extracted, to be implanted in mouths of wealthy gentry
 - These were lost quickly due to body's immune responses
- Early 20th century, circular gold and platinum cribs implanted as artificial dental roots, where porcelain teeth were attached.
- Later, Vitallium cast in shape of self-tapping wood screw allowed alloy screws as free-standing implants. One reported survived > 20yr.
- After 1950s first modern-day endosteal (bone formation where ossification takes place within cartilage) root-form implant technique was discovered.
- This was improved upon, but there were not all patients who could be helped because of atrophy after tooth loss (thinning of the posterior alveolar ridge)

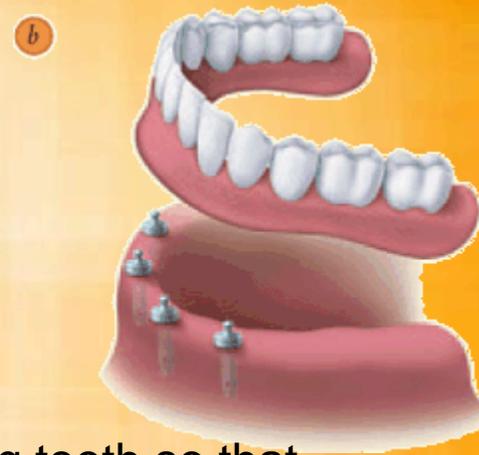
Dental Implants

- Dental implants are a prosthetic (artificial replacement) typically used when tooth loss occurs due to one of the following:
 - Tooth decay
 - Root canal failure
 - Periodontitis (gum disease)
 - Trauma to the mouth
 - Excessive wear and tear
- Is it right for you? (suggestions from Mayo Health Clinic)
 - Have one or more missing teeth
 - Have a jawbone that's reached full growth
 - Have adequate bone to secure the implants, or are able to have a bone grafting procedure
 - Have healthy oral tissues
 - Don't have health conditions that will impair bone healing
 - Are unable or unwilling to wear dentures
 - Want to improve your speech
 - Are willing to commit several months to the process

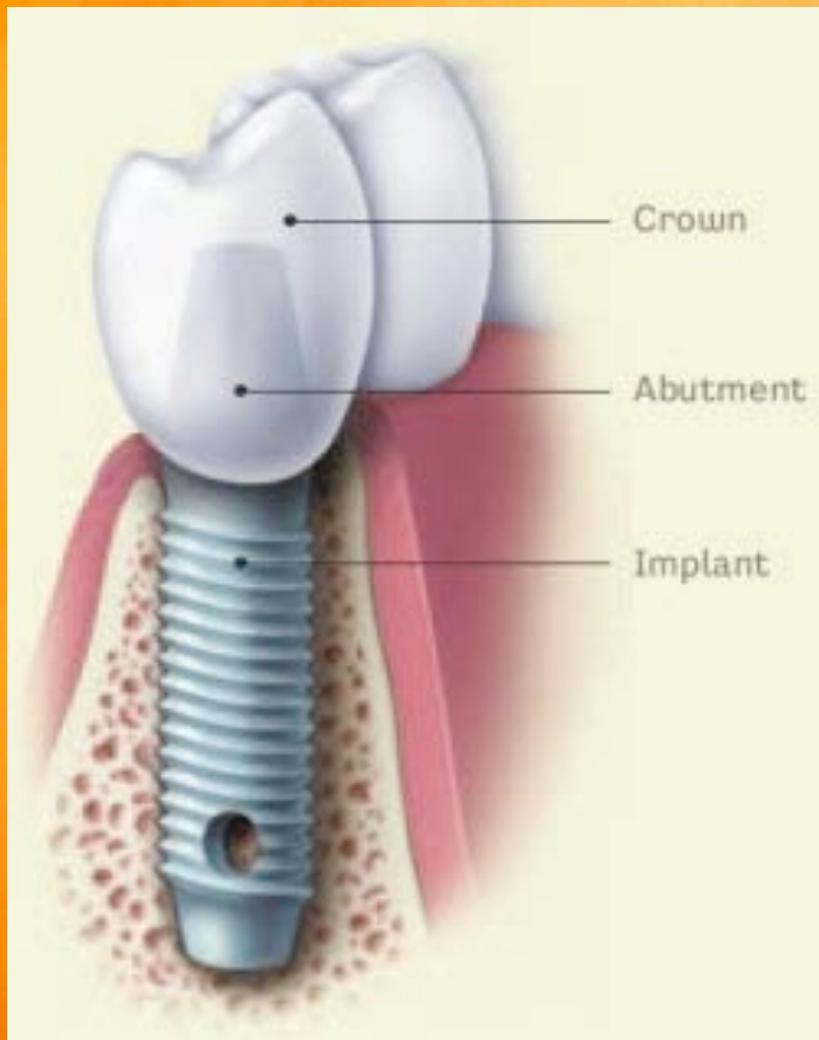
affected and cost

- Estimated 69% of adults between 35-44 have lost one tooth due to:
 - Accident
 - Gum disease
 - Failed root canal
 - Tooth decay
- Implant cost: Small implant
 - \$1-5K
- Implant cost: Large implant
 - \$24-100K (full mouth reconstructive surgery)

Dental Implants



Implants can be used to replace one missing tooth so that the replacement looks and feels natural (a). Also, two or more implants can serve as a stable support for the replacement of many teeth (b).



Fixed bridges may require the shaping or cutting down of adjacent healthy teeth.



Bone is maintained by the presence of natural teeth or implants (a). Bone loss occurs with the loss of teeth (b).

Why implants?

- Implants are better than dentures and bridges, in fact, they can support them!
- Implants allow for osseointegration (bone regrowth combining jaw to implant)
 - This anchorage of implant root to bone of jaw typically takes 3-6 months to heal. If healing doesn't occur during these 3-6 months (aka, body rejects) then tooth falls out.

How are dental implants performed?

- Team:
 - the patient
 - the restorative dentist
 - who makes the crown for the implant
 - and the oral and maxillofacial surgeon
 - who surgically places the implant, follows a careful plan of treatment
- 1. Jaw is prepped for implant
 - X-ray performed, restorative dentist takes molds of upper and lower jaws, used to create the dentures or crowns
 - Dental implant is today is typically composed of titanium screw and crown (fake tooth)
 - A small-diameter hole (pilot hole) is drilled at edentulous (where there is no tooth) jaw sites in order to guide the titanium screw that holds a dental implant in place
- 2. Placement of implant
 - Hole is slowly widened for placement of screw. Following placement, a protective cover is place on top to allow for the osseointegration
 - After several months, the cover screw is removed and a temporary crown or denture is placed. This temporary crown acts as a guideline for the gums to grown around/onto.
 - Finally the permanent crown is placed.

How Successful Are Implants?

- No precise #'s available, but one dentist suggested 95% success for lower jaw, and 90% success for upper jaw.
 - Failure often due to lack of osseointegration
 - Implant may become infected (like normal teeth do)
 - Smoking