



My Drift

Title: Dental Implants

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I'm having a lot of problems with my teeth in my old age. In the past few years, I have lost several teeth. Two teeth have just broken off at the gum level and another three had to be pulled for one reason or another. Last year (June 2021), my dentist put a crown on one of my remaining upper front teeth. It was required to save the tooth. This cost me over \$1000. My health insurance (Medicare and federal government HMSA) does not cover crowns or implants.

Then in early December 2021, I received a letter from my dentist's family informing me that my dentist had unexpectedly died. I have been going to this dentist since 1990 (31 years) at the same office in the Pam Am Building. I don't know how old he was or how he died but I do know that he was fairly young – I would guess around 60 years old. Before going to this dentist, I was going to another dentist in the same office for 20 years before he retired. I started going there in 1970 shortly after coming to Hawaii.

So, here I was with no dentist and Murphy's law came into play. A few days after finding out my dentist had died, the front tooth with the new crown broke off at the gum level! I was thinking about going to my wife's dentist when I got a call informing me that another dentist was taking the patients from my dentist that died. His office was just across the hall from where I had been going all these years. Since I already had an appointment scheduled in January 2022 for my semi-annual cleaning, I decided to go to this dentist.

Meet Dr. Kris Nip, DDS | Premier Dental Group Hawaii



A Desire to Give Back

With many family members in the medical field, dentistry was a natural fit for Dr. Nip. His grandparents, who he was raised by, emphasized taking care of their community and giving back. His grandfather was a general surgeon in Hawaii who influenced Dr. Nip to explore the possibility of a medical career. Interested, he volunteered at different types of clinics and felt that dentistry was the right choice. He worked as a dental assistant to a pediatric dentist during college and saw how using just his hands, the dentist took care of his patients, getting them out of pain and using artistry to create smiles.

A Dental Education

Dr. Nip attended the University of Hawaii to earn a degree in biology, then moved on to the University of Colorado School of Dental Medicine. Upon his graduation in 2016, he completed a general dentistry residency through New York University Lutheran Dental Medicine program on the Big Island. Since joining Premier Dental Group Hawaii, Dr. Nip has enjoyed getting to know his patients and transforming their smiles or alleviating discomfort.

Staying Informed and Involved

To continue learning, Dr. Nip participates in The Tucker Study Club which focuses on the aspects of using gold in dentistry. Much evidence supports the biocompatibility of gold and our bodies, and he learns from other dentists in the group who have decades of experience. Dr. Nip is a member of the Academy of General Dentistry and the Hawaii Dental Association. In his spare time, he enjoys fishing, playing basketball and spending time with his fiancé. A little-known fact about him is that he has a twin brother who is easily mistaken for him! He has also participated in the Give Kids a Smile® program in Hawaii.

That is a short BIO about my new dentist that I found online. Yes, I checked him out a bit before going to my first appointment on 10 Jan 2022. He is young and likes to play basketball and go fishing. I like to play basketball and go fishing so I figured we have somethings in common and he might be a good dentist for me.



1960 University of Utah



My biggest Fish

As you can see in the above basketball picture, I had all my teeth in 1960. Well, here we are in 2022, and I only have a little more than half of my original teeth. I went to my 10 January appointment and met Dr Kris (they call him Dr. Kris in the office – not Dr. Nip) and had my teeth cleaned by their hygienist. They also took an extensive set of x-rays and made an appointment with Dr Kris to take photos of my teeth and to discuss my problems with options going forward.

I might as well state this fact now. I really wanted to live out my life without getting bridges, dentures, or implants. That was a goal of mine! My mother lived to almost 100 years old and died with her original teeth. Okay, there were a few missing teeth, but she was able to eat until the end. Here I am only 81 years old and I'm afraid I must do something soon or else I will not be able to bite and chew my food much longer.

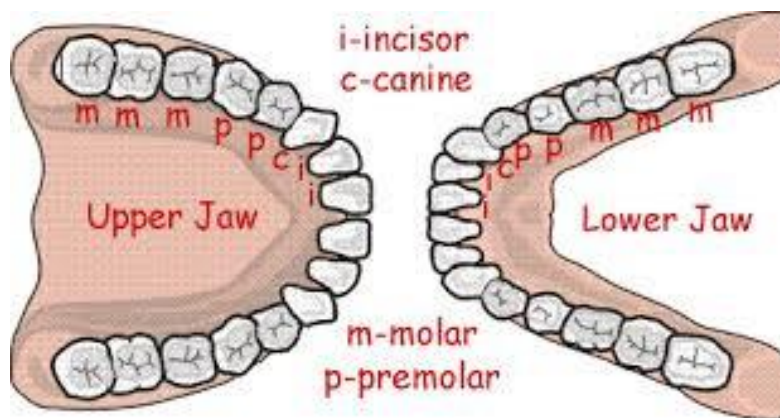
Here is my situation as Dr. Kris explained it to me. My bottom teeth are in much better shape than my upper teeth. I'm missing 3 teeth on the lower right side and have two teeth broken off at the gum level on the lower left side. The rest are okay except for a filling that is half broken on one of my lower front teeth.

On the upper right back side, I only have one tooth left. The upper front right tooth that my previous dentist put on the crown, and it recently broke off may or may not be saved. Dr. Kris said that they could do a root canal and put a pin in the root to build it up in order to put another crown on it. He said this might work but I need to decide whether or not to go this route or get implants. I have been missing one other front tooth for 40 or 50 years – probably due to getting hit in the mouth while playing basketball. The other upper front tooth has a crack in the root, and we don't know how much longer it will last. On the upper left back side, I'm missing two teeth and the back most molar has an infection and must be pulled soon.

Wonderful!! Unless I drop dead in the next few months, I'm going to have to do something about my failing teeth situation.

Wait just a minute here. How many teeth do us humans supposed to have anyway and what are they called?

Humans usually have 20 primary "baby" teeth and 32 permanent (adult) teeth. Teeth are classified as incisors (8), canines (4), premolars (8), and molars (12). Following picture shows where they are located:



Okay, as you have probably guessed, I run right into the bathroom and stood in front of the mirror and counted my teeth. The total was not good but will remain a mystery for now.

Dr. Kris says that we must pull the infected tooth and fix the tooth with the broken filling right away. Then I must decide what to do about my other problems. I could probably live out my remaining years eating soft food with soup and drinks. However, I like a good steak, a meat-lover pizza, and pecan ice cream along with a few other things. So, basically, I got four options that I will discuss with Dr. Kris at my next appointment in late February. They are:

Option 1. See if we can save that tooth that recently broke off with crown that was put on last year. If nothing else bad happens, I can still bite and chew my food like I have been doing for the past few years.

Option 2. Pull my remaining front teeth that have issues and get the minimum number of implants (5 or 6) that will allow me to bite and chew my food.

Option 3. Go with Option 1 and wait for something else bad to happen then go with the implant option.

Option 4. Go with Option 1 and when something bad happen, live out my days with soft food, soup, and drinks.

But, before I decide what to do, I plan to learn everything I can about dental implants starting now.

The evolution of Dental Implants throughout history

A complete set of teeth has been valued in civilizations throughout history for both functional and aesthetic purposes. The importance placed on teeth drove the invention of various teeth replacement solutions that eventually led to dental implants. It may come as a surprise to you, but dental implants have been around for centuries. In fact, the first evidence of dental implants is attributed to the Mayan population roughly around 600 AD where they excelled in utilizing pieces of shells as implants as a replacement for mandibular central incisor (that is the tooth located on the jaw, adjacent to the midline of the face).

Dental Implants in the Ancient World

Implants date as far back as 4,000 years ago when bamboo pegs were carved in China and used to replace missing teeth. These were fixed onto the bone in the mouth. Around 2,000 years later, the Egyptians adopted a similar practice of carving precious metals and pegging them onto the jawbone. The first recorded case of a metal implant was found in an Egyptian king from 1,000 BC. Archeologists have also found numerous skulls with artificial and transplanted teeth made from elephant ivory or rare gems like jade.



Most of the original practices, however, were barbaric, painful and sometimes fatal.

How has Dental Implant design changed over time?

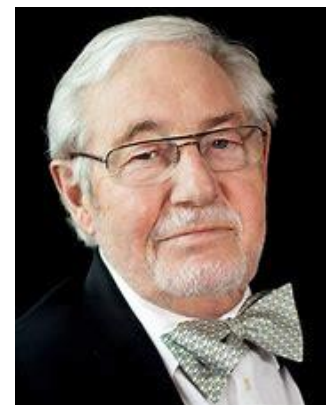
Before modern titanium implants were invented, the main struggle with dental implants was the rejection of the foreign material by the body. In the 18th century, researchers used a blend of gold and alloy to create dental implants. Unfortunately, these experiments were a massive failure, but they opened doors to more fruitful research in later years.

In the 1800s, dental professionals experimented with numerous materials, including silver and porcelain. One doctor used a porcelain implant that had a platinum disc. However, these efforts were unsuccessful because the bone rejected all the materials they used. A successful implant involves permanently fusing an implant into the jawbone in a process called osseointegration.

Throughout the early 1900s, many doctors tried different materials, but none of them provided long-term results. Then in 1930, two brothers, Drs. Alvin and Moses Strock, tried to use fixtures made from Vitallium after observing the material being used in hip bone implants. These fixtures were more long-lasting, and the brothers were recognized as the first people to place an implant into the jawbone successfully.

When did Dental Implants become popular?

In 1952, orthopedic surgeon and research professor Dr. Per-Ingvar Brånemark laid the foundation for modern-day dental implants. During a study on bone healing and regeneration, he implanted a piece of titanium onto a rabbit's femur. He was not able to remove it because the titanium had fused with the bone. He accidentally discovered that implants made from titanium had a better success rate and theorized this technology could be useful in dental implant applications and similar fields.



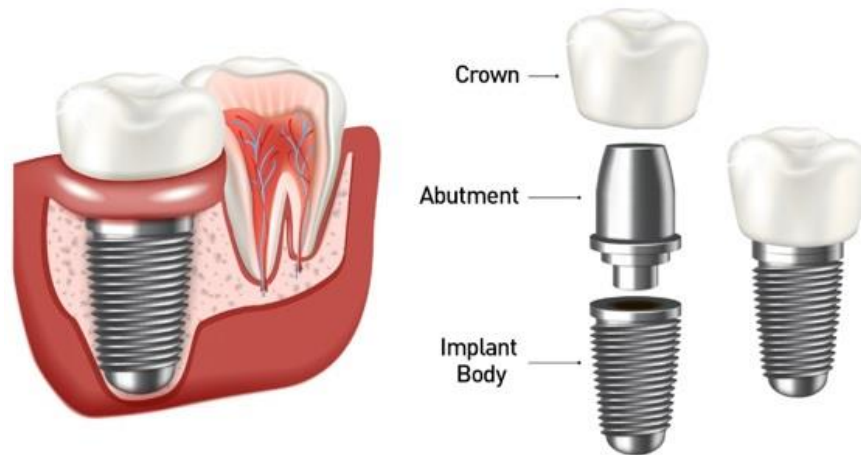
Dr. Brånemark

After further experimentation, he used titanium to replace a missing tooth in one of his patients in 1965, and it was a success. This discovery was a significant breakthrough in the dental implant industry. Thanks to Dr. Per-Ingvar Brånemark, dental implants have improved over the years to become what they are today.

Present Day Implants

Dental implants continue to be manufactured from high-grade titanium and shaped so that they can be securely fixed to the jawbone. A titanium alloy screw is secured to the jawbone. During healing, the screw fuses to the bone. Then, a crown is inserted over the screw. Though this method has a few risks, it's still the best and most successful method of affixing implants.

Structure of The Dental Implant System



Modern Dental Implants and High Success Rates

Dentists, clinicians, orthopedic surgeons and other medical professionals consider dental implants the best solution for missing teeth. Dental implant applications include dentures, bridges and crowns, even if there is only one missing tooth. Current implants come in a variety of shapes and sizes to suit different teeth. Their surfaces have been created to enhance seamless integration. Instead of being straight and smooth, they're roughened to increase the surface area where the bone can become attached. The texture improves the osseointegration process.



Today's implants have an extremely low failure rate. With proper treatment, sound surgical procedures, and prosthetics that account for bone density, health, function, speech, aesthetics and ease of cleaning, you can expect up to 10-year success rates in over 98% of cases. In contrast, bridges, crowns and root canals only have a 10-year success rate in about 80% of cases. In fact, almost all medical surgeries have a 10-year success rate of only 75%. In short, dental implant surgery has become extremely successful and predictable.

Today, modern technology has made dental implants the go-to solution for missing teeth.

Types of Dental Implants

Endosteal (in the bone)

The various types include cylinders, screws or blades the dentist surgically places into your jawbone.

Subperiosteal (on the bone)

The oral surgeon will place this type of implant if you have minimal bone height or can't wear conventional dentures.

Endosteal Implant



This is the normal most used implant type. The endosteal implant is a type of dental implant that replaces the root and holds the replacement tooth. It is placed into the bone. There are different types of endosteal implants, including screw-type and blade.

Subperiosteal Implant



Subperiosteal implant procedures can be complicated but are one option for providing a new foundation to affix artificial teeth. These implants involve affixing a metal frame to the jawbone beneath the gum tissue of the affected area. Waiting for the gums to appropriately heal while the frame seals to the jawbone.

Are Dental Implants Safe?

Dental implants are a well-established and safe treatment option for replacing teeth. Manufactures usually craft them from titanium — a type of metal that's biocompatible with the human body. Oral surgeons that place implants are very established and regarded highly in the dental profession. Dental implants are the only method of tooth restoration that stimulates the natural bone you have under your missing tooth.



While you might have some apprehension or fear of the implant procedure, dental implant surgery is extremely secure and delicate. It's a very detailed procedure that ensures minimal risk to you and the highest level of comfort.

Am I a Good Candidate for Dental Implants?

Typically, if you're healthy enough to undergo oral surgery or even a routine dental extraction, you're a candidate for dental implants. But you need to have enough bone to hold the implants and healthy gums. You must also commit yourself to routine dental visits and good oral hygiene. If you smoke heavily or suffer from an uncontrollable chronic disorder like heart disease or diabetes or if you had radiation therapy to your neck/head area, your dentist needs to evaluate you to determine if dental implants are an option for you.

Dental implant procedure options

The dental implant procedure is a team effort between your dentist, your oral surgeon and you. Your dentist and oral surgeon will talk with you to determine how and where they should place your implant. Depending on the type of implant chosen and your specific condition, they'll create a custom treatment plan tailored to meet your needs.

Here are some dental implant procedure options:

Single tooth replacement: You'll require only one implant and crown to replace your single missing tooth.

Several teeth replacement: You'll require an implant-supported bridge to replace several missing teeth.

Complete teeth replacement: If all your teeth are missing, you'll require full dentures or a full implant-supported bridge to replace them.

Sinus augmentation: The quality and quantity of your bone where the oral surgeon will place your implant is key to implant success. **Because the upper back jaw tends to have insufficient bone quality and quantity and is close to the sinus, it's traditionally a challenging area to place dental implants successfully.** Sinus augmentation, or sinus lift, helps correct this issue because it raises the sinus floor and helps develop bone for dental implant placement.

Ridge modification: Deformities in your lower or upper jaw can result in you not having enough bone for dental implant placement. To correct this issue, the oral surgeon will lift your gum away from the ridge, exposing the bony defect. They'll then fill the defect with bone or a type of bone substitute to build the ridge up. Ridge modification can improve appearance greatly and increase your likelihood of experiencing successful implants.

Dental Implant Surgery — What to Know Before Your Procedure

During the planning stage and consultation with your dentist and oral surgeon, they'll examine the area in your mouth carefully where they'll place the dental implant. Here's what you need to know about a dental implant procedure in its planning stage.

1. Your dentist will require X-rays for assessment and prognostic purposes. They may use X-rays, a 3D CT scan or panoramic X-rays to determine gum and bone condition, and for identifying any possible problem warnings.
2. Your dentist takes an impression of your mouth to obtain a good replica of your gums, teeth and the neighboring tissues they'll use. They'll determine the correct size metal or plastic impression tray for your mouth and then fill the tray with a soft liquid like polyvinyl siloxane or alginate. They'll have you bite down on the impression tray and hold it there for a minute or two to allow the liquid to set and become a solid rubber mass. You'll then open your mouth, and the dentist will remove the tray and send it off to a lab for processing.
3. Your dentist and/or oral surgeon will talk with you about the procedure and address any questions or concerns you have.

4. Your dentist will likely give you some pre-operative instructions you'll need to follow, including things like:

- **Rinsing your mouth with chlorhexidine or another type of antibacterial mouthwash.**
- **Prescribing you antibiotics you'll take for several days before your procedure, as a preventative measure.**
- **Having you eat a good breakfast the day of your procedure unless you're having the surgery performed under IV sedation.**
- **Bringing someone with you to the appointment to drive you home if you undergo IV sedation or take an oral sedative.**

What to Expect During a Dental Implant Procedure?

At this point, you probably want to know the procedure for dental implants. So, what are the steps to getting a dental implant?

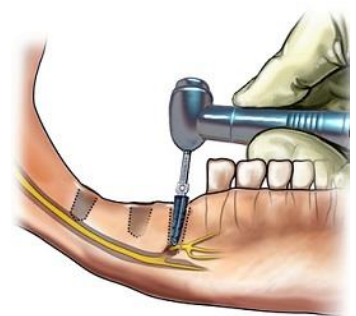
You may have the surgical phase of the procedure performed with local anesthesia in the dental office or an oral surgeon may perform it while you're under IV sedation. There are a couple of phases involved with the procedure.

Phase One

If you still have the tooth in question, the dentist or oral surgeon will need to extract it first. Your oral surgeon can do this the same time they insert the implant.

After your extraction:

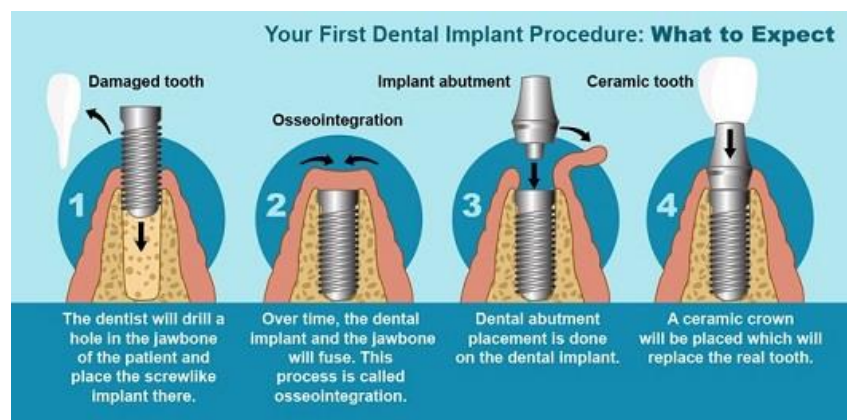
- 1. The oral surgeon will numb your mouth thoroughly with local anesthesia for the surgical implant placement. While surgical procedures may bring about the idea of a patient being fully unconscious, dental implants are only minor surgery. They don't require complete sedation for treatment to be comfortable.**
- 2. They'll make an incision in your gums where they'll place the implant to expose the underneath bone.**
- 3. They'll use a quiet, specialized drill to drill a hole and create a space in the bone for the implant.**
- 4. They'll screw the implant in place using the same implant drill or a hand tool.**
- 5. Once they fit the implant in place, they'll screw a second component into the implant which will stay in place during your healing process.**



6. They'll close your gums over the implant with one or two stitches.
7. Your implant will become attached to your bone securely over the next several months.

Phase Two

1. The oral surgeon will re-expose your implant. They'll make another small incision in your gums, exposing your implant unless they placed a separate component on your implant that sits above your gums.
2. They'll place a small extension on your implant to take an impression. The lab will use this component to fit your new crown.
3. Your dentist will begin setting a series of appointments for making the crown for your implant. While steps may differ for your case, they typically include creating impressions of your teeth. The dentist or oral surgeon will make exact working models from these impressions of your mouth, which they mount carefully for proper alignment. The lab fabricates your crown from these models.
4. The oral surgeon or dentist will place your new crown during the final step of the procedure. Your oral surgeon might want to try your new crown in first before it's completed to check the fit and shape of it inside your mouth.



How Long Does a Dental Implant Procedure Take?

Now that you know the dental implant procedure steps, you want to understand the factors determining how long your implant procedure will take, including:

- The number of involved teeth
- Your oral health

- If you require a tooth extraction before your implant placement
- If you require bone grafting
- Which teeth you'll have replaced

Although the entire dental implant procedure, from start to finish, could take as little as about six months if everything goes perfectly, it is not at all uncommon to find yourself finalizing the process a year or more after you've lost a tooth. If you require an extraction that needs to heal or you need bone grafts before the oral surgeon can implant the posts, it could take longer.

The number of visits you'll pay your dentist throughout your treatment period will also depend on these factors. For example, it generally only takes about an hour or two from start to finish to surgically insert one tooth implant. And this includes anesthesia time and dressing you for a sterile surgical atmosphere.

How painful is a Dental Implant?

Usually, the oral surgeon performs a dental implant procedure under local anesthetic, so you shouldn't experience any dental implant procedure pain. Once the local anesthetic wears off, however, you may experience a little post-surgery discomfort. If so, the discomfort you experience will feel similar to the discomfort you'd experience following a tooth extraction.

To help reduce swelling, immediately following your procedure, you can place an ice pack on your skin over the area you had surgery. Usually, you can manage post-surgery pain with over-the-counter medicines like acetaminophen (Tylenol) or ibuprofen (Advil). But, if your surgery was more invasive, you might need a stronger prescription pain medicine. Your dentist might prescribe you an oral rinse and antibiotics to support healing.

How long do Dental Implants take to heal?

Because a dental implant procedure involves multiple steps, you may experience more than one healing stage. So, the time it takes to heal will vary, depending on your health and the number of teeth you have replaced. And again, it can take between six to nine months to fully restore your mouth or longer if you require bone grafts or extractions.

What can go wrong?

All oral surgeries include a small risk of bleeding disorders, infections and allergic reactions. Luckily, long-term complications occur on an infrequent basis.

There is a chance of your dental implant failing and not adhering to the bone. In this case, you may wonder, “can a failed dental implant be replaced?” Usually, you can choose to have a failed implant replaced with another implant.

There could be dental implant problems years later. Your dental implant procedure could be an immediate success but develop complications years later. Some dental implant complications you could experience include:

- Tissue or nerve damage could occur if the oral surgeon placed your implant too close to a nerve. In this case, you’ll want to look out for tingling or numbness in your lips, tongue, face or gums as signs of this.
- While foreign body rejection usually doesn’t occur that often, it can still occur. This is where your body rejects the implant. If the implant area swells or you experience increased pain, chills and fever, these could signal your body rejecting your implant.
- If the oral surgeon placed your implant in your upper jaw, it could protrude into your sinus cavity.
- If an injury occurs to the site surrounding your dental implant, it could loosen your implant.

To reduce the likelihood of long-term complications, continue practicing good oral hygiene to keep your implants, mouth, teeth and gums healthy. Along with good oral hygiene habits, if you want your implants to last, you’ll also want to set routine dental visits for professional cleanings and exams.

How much do Dental Implants cost?

The average cost of one dental implant is \$3,000 — \$5,000. It includes the post, abutment, and crown placement. Bone grafting, tooth extraction, CT scan, and X-rays are extra and paid for separately. Additionally, the cost depends on the following factors:

Experience — The more experienced your dentist is, the more money they’re likely to charge since working with top-notch professionals minimizes risks.

Materials — Implants are usually made from titanium or zirconium. The quality of these materials dictates their price.

Preliminary procedures — If you need additional preparation procedures like tooth extraction, sinus elevation, and bone grafting, the total dental implant cost goes up.

Laboratory — The cost of the crown can depend on the laboratory your dentist works with.

Location — The total dental implant cost may depend on where your dentist is located. This means the cost will be more in Hawaii than in most mainland states.

Individual characteristics — Dental implants are highly customized for each individual case. That's why the cost may vary from patient to patient.

Breakdown Estimate of Dental Implant Cost

Post — \$1,000 to \$3,000

Abutment and crown — \$1,000 to \$3,000

Bone grafting — \$500 to \$3,000 (depending on how complex the procedure is)

Tooth extraction — \$150 to \$650 (depending on complexity)

CT scan — \$500 to \$1,000

X-ray — \$50 to \$200

How many Americans have Dental Implants?

Over 3 million people in the U.S. have dental implants, and another 500,000 implants are placed each year, according to the American Academy of Implant Dentistry. If you are one of the millions of Americans who suffer tooth loss, dental implants are a solution worth investigating. Bridges and dentures were the only options for people with missing teeth for many years. Today dental implants provide a strong foundation for replacement teeth that match your natural teeth. Below are several facts about Dental Implants:

- **Dental Implants Match Your Natural Teeth** - They are designed to look and feel like your healthy teeth.
- **They are Worth the Investment** - At first glance, dental implants may seem to be a much greater investment than other restorative solutions. Dental implants can last up to a lifetime while dentures and partials need to be replaced every couple of years due to changes in your jawbone caused by deficiency. These costs can add up over time and be a bigger financial burden.

(They might not be worth the investment for older people like me who don't have a lot of money. I could spend \$20,000 on implants and then drop dead as soon as they are in place. Remember Murphy's Law?)

- **Dental Implants Mean Less Worry** - Even the best fitting dentures can slip or become loose at the most inopportune occasions. Avoid the embarrassment that accompanies these situations with dental implants.
- **Retain Your Facial Features and Look Younger** - Dental implants can help you look years younger. Missing teeth can result in sunken

cheeks which make you look older. Your smile can disappear into a frown and people who are missing teeth tend to smile less often.

- **Dental Implants Maintain the Health of Your Jawbone** - Your jawbone relies on your teeth to keep it from deteriorating.
- **Dental Implants are Easy to Care For** – You care for implants just as you do with natural teeth.
- **Enjoy All Your Favorite Foods** - Just like your natural teeth, it is easy to bite, chew and swallow any of your favorite foods.
- **They Provide Protection for Existing Teeth** - When you lose a tooth there are consequences. Gaps in your mouth will cause adjacent teeth to shift to close the space as much as possible. Jaw pain, swollen gums, and additional tooth loss can result.
- **Dental Implants are Successful** - Dental implants are the most successful restorative option available. About 98% of all dental implants last a lifetime.

Recap – Pros and Cons of getting Dental Implants

I think that I have provided a fair assessment of getting Dental Implants in this article. To sum things up, I have picked 4 Pros and 4 Cons of getting Dental Implants:

Pros

- They look like and are maintained like your regular “real” teeth.
- You can bite and chew your food normally.
- They can help protect the health of your jawbone and existing teeth.
- About 98% of all dental implants last a lifetime.

Cons

- Takes at least 6 months to more than a year to install with multiple visits to your dentist and oral surgeon.
- Implants are expensive and most dental insurance doesn’t pay anything. One implant can cost more than \$5000 if you require tooth extraction, bone grafting, CT scan, and X-rays.
- Depending on your health situation, you may not qualify for dental implants.
- There is a small chance of your dental implant failing and/or risk of bleeding disorders, infections and/or allergic reactions.

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