



River City

Oral & Maxillofacial Surgery

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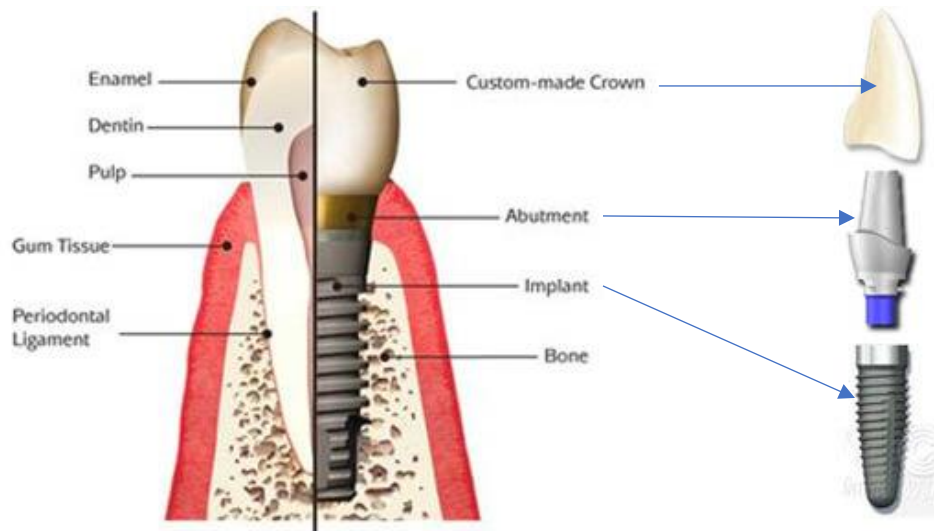
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Dental Implant Surgery

Thank you for your visit! This document is designed to give you additional information about dental implants and how our company handles implants. Implant surgery can be expensive and time consuming. It is only fair that you know what to expect. Please read this document before surgery and let us know if you have any questions.

Implant Parts & Pieces

A dental implant is only the screw that goes in the bone. An abutment goes on top of the implant and the tooth or teeth go on the abutment. When a patient refers to a dental implant they are usually talking about the whole thing – implant, abutment, and prosthetic tooth/teeth.



If an implant is tight enough when we place it and has good bone around it we may place an abutment at the same time. If the implant was not as tight, needed a bone graft, or had some other issue we may “bury” the implant under the gums, let it heal, then schedule a second surgery to place an abutment.

In most cases we (River City OMS) place the implant and a healing abutment and the restoring doctor places the final abutment and tooth/teeth. If you are replacing all of your teeth with implants we may place a special final abutment designed for those cases.

A healing abutment is just a round cylinder designed to create a hole in the gums. After about 2 weeks the healing abutment can be removed and there will be a nice hole clean hole directly through the gums to the inside of the implant. The restoring doctor can remove the healing abutment, make a mold or scan of the implant and teeth, then place your new prosthetic tooth/teeth – that process may take more than one visit.



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A final abutment is shaped to hold the final tooth/teeth. If you're only having one tooth replaced the final abutment looks like a tooth cut for a crown. If you're having multiple teeth replaced the final abutment may not even look like a tooth.

Implant Brands

There are many, many brands of implants on the market. The vast majority of implants are made of titanium because the human body accepts titanium better than most other metals. Implant brands vary in shape, thread pitch, diameter, length, and the internal connection used to connect the abutment to the implant. Generally you cannot swap parts from one brand to the other.

River City OMS uses **NobelBiocare**, **Straumann**, **Dentsply Astra**, and **Keystone Paltop** implants. Each company has advantages for certain cases and different restoring doctors are comfortable with different brands of implant. We will work with your restorative doctor to choose the appropriate brand for your case. Of course, you can also request a particular brand.

Implant Healing

Implant dentistry is very competitive. You see ads everywhere. Everyone brags about how fast they can get your implants done. Sometimes going as fast as possible is not the best idea.

The day your implant goes in it is held in place by the screw threads on the outside, exactly the same way a wood screw stays in a piece of wood. Over time, though, the bone grows into the microscopic pores in the metal and the implant becomes "integrated", locked into the bone. Once integrated the screw threads on the outside of the implant are irrelevant. A healthy integrated implant cannot be unscrewed unless we use a lot of force – which usually breaks something before the implant loosens. A healthy integrated implant has to be cut out rather than unscrewed.

An implant needs a minimum of 6 weeks to integrate before the final teeth can be placed. If your implant was not as tight, required a bone graft at the time of placement, or had other minor compromises we may wait 2-4 months or even longer before we use it.

Delayed vs Immediate Implants

When we take out your tooth/teeth we may allow weeks or months of healing before we place the implant. This is called a delayed implant. Delayed implants may be the best choice for a highly esthetic case or in a place where the bone has been damaged by gum disease or infection.

An implant placed into a tooth socket the day a tooth is removed is called an immediate implant. Immediate implants can be used whether we're replacing one tooth, multiple teeth, or all the teeth. It is not always possible or wise to place an immediate implant. Sometimes we plan your case for an immediate implant and have to cancel during the surgery. For example, if the socket bone breaks during



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extraction or the socket bone is not thick enough we may decide not to place an immediate implant. Sometimes the restorative plan affects whether or not we can place an immediate implant – the site requirements are different for a single tooth implant in the front of your mouth versus implants that will be used to hold dentures in place. Sometimes we decide to place a bone graft in the socket if an immediate implant is not possible.

Immediate Temporary Teeth

It is possible to place temporary teeth on an implant the day the implant goes in. This is called an immediate temporary. If you are only having one single tooth replaced with an implant the immediate temporary tooth is there for esthetics. It is not for eating and it is not strong enough to chew on. We usually only do this for implants in the front of your mouth. The immediate temporary tooth would be a little bit shorter than normal so that you don't bite on. Once the implant has time to heal a final prosthetic tooth will be made.

If we are replacing all of the teeth in one of your jaws with screwed-in teeth we can place immediate temporary teeth the day we place the implants. This is commonly called "All-on-4" or "teeth in a day". You can eat a pureed and very soft diet with these teeth during the implant healing phase.

Replacing All Your Teeth With Screwed in Implant Teeth (aka "All-on-4", "teeth in a day", or a hybrid)

If we are replacing all of your teeth with implants you need at least 4 implants per jaw. Six implants per jaw is even nicer but can require bone grafts and additional healing & treatment time.

In these cases your restorative doctor will make a denture for each jaw we are replacing. After the implants are in place the denture will be modified to screw into the implants. If for some reason we cannot place 4 solid, strong, adequately spaced apart implants on the day of surgery then you may have to wear a denture for a 2-8 months while the implants heal. **You need to understand that if there is difficulty in your surgery the fallback plan is for you to wear a regular, traditional denture until we can get 4 good implants in place.**

One advantage to placing 6 instead of 4 implants when replacing all the teeth in a jaw with screwed-in implant teeth is that those extra implants meant there is an even better chance we will be able to place at least 4 tight implants on the day of surgery and you can have screwed-in temporary teeth instead of wearing a regular denture during healing. If you have 6 implants placed we can bury one or two during healing and still have 4 good ones to work with.

At River City OMS we will place 4 implants in their normal positions for screwed-in teeth. If we place an implant that we believe will heal and be usable we will leave it there even if it is not tight enough or otherwise ready to use on the day of surgery. Some patients will agree and instruct us to place a 5th or 6th implant, even if the original plan was only 4, so that they can have screwed in temporary teeth instead of a denture on the day of surgery. Other patients will instruct us to only place 4 good implants



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and if one or more of those implants is not immediately usable the patient agrees to wear a denture during healing. In extremely rare cases a patient may agree to have 6 or more implants placed but we still cannot get 4 usable implants on the day of surgery and that patient will have to wear a denture during healing.

No matter who performs your surgery there is ALWAYS at least a small chance that you will have to wear a denture during healing. Be suspicious of any surgeon who tells you otherwise.

Success and Failure

Implant success rates are very high. About 95% of implants that make it through the initial healing are still in use 20 years later. If an implant is going to fail it will most likely completely fail or show signs of failure in the first 6-8 weeks.

The most common type of implant failure is a biologic failure, meaning the implant fails to integrate or loses its integration to the bone over time. A less common failure is a mechanic failure in which one of the mechanical parts physically breaks.

Causes of Biologic Implant Failure

Implants do not get cavities. Instead, biologic implant failures are due to wound healing, bone, and gum problems. Most failures happen early and somewhat rapidly but in some cases the failures are slow and the implant may not completely fail for years. Things that are or may be related to implant failure include:

1. Infection – an infection around the time the implant is placed can cause a rapid failure.
2. Peri-implantitis – this is gum disease around an implant. It's like gingivitis and periodontitis around natural teeth and is almost always due to poor cleaning & maintenance of the implants.
3. Smoking
4. Diabetes
5. Vascular disease – blood is required for healing. Patients who have blood flow problems in other parts of their body may have blood flow problems to their jaws.
6. Immunosuppression – your body's immune system helps surgical sites heal. Immunosuppressed patients include: transplant patients, patients with autoimmune conditions, liver or kidney failure patients, cancer patients, or HIV/AIDS patients.
7. Chronic steroid use – corticosteroids, such as prednisone, depress the immune system and alter bone physiology.
8. **Penicillin/amoxicillin allergy – there are articles in the scientific literature that have studied thousands of implants and found a three times higher implant failure rate in penicillin allergic patients. No one understands why this happens but it is a known and developing concern.**



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9. Long term use of bisphosphonate drugs and other drugs that affect bone metabolism will increase implant failure rates. In some cases River City OMS may refuse to place dental implants in patients who have taken these drugs. Please let us know if you have taken any of the following drugs of concern:

- Boniva
- Fosamax
- Actonel
- Aredia
- Zometa
- Reclast
- Alendronate
- Denosumab
- Prolia
- Xgeva
- Bevacizumab
- Avastin

The more of these risk factors you have and/or the more severe they are the more likely you are to have a failure.

Finally, **radiation therapy to the jaws increases implant failure**. Please let us know if you have ever had radiation to your head, neck, or face. It does not matter how long ago you had radiation. Even if the radiation was aimed at your brain, sinuses, or throat if it hit your jaws you will have an increased chance of implant failure. If your jaws or mouth were the target of radiation, River City OMS will not place implants in your mouth.

When an Implant Fails

When an implant fails it will be removed. Sometimes another implant can be placed immediately in the same spot and do great. More commonly we will have to allow the bone to heal then come back and replace the implant. We may also have to add bone or gum grafts to the site in order to place another implant.

If you undergo a “teeth in a day” procedure and have a full jaw of temporary teeth screwed to your implants the same day the implants are placed then one of the implants begins to fail during healing we may leave the failing implant in place until the other implants have gone through their full healing time. During this healing time you may have to take antibiotics to keep the failing implant from being infected. After the other implants have healed we can safely remove the screwed-in temporary teeth and treat or remove the failing implant.

Success rates decrease each time we replace an implant in the same area. In general, River City OMS is willing to replace an implant as many times as you want to but you have to understand the chance of it working goes down each time.