Why Replacing Missing Teeth Matters

What is the best option to replace a missing tooth? This is a question that has persisted for hundreds of years and today we're going to really get into what are the options, how do they work, which should you choose, and are there any special things that you should know about that placement.

let's talk about all of this but first of all i just want to make sure that we're focusing on the fact that anything that we put in our mouth to replace a tooth to give us our smile back it should all be biocompatible right it should be something that the body actually wants and likes and accepts and it should also not cause other problems and other symptoms in the body.

So we're going to talk about all of that. So when did this idea about replacing missing teeth all start to come about? Honestly, as early as people started losing teeth.

There is historical evidence of ivory and bone and wood and gold being used as teeth replacements. We've been able to find you know human skeletons that have embedded teeth.

connected to other teeth in their mouths. So we know that replacing teeth has been something really at the forefront of medicine and humankind as people have developed.

George Washington is a really well-known person that had a lot of medical and dental issues.

Early Tooth Replacement and George Washington's Dentures

In fact, dental issues are most likely the thing that ended up killing him. By the age of 57, when he became president, he only had one tooth left in his mouth because of other concerns, diet.

We don't know exactly why, but he had had constant issues with teeth and had lost most of them. So he's famously known to be wearing dentures during his presidency.

And in the most famous picture that's on the dollar bill, his mouth looks a little puffy. It's because he didn't have any teeth and they stuffed it full of cotton.

to fill out his cheeks. So his dentures were made of lead, the base was lead. Now we know this is very concerning. Again, perhaps another reason that he didn't live as long as he should.

They also had animal teeth, human teeth, who knows where they came from. and other things embedded in these lead bases and had some springs on them. They were very uncomfortable.

He didn't like using them. He couldn't speak well with them. He ended up giving his addresses not even in the Senate chambers or in front of public because he didn't feel comfortable and confident talking with his teeth in.

So he often did it without them in. Replacing missing teeth is a big deal. Well, in the 1950s, there was a Swedish physician whose name was Brandemarck, and he was studying blood flow in healing of bones.

He was studying and doing animal studies on rabbits. So what he did is he actually implanted this little window that was surrounded by titanium, this little window in the leg of rabbits.

And what he wanted is he wanted to see actually what was happening inside of that bone while it was healing. So he was using this little titanium based window to view what was actually happening from a blood flow standpoint in the bone.

Well, he intended to remove that window and then see how it healed after. But when he went back in to remove the window, what he found is that that actually had fused to the leg bone of the rabbit.

So, He discovered something that he called osseointegration. Osseo means bone, so bone integration with titanium. He discovered it in a roundabout way, very unintentional.

And he said, oh, if titanium can fuse to bone in this way, well, can it fuse to bone in other ways? And this is where things like knee replacements and hip replacements and shoulder replacements and teeth replacements were all born.

in a very abstract way with rabbits. So he discovered that titanium would affix to the jawbone, to other bones. The bone would literally grow and integrate with that titanium.

Branemark and the Discovery of Osseointegration

This is how dental implants began. Up to that point, there were other options for replacing missing teeth. Obviously, we talked about George Washington's dentures, and you can still get dentures today, whether full dentures, meaning replacing every single tooth in your mouth, or partial dentures, replacing just some and connected to the teeth that are remaining.

I'm guessing that's what they were doing with George Washington's dentures, why he had one tooth left in his mouth, probably to try to hold everything in place a little bit better.

So absolutely something removable. We call this removable. It comes in and out of your mouth. That's an option for replacing missing teeth. You can also do something called a dental bridge.

It's not removable. It's actually glued onto the other teeth. So if you can imagine when you have a bridge and a car's driving across, you have to have something supporting it on either end of that open span.

The same thing goes for the mouth. So when you have a bridge, you do a crown on the tooth behind the space, a crown on a tooth in front of the space, And then the three space span is connected together with a dental bridge.

Again, the idea is great, but let's talk about pros and cons with both of these things, the removable dentures and the fixed bridges. Removable dentures.

The biggest issue is that as soon as the tooth is lost, the bone is lost as well. Bone doesn't stay there unless there's a tooth to support it. So what happens is the jawbone continually shrinks over time.

So when you put a denture in, it's a piece of basically plastic, right? It's acrylic. There's a few other things in there and that puts pressure on the jawbone on the gums and that pressure even speeds up the bone loss.

So now there's not a lot to hold those dentures in place. So they often move around. They're difficult to chew with. Sometimes they're difficult to talk with.

You end up having to use a lot of glue to hold them in. The glue itself can be problematic for the stomach and other issues. So it's definitely not something that you really want.

You know, if you have to choose, you don't want teeth that are moving around and nuts and things getting up underneath. And really you've lost significant chewing efficiency with a denture.

Typically we say you've lost about 80% of your chewing ability when you get a denture. If it's the only thing you can do, it's better than nothing, right?

That 20% is better than 0% for sure. But if you have options, usually some sort of a removable option isn't a great one long-term. So let's move on to the dental bridge.

What is the pros and cons of a dental bridge? Well, the pro is that it's fixed. It doesn't come in and out.

Dentures and Dental Bridges: Pros and Cons

And we really don't have to rely on the bone to hold it. So even if the bone shrinks, it doesn't matter as much. The cons are that it requires a lot of those teeth that are holding the bridge.

and research shows that because of the flexing on the bridge you know when you chew on this tooth it tips the bridge this way when you chew on this tooth it tips the bridge this way and what ends up happening is that it breaks the cement seal on those crowns that are holding the bridge in place but not enough to make the whole thing loose so you don't really know what's happening but things are able to leak up underneath saliva is able to get up underneath the crown it leads to tooth decay underneath that bridge that often we can't see because it's blocked out on an x-ray by the bridge itself.

So sometimes the decay is quite large and destructive before we even know it's happening. Research shows that one or both of the teeth holding a bridge will be lost within about 10 years of that original bridge due to this cement leakage.

So it's a great option, but it's not a long-term option. We find that you actually are turning a one-tooth problem into a three tooth problem because now all three teeth are at risk of being lost.

So if there's an option to do a dental implant, that is what we prefer. So what exactly is a dental implant? Let's jump into that just a little bit. A dental implant has three typical components.

The first component is the implant itself. That is the root replacement. So that actually goes into the jawbone and people will say things like, oh, it's a screw.

It actually looks a lot like a screw. It's threaded like a screw is threaded. So what it does is when it's being placed, it's integrating or coming in contact with the bone all the way down.

So to be able to place a dental implant, you have to have enough bone there. It's just like the idea of a piece of wood and a screw, right? You have to have wood on both sides of the screw above it, below it, everywhere to be able to hold that in place.

Same thing goes with dental implants. So the implant itself is the screw portion that replaces the root. It's typically at bone level, sometimes at gum level, but it's not what you chew with.

So the dental implant is simply the root replacement portion. On top of that, we place something called an abutment. I like to call it a connector because it connects the root portion with the crown or the chewing portion.

That connector goes between the two. And then there's a crown on top of the connector. That's the part that you see. that's the part you chew with, that's the part you smile with.

So when you're getting a dental implant done you need to make sure that you're talking about the implant, the abutment or connector, and the crown on top because it requires all three.

Now there are some options that you can do a dental implant, again the root replacement, that actually replaces more than just that one tooth. There are options to get, let's say, four dental implants and then little balls that go on the top of the implant as a connector and snaps inside of a denture.

And the denture can snap right on top of the dental implants. So there are options to do fewer implants to replace more teeth. We're not going to dive a lot into that option today because today we're just really talking about implant choices, why they're good and what you should be looking for when getting a dental implant.

But know that there are some options out there to replace multiple teeth if needed as well. So Dr. Branamark was

studying titanium when he had this accidental discovery of osseointegration.

Titanium is the first and most researched version of dental implant that we have. Now today we do have zirconia as an option for materials for dental implants as well.

So let's talk about pros and cons of both. When it comes to a dental implant, the key is we want it to integrate, meaning bone to literally grow to the material of the dental implant.

How Dental Implants Work

We want the gum to be happy around it and to seal around it. And we want the body to be okay with it being there. These are all maybe difficult to do, right?

In a body that's not really liking a lot of foreign objects in it. So let's talk about titanium first. has many, many years, 30, 40 years of longevity with titanium.

It undoubtedly and indisputably allows for bone to grow to it. I actually have a titanium dental implant myself right here that's been there for 25 years or more.

and that implant is solid as a rock. It doesn't move. That's the benefit of titanium is the bone really grows quite firmly to it. However, the gums don't always love the titanium and what sometimes happens is there's some leakage around the edge of the crown portion down around that dental implant itself, which can lead to bone loss.

There are actually a lot of incidences of titanium implants that have been in mouths for a long time that are now losing bone and being lost. Lost simply meaning they don't have enough bone to hold them in anymore and they're coming out of the mouth.

So what could also be happening here? Part of it is that you still can get gum disease around a dental implant. It's called peri-implantitis instead of periodontitis.

Periodontitis is gum disease around a tooth, a dent, you know, daunt is a tooth. Peri implantitis is gum disease around an implant. You can still get it.

So if you have gum disease, if you have infection in the mouth, an implant is not a thing for you. In fact, this is one of the reasons why we won't do a dental implant.

If you have uncontrolled gum disease, you must get on top of that. But there's a couple of things that you may not hear talked about very frequently with titanium.

And I want to dig into these. The first is some people are concerned about a titanium allergy. And I'll tell you that there's actually not a lot of titanium allergies out there.

There's a specific test called a Melissa test that you can take to determine if you do have a titanium allergy. I've actually never seen a true titanium allergy.

It's really rare. However, We have something called titanium overload. So I'll always remember this from a patient early on. She had a titanium implant placed.

I placed it myself before I knew any differently. I placed it myself and she told me, I cannot wear jewelry. I cannot wear metal jewelry now that you've placed that implant.

And it never really calmed down. It was always swollen and inflamed and we knew something was wrong.

Titanium Implants: Benefits and Concerns

So she said, I just, I just want the implant removed. We took the implant out, inflammation resolved. She was able to wear metal jewelry again. What was going on here?

This is called titanium overload because there's a lot of titanium in our world that we don't even know about. Titanium is the white that's in a lot of things.

So it's in cosmetics. It's in sunscreens. It's the hard candy coating that is on Skittles and M&Ms underneath the coloring. it is in paints on the wall it's in the bags that you get from walmart titanium is in so many things that our bodies are just kind of done with it they get too much and in some people and i see this especially in women we get overloaded and we get a sensitivity to it and so it shows up as a problem it's swollen it's inflamed it's not integrating the bone's not growing to it we think maybe it's an allergy it's not it's an overload i also believe this is why maybe it's happening where Implants that have been in for years are starting to lose bone, starting to get inflamed.

Again, an overload. We just have so much in our environment. So that's problem number one with titanium. Problem number two for titanium is that it's conductive.

So there's been an interesting study or slew of studies in the orthopedic world looking at metal knees and hips and shoulders and all these other joints and saying, why are we getting bone loss where we didn't before?

Well, I want to introduce you to this concept of frequencies. We know about it in a microwave, right? We don't put a metal pan in a microwave. Why? Because the waves or that frequency of energy that flows in a microwave, what it does and why it heats up food so quickly is because it makes those molecules in the food vibrate and that vibration creates heat.

Well, the same thing happens in metal. That vibration creates heat. We don't want that. I actually literally almost started my microwave on fire once because I put a metal pan in there, not realizing it.

There were sparks and all kinds of crazy things going on. And I know I've heard of people having the same problem. Well, what frequencies are we surrounded by?

Anybody heard of Wi-Fi before? This is a frequency, wireless frequency. Anybody heard of cellular frequencies? Any of those kinds of things? We're surrounded by them anymore.

When I moved into this building, I said, I don't want Wi-Fi here. I want to be clear of it. My husband pulled up his phone and there were literally 15 Wi-Fi networks that we could log on to right then.

He said, you can't be free of it. We're surrounded by it anymore. So these frequencies are simply energy waves. that pass through the metals and they heat things up as well.

Not as much as a microwave, but research shows that these frequencies pass through titanium and heat them up about four to five degrees Fahrenheit. Well, that four to five degrees Fahrenheit is warm in the jawbone and it can lead to bone loss.

Now remember, I have a titanium implant myself. Am I concerned? For sure. So there's things I do. Like I never put my phone up to the side of my face ever.

Like I try to do airplane mode as much as I can. I try to stay out of frequencies as much as I can. Am I able to avoid it? No, obviously. But I'm aware of it and I really watch this implant very closely.

So what's the alternative? Zirconia. And some people will say it's a metal as well. And if you look on the periodic table, you're going to find it's right next to titanium.

There's titanium and there's zirconium right next to it. But we don't use zirconium. We use zirconia, which is an oxide. So it changes. It's no longer conductive.

It cannot conduct electricity. It cannot heat up the same way that I'm describing about titanium. So what we find is that it integrates the same way that the titanium does.

We have the same osseointegration, but it doesn't have the heat issues and we don't have zirconia in our environment to the same level as we have titanium.

So we don't have this problem of overload. Now there are some reasons why it's less effective. So let me talk about that. First of all, zirconia is beautiful.

So let's talk about the advantages of zirconia. And there's more than just it doesn't heat up or have overload issues. Zirconia is white. So it looks like a tooth root.

Zirconia Implants and Why They May Be Preferred

and all of the components now top to bottom so the implant the abutment and the crown can all be zirconia can all be a ceramic material all of them so we don't have to work to cover up the gray you know if you pull my lip up and look at this implant here what you're going to see is there's a little gray hue in the bone here that you can actually see through the gums so thankfully i don't have a real big high smile otherwise it would be a concern but the dental implants that are zirconia they're white so we don't have to worry about covering up the gray they look really beautiful the other advantage of them is that the gums actually love them gums seal a lot tighter to zirconia implants than they do to titanium implants we see that they just like them better so we have less risk of things leaking down through the gum and getting down onto that bone and implant surface The bone really likes them as well.

But there is one caveat. They actually don't do as well in inflamed or infected bone as titanium implants. For some reason we can throw a titanium implant anywhere even in really infected bone and the bone kind of resolves and it integrates.

Zirconia is a little more finicky than that. We have to work really hard to make sure the bone is healthy and we're doing the right things. So what does that mean?

When we remove a tooth or prepare the area for a dental implant, we like to use ozone. What that does is it kills any bacteria in the area, gets the bone more ready to heal.

We also like to use what's called PRF, platelet rich fibrin, which is something from your own blood that delivers growth factors and stem cells and fibrin and everything that that bone is going to need to be able to heal.

So when we add ozone and PRF along with our zirconia implants, they do just as well as titanium and we get all the benefits of zirconia. So it's absolutely possible to use zirconia implants anywhere in the mouth anywhere.

And now I get patients from all over and they'll say things like, My doctor told me that they are breaking that they break in the back. You can't use them for a molar.

That's not true anymore. It used to be that that was the case because we only had one kind, a kind where the implant and the connector were one piece.

We called them one piece implants instead of two pieces. We have two piece implants now. We don't have this issue of breakage. Do they break occasionally?

Yes, they do. But so do titanium. I've had titanium ones break as well. So they're never 100% successful, but both of them are about 97% successful, which is great.

So to sum up all of this information, obviously, if you have a missing tooth, you want to do something to replace it. And it's important to replace it with something that's going to replace your chewing ability, your smiling ability, not impact your overall health and be able to last a long time.

And in my experience with lots of patients from all over the world, What I found is that zirconia implants are the thing that can check all of those boxes.

They look like teeth. They function like teeth. They integrate to the jawbone and they don't cause other concerns with melting bone with overload in the body.

And we didn't talk about this, but also that conductivity in the mouth can throw off energy production and even the way other systems are operating in the body.

So I prefer not to have something conductive in my body if at all possible. Biocompatibility is important. Looking like nature, chewing like nature, feeling like it's the right thing, and allowing the body to continue working well are all aims of what we do when replacing teeth.

Choosing the Best Biocompatible Tooth Replacement

Thankfully, we have options today that do all of those things that can deliver chewing and smiling like you want, even after losing a tooth, and it can also make you feel good because you're making a good choice for your body and your overall health.

all exactly what we all want. So check it out if you need more information please check out TotalCareDental.com. We have all sorts of information about implants on there, guides you can get for free.

Check it out and learn more.