

## Carlecast #7: Dental implants

It's Carlecast number seven. Dental implants. Here's something for us to chew on.

**David Graham:** And welcome back to this, our seventh Carlecast. I'm Dr. David Graham, your host. Once again we are from the Carle Clinic in Urbana, Illinois, offering you this Podcast to give you information regarding topics about your health - doctors talking with doctors about medicine that interests you.

As I said before, we're really glad to have you back today; we've got something interesting to go over. You know, when people think about issues regarding their teeth, and as they get older, maybe lack of teeth or maybe depending on the sport you're in, at a younger age - usually all people think about are dentures, but there are some new, interesting things coming up that are more and more widely accepted - dental implants. That is to say, actual pieces of metal are implanted in your jaw that then artificial teeth can be plugged into. Bridges can be made with actual full dentures, which can be clipped into place so we never have to worry about those obnoxious pastes, powders and films that you hear all the commercials about.

Today, I've got Dr. Steven Sabol, an oral maxillofacial surgeon, to talk about this in great detail. I think you'll find it really interesting. Glad to have you back today and let's get right to Dr. Steven Sabol.

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**David Graham:** I'm here today with Dr. Steven Sabol. Dr. Sabol has his DDS dental degree and went through a fellowship in oral maxillofacial surgery, and actually then became board certified in oral and maxillofacial surgery — one of those long phrases that we shorten wherever we can. So someone tells you they're certified in oral surgery, there's a lot more to the title than that. Dr. Sabol is kind enough to take time out of his day today to talk to us about dental implants, which is a technology that I would bet is not as well known as it probably ought to be. So Dr. Sabol, tell me what you mean by dental implants?

**Steven Sabol:** A dental implant is a titanium post that we can put in the jaw bone if somebody is missing a tooth, missing several teeth, or missing all their teeth. And we can put crowns on these posts that look and function just like natural teeth. Or if somebody is missing all their teeth and they're worried about dentures over a period of time, dental implants can be used.

When you wear dentures, your jaw bone shrinks. As you get older and you get to the point where you can't wear your dentures, we can put posts into the jaw, let that heal for several months where they become incorporated in the jaw. Then, your dentures can be modified so that they actually snap into place. So, there's many different uses for implants.

**David Graham:** So, to talk about the dentures a little bit. There's a lot of advertising certainly that you see on TV and radio about wanting to hold your dentures into place and, "Do you use this paste?" or "Do you use this film to hold your dentures better?" It sounds to me like if someone is having a real problem with loose dentures, this might be a technology that would not only keep them in good position, but with a lot less hassle long-term.

**Steven Sabol:** That's correct. People you know, as they get older, they're having a difficult time wearing their dentures because of the jaw shrinkage. This provides them something where they can feel confident. They can go into social situations and talk and laugh and have a good time without worrying about their dentures flying out of their mouth, or they can chew different kinds of foods that they couldn't chew anymore because their dentures moved around, they hurt or they don't fit well. Putting implants in and giving them something to snap their denture into place, gives them their lifestyle back. They have a better social life, they can eat things they want to eat and carry on that way.

**David Graham:** And then you mentioned something that kind of struck a little near and dear to my heart, and that's the whole idea of crowns. Now, I've got a couple of crowns, and no one ever said to me that there could be some chance that these crowns might fail over time.

**Steven Sabol:** Well, crowns, bridges, they've always been talked about as being permanent. They're actually not really permanent because the average crown and the average bridge will usually last about 10 years. What happens is that the crown is metal (even porcelain crowns usually have metal underneath) and there's a margin where it meets the tooth and the tooth always decays at that margin underneath, no matter how good the crown is. At some point, the crown has to be replaced. Sometimes you can replace a crown that has decay underneath it and sometimes the decay is so bad that you can't actually use the tooth anymore and you have to have the tooth taken out. In those kinds of situations, once you take the tooth out you let that area heal for about three months and where the roots were, that will all fill back in the jaw bone. And then we can go and drill a hole into the bone and put an implant in there and let that heal. And then you can have a crown put on that metal post that we put in and it looks and

functions just like a natural tooth. And you take care of it just like a natural tooth - where you brush and floss it and see a dentist for a regular checkup just like all of your other teeth.

**David Graham:** So the implants that go in the jaw, and we'll talk a little bit more about how this is done later. These are permanent.

**Steven Sabol:** Well these are permanent, but again, we can't say that word *permanent*. We know they last up to 40-some years now, because that's how long they've been doing them in this particular way. So that's about as permanent as you can get. They can't decay like a natural tooth underneath the crown because the crown is sitting on a metal post and there's really no place to decay. You *can* lose these things to gum disease just like you can natural teeth. So, you do have to take care of them just like teeth. But the studies are starting to show that these are actually more resistant to gum disease than natural teeth.

**David Graham:** So now we've talked about dentures, we've talked about crowns, and you did mention at one point, bridges?

**Steven Sabol:** Yes. A bridge is for if you're missing one or two teeth. What the dentist has done in the past — and what the best treatment was in the past — was to use the teeth on either side of the space and cut those teeth down into more of a peg shape. Then caps were put over those teeth connecting all the teeth that were missing in a row. So, you would have three or four teeth connected, spanning that space where you are missing the teeth underneath. When those bridges fail now, and if they can't use those teeth again to make another bridge after it decays and fails, then dental implants might be an option for you to replace the missing teeth.

**David Graham:** Now those are every day type of dental things. Are there some, shall we say, more extreme situations that a person could find themselves in, where implants might be helpful. That is to say, if someone were in a bad car accident or have some sort of trauma to the face, is that another use for implants?

**Steven Sabol:** Sure, that's another use. In the past, before seatbelts really became used a lot and before airbags, a lot of people would be in car accidents and they would smash their face on the dashboard or steering wheel, knocking out their front teeth and some of that bone. Those people now are wearing partial dentures or they may be using bridges, and they might want to replace their denture because they don't like the way it feels sitting on the roof of their mouth or such. And there are ways to put permanent teeth again with the implants and put individual crowns or bridges in to replace missing teeth. People are in sporting accidents where

they had a tooth or two knocked out and replaced, and over time, those may fail so those can be replaced with implants. There's a lot of different things that we can do. People also might have cancer and end up having some of the tissue taken out to remove the cancer and then lose part of their jawbone. We can rebuild the jaws with hipbone, and there's other ways to do that. And then these people can have implants put in and then wear dentures or replace missing teeth from those types of situations.

**David Graham:** Now I know this is a little more work to go through to get done than just a regular set of dentures or crown. Can you tell me a little bit the process of how a person gets implants?

**Steven Sabol:** Well, a patient is going to come in, we're going to do an evaluation and we'll do a clinical exam and see what's there. We'll take X-rays and see how much bone is there. You do need a certain amount of bone, width-wise and height-wise, to put implants in. And if you're a candidate and you do have adequate bones and such, then you may be a candidate to put the implants in. Also, we'll look at your medical history. There are some situations where if you've had radiation to the jaws, or if you're a brittle diabetic and not very well controlled, you may not be a candidate for implants. But most people would be good candidates for implants.

When we do put implants in we can deal with local anesthetic, like when you go to your regular dentist and get shots to numb your jaw — we can do it that way. A lot of people don't like to do that and we can put an IV in your arm and give you some medicine where you take a nap and do it that way. It's usually all outpatient surgery in the office, so there's many different ways to do it.

When we're putting implants in we always work with a dentist. We basically put the implant into the jawbone, get that to heal over a period of three to four months, and at that point then you'll see your dentist to have either a cap or crown put on, or a bridge, or a denture that's going to snap in place. Whatever is going to be replaced tooth-wise, the dentist is going to do. So we always do this as a team. Anytime we're going to do an implant, we always talk to your dentist. If you don't have a dentist, then we'll set you up with a dentist, but it's done as a team. So that's basically how things are done.

**David Graham:** Now are most dentists pretty comfortable with the technology of implants that they're willing to send people to you to be evaluated? Or is this something that as a patient, if you're better informed, you can ask and say, "Hey, what about this?"

**Steven Sabol:** Well, most dentists nowadays are familiar with implants because they're pretty much the standard of care. If somebody is missing a tooth today, an implant would be the recommended treatment. Twenty years ago, the recommended treatment for a missing tooth would have been a bridge, but that's been changed to the implant now. That really is the standard of care. So, most contemporary dentists are going to be familiar with this type of implant procedure and restoration.

**David Graham:** And oral maxillofacial surgeons are fairly commonly available around the country?

**Steven Sabol:** Yes, oral maxillofacial surgeons are trained in this type of procedure and that's one of the main things that we do.

**David Graham:** Well, that's fantastic Dr. Sabol! Anything new on the horizon in terms of different ways we're doing things, or new equipment, materials that are being used?

**Steven Sabol:** Well, implants nowadays compared to the original implants have a rough surface on them or a type of coating on the implant that's put in, and that makes the implant heal in the bone much faster and it makes it heal much more hard and much more dense (the attachment of the bone to the implant) so they work very well. They're usually about 98 percent successful today. There are some situations where they don't fuse right away when we put them in. If that's the case, we take an implant out if its not looking like its going to heal well. We let that bone heal for a couple of months and put another one in, and that will have about another 98 percent chance of working. So they work very well, and once they're in there, they really work well.

**David Graham:** Well that's fantastic. Dr. Sabol, I'd really like to thank you for your time this afternoon. It sounds to me like this is the kind of area that's really going to thrive in the years to come. And something that as patients learn more about and get more educated on, they may be asking more for them on their own, as well. Any other ideas or things you'd like to mention before we call it a day?

**Steven Sabol:** No, I think we've covered the topic quite well.

**David Graham:** I really like the fact that you work as a team with the people's dentists; they don't start feeling like you're trying to steal their patients away from them.

**Steven Sabol:** No, no, no, we're not trying to take patients from your dentist because we have to work as a team. We can't do this by ourselves.

And the dentist generally can't do the implant part by themselves. So we always work as a team and we always plan things out as a team.

**David Graham:** Well, once again, thank you for your time, hopefully we'll have a chance to talk about something here in the near future again.

**Steven Sabol:** Thank you.

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**David Graham:** Well, once again I really have to thank Dr. Steven Sabol about that really interesting discussion regarding dental implants.

You know, a lot of people ask me why I take time to do this, and I've got to be honest: I probably learn as much from doing these things as you folks do. As physicians, we find an area of medicine that we're really interested in, we spend a lot of time doing that, we know some of most of the other areas of medicine, but we always have more to learn. I get to use this as much of a learning session as you folks do. I always get information out of these things that I get to use everyday in my practice talking with other patients. I hope you folks get the information from here to use everyday in your life, as well. So the question I ask almost every episode, "What else is going on in medicine this week?"

We were talking about teeth with Dr. Sabol, so I had to find another story talking about teeth, and interestingly enough not only about teeth, but something other that's really nice to deal with as well. Red wine.

Gum disease in periodontitis is really a common cause of tooth loss. What happens is bacteria stimulate the immune cells, they release oxygen-free radicals, they injure the gums, they loosen the teeth, and they also affect the bones, which loosens the teeth. Statistics really are amazing: 14 percent of people between the ages of 21 and 50 have periodontitis. 65 percent of people over 50 have this disease. That's a staggering percentage of people who have this disease. Maybe it doesn't affect everybody to get to the point where they start losing teeth, but it's certainly something to worry about, and now it makes a lot more sense when I go to my dentist and they're always checking my gums. Well, so the question becomes, what can we do to reduce the oxygen-free radicals to settle down the inflammation? And we get to that favorite thing, antioxidants.

There's a team in Quebec, at Universite Laval, I probably butchered that name, bear with me, I didn't minor in French or major in French. But anyway, they looked at some things and the study was reported at the American Association for Dental Research in Orlando, Florida. There's a

type of antioxidant called polyphenols. And we've known in various research in the past, that polyphenols can, what we call 'scavenge' oxygen-free radicals. That is to say, kind of bind them up, keep them from having bad affects on tissues. And certainly in past studies we've found that scavenging free-radicals can reduce the inflammatory response and various studies looking at gums have shown that in fact polyphenols can scavenge the free-radicals, reduce the inflammatory responses both by bacteria that cause periodontitis.

Well, there's a lot of polyphenols. They've been tested in cranberry extracts, and certainly they have been found in the past (in extracts of cranberry juice) that polyphenols will reduce the immune response from a range of bacteria commonly found in the mouth. Now, this is not actually done in people; these are done in bacteria in dishes and looking at the free-radicals found in the petri dish.

Well, we know there are also polyphenol antioxidants in red wine. So, these people in Quebec, we all know Quebec has a large French heritage, French love red wine. So, let's test red wine for periodontitis. And the study that was presented in March at this meeting in Orlando, in fact, found that the polyphenols found in red wine also inhibited inflammation, scavenged the free-radicals and reduced the immune response from the bacteria found in the mouth. Here's the caveat: None of this has been done in people. There's no data showing that those who drink red wine are less prone to periodontitis than those who don't. So, we do need to be a little bit skeptical.

Nevertheless, there are a lot of advantages we already know about red wine. People who have at the most moderate red wine consumption, that is to say, one or two glasses a night. We know in general, they have lower death rates. Let me phrase that a little more accurately: They die at an older age. Everybody dies at some point in time, but if you drink red wine that probably gets delayed. We know that moderate red wine intake also protects against heart disease.

Why? We don't know. We're thinking it's the antioxidants, we're thinking it's the polyphenols, we're still working that out. We know that drinking red wine lowers your risk of peptic ulcer. We know that nurses studied at the Harvard School of Public Health cut their risk of diabetes by 50 percent if they drink red wine. A lot of positive results from red wine, maybe it helps us keep our teeth a little longer, as well. Sounds like something in moderation, one or two glasses a night, may be worthwhile considering.

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**David Graham:** Well, this brings us to the end of our seventh Carlecast. The shows just keep coming. I keep looking for new topics that I hope interest you and I hope you let me know if, in fact, they interest you or if there are other topics you would like to hear about as well. Once again, you can go to our web page, [www.carlecast.com](http://www.carlecast.com), click on the “contact us” button on that web page. Send us ideas you may want to hear about in terms of medical topics. If there's an area you'd love to hear an interview with an expert in the field on, I'd love to help you out and just let me know what it is. I'm certainly going to keep searching for the interesting things and hope they are interesting for you, as well. Like I said earlier on, I learn a lot from every one of these interviews I do. I get a little benefit out of this too. I just hope you get the same level of benefit I do.

I'll also keep looking for the side stories. I try and connect these with the interviews that I do, and the general topics I'm dealing with. A lot of times it's successful. I've got to be honest with you, there's a lot of stories that I can find and maybe relate to an interview that aren't even nearly near the level of approaching the side story.

For example, I was looking for stories about teeth to try and add into today. I found some really interesting things: Scientists that are putting ID implants in teeth so you never really get lost, I guess. People that have noticed that bacteria on toothbrushes can cause tooth decay, which really is not going to make a lot of dentists really happy. And probably the one that I found maybe most disturbing: a designer whose worked up a prototype of a tongue piercing with a brush to it, so you can brush your teeth with your pierced tongue. Not even ready for the point for me to talk about in any sort of detail.

But anyway, back to what I was saying. If there's a medical topic you want to hear about, let me know. You can contact me through the web page. If there's a side story that strikes you as funny, strikes you as interesting, I'd love to hear about that as well. I'll even try and do some extra searching to gather some more information about things. Go to our web page; let us know.

We're really happy you joined us for this interview today with Dr. Steve Sabol from the Carle Clinic Division of Oral and Maxillofacial Surgery. I think I said earlier on that he gives lots of good information and things to think about.

You can find this podcast, of course, on our web page. You can find all our past podcasts on the web page, along with transcriptions. Now, if you don't want to keep listening to it time and time again, you can always print out

the transcription and have that available in your files. You can find us on the iTunes medical store, you can add a search for me, Dr. David Graham, or search for Carle, and we'll pop up right at the top of the search list. We're also available on most of the other common podcast registries: Podcast Alley, Podcast Pickle, Yahoo! Podcast. Just search for Carle under any of those and you'll find us as well. The idea by going to any of these registries or the iTunes music store is that you don't have to wait and wonder if there's a new show out. If you fire up your podcast-catching software, it'll automatically download any new show that's available for you.

Once again, I have to thank Derek Miller, the producer and musician involved with the pen machine sessions - the music you hear at the beginning, middle and end of the shows. He has been kind enough to provide all this music without any sort of copyright charges under the Podstate Music Network, an idea that's really growing in strength and popularity. Well, I'm looking at new topics for shows; I think I've got some interesting things lined up for you. I think you'll keep looking out for us. I am, once again, Dr. David Graham of the Carle Clinic in Urbana, Illinois. Hope you join us next time for Carlecast #8. In the meantime, stay healthy.