

INFORMED CONSENT

The intent of this document is to inform you of the myriad of possibilities that exist as potential problems when undergoing dental restorative and prosthodontic treatment. Many of the problems or conditions mentioned occur only occasionally or rarely. There may be other inherent risks not discussed in this document. You should be aware that problems can occur, and that every effort will be made to treat the conditions that develop or we will refer you to the appropriate health care professional.

The practice of dentistry is not an exact science and therefore, reputable practitioners cannot guarantee results. Please understand that no one can promise that any treatment or dental procedure will be successful or that any risk, complication or injury will not occur.

You should understand that unforeseen conditions or circumstances might arise during the course of the treatment. The following information is routine for anyone considering restorative and prosthodontic treatment in our office. While recognizing the benefits of a pleasing smile and well functioning teeth, you should also be aware that dental treatment, like any treatment of the body, has some inherent risks and limitations. These are seldom enough to contraindicate treatment, but should be considered in making a decision. As in all other healing arts, results cannot be guaranteed.

INITIAL DIAGNOSTIC PROCEDURES: In order to help formulate treatment recommendations, the following diagnostic procedures may be performed: (1) a medical and dental history, (2) discussion of your dental problems, concerns and desires, (3) x-rays, (4) plaster casts of the mouth and teeth, (5) examination of the mouth and associated structures, (6) photographs, and (7) conference with previous or concurrent treating health professionals. If additional diagnostic procedures or consultations are indicated, they will be discussed with you.

TREATMENT RECOMMENDATIONS: Are based on information gained from initial diagnostic procedures and previous experience and may vary for similar situations. Therefore, second opinions are often appropriate. The ultimate goal of treatment is to assist you in attaining optimum dental health and appearance. We will discuss with you the most appropriate and ideal treatment plan as well as reasonable alternative treatment plans. In those instances where supporting structures are compromised, recommendations can be made only after consultation with specialists. We will also inform you of the likely dental prognosis for each of these treatment plans and a dental prognosis if no treatment is initiated at this time.

ESTHETIC CONSIDERATIONS: It is our intent to contribute all of our technical and artistic capabilities to help you achieve your esthetic expectations and to incorporate these factors in your final dental restorations. You are asked to provide your input during treatment, and an effort will be made to incorporate your wishes in harmony with the functional and physiological requirements of the restorations. You are certainly encouraged to bring with you any friend or relative during the final esthetic consultations. After your approval, the restorations will be finalized, after which only very minor changes can be made. Some changes in appearance may be beyond the capabilities of restorative and prosthetic dentistry and may require orthodontics, oralmaxillofacial surgery, plastic surgery, or other adjunctive measures.

REFERRAL TO OTHER SPECIALISTS: Dental restorative and prosthodontic treatment often requires concurrent treatment with other dental specialties such as:

Periodontics: Treatment of gum tissue and implant placement (performed in our office)

Endodontics: Root canal treatment (performed in our office)

Anesthesiology: Conscious sedation and vital medical monitoring (performed in our office)

Orthodontics: Straightening of teeth (Invisalign* performed in our office)

Oral Surgery: Extractions, jaw surgery, jaw augmentation (performed in our office)

FIXED PROSTHODONTICS

CROWNS AND FIXED BRIDGES: Dental crowns are restorations that cover up or cap teeth, restoring them to their natural size, shape or color. The crown not only improves function and appearance, but can also strengthen a tooth that might otherwise be lost. In some instances, a crown covering the entire tooth may not be necessary, and an inlay, onlay or porcelain laminate is recommended. Generally, an *inlay* restores the chewing part of a tooth without covering the cusps; an *onlay* restores the chewing part of a tooth including the cusps; and a *porcelain laminate* covers the front part of a tooth. For discussion in this document, the term *crown* will include inlays, onlays and porcelain laminate (veneer).

A fixed bridge is designed to replace teeth that have been lost. Aside from the obvious effects of missing teeth on personal appearance and mastication, there are other concerns. The normal pressure of chewing and stress can cause the remaining teeth to shift out of alignment, resulting in malocclusion and periodontal (gum) problems.

Dental crowns and fixed bridges are made of porcelain or acrylic resin for optimum appearance and contain an inner layer of gold alloy for strength. Crowns or bridges made entirely of gold alloy may be more advantageous on back molars that do not require porcelain for appearance. Dental inlays and onlays can be made of porcelain or gold, and porcelain laminates are made without gold. Dental crowns and fixed bridges are attached to teeth with dental cement.

POTENTIAL PROBLEMS WITH FIXED PROSTHODONTICS

Crowns and fixed bridges are used to treat problems of decay, fractured teeth, malocclusion and to protect teeth which have had root canal treatment. However, dental restorations are replacements for natural teeth and, as such, potential problems do exist.

ROOT CANAL TREATMENT: Restoration of a damaged tooth with a dental crown can be used to protect the tooth and prevent root canal treatment. However, the need for a root canal filling may not become apparent until after the crown has been placed. A root canal filling replaces the dental pulp, the innermost part of the tooth. This treatment becomes necessary when the pulp is irreversibly injured or infected from the cumulative effects of cavities, fillings or cracks in the teeth and occurs approximately 6% of the time. It normally can be performed without remaking the dental crown. However, in some instances, the longevity of the bridgework may be compromised and replacement of the dental crown or fixed bridge will be necessary.

PERIODONTAL (GUM) DISEASE: Periodontal disease (*pyorrhea*) can occur at any age, with or without crowns or fixed bridges. Properly designed crowns and bridges aid in its prevention, as does good oral hygiene, regular cleaning and dental examinations, a healthy diet, and good general health.

TOOTH PREPARATION: Preparing teeth for dental crowns or fixed bridges requires removal of old filling material, tooth decay and damaged tooth structure. In addition, the removal of undamaged tooth structure is often required to make room for the porcelain or metal. Ordinarily, a reduction of approximately 1/16th of an inch is needed to accommodate the thickness of porcelain or metal and much less for a porcelain laminate.

PROVISIONAL (TEMPORARY) RESTORATIONS: Provisional crowns and fixed bridges are used to protect the teeth and provide a satisfactory appearance while the new crowns and fixed bridges are being fabricated. Provisional restorations are usually made of acrylic resin and, as such, are not as strong as the final porcelain/metal restorations, and are attached to the teeth with a relatively weak cement to facilitate their removal at subsequent appointments. Therefore, it is important to minimize the chewing pressure on provisional restorations since they can be easily fractured and dislodged. If this does occur, call our office for a repair or recementation.

PORCELAIN FRACTURES: Porcelain is the most suitable material for the esthetic replacement of tooth enamel. Because porcelain is a "glass-like" substance, it can break. However, the strength of dental porcelain is similar to dental enamel, and the force necessary to fracture dental porcelain would usually fracture natural tooth enamel. Small porcelain fractures can be repaired, while larger fractures often require a complete new crown, veneer or fixed bridge.

DARK LINES AT GUM TISSUE: Sometimes dark lines appear at the gum line of porcelain crowns and fixed bridges. The dark line is the metal edge of the crown which is usually hidden under gum tissue, but if the gum tissue recedes, the metal will show. This can be prevented by using porcelain edges on the crowns and fixed bridges. In some situations for mechanical reasons, this design is not feasible.

Recession of the gum tissue may expose an area of the root of the tooth that is not covered by the dental crown or fixed bridge. If the root is a darker color than the crown, a dark area at the gum line will appear. This can be minimized by the use of tooth-colored filling material or placement of new crowns and/or fixed bridges that compensate for the new position of the gum tissue. In some instances, a periodontist can graft gum tissue to cover the area of recession.

STAINS AND COLOR CHANGES: All dental restorative materials can stain. The amount of stain generally depends on oral hygiene as well as consumption of coffee, tea and tobacco. Dental porcelain usually stains less than natural tooth enamel, and the stain can be removed at dental hygiene cleaning appointments. Natural teeth darken with time more than dental porcelain crowns. Therefore, at the time a new dental porcelain crown or fixed bridge is placed, it may have a good color match with adjacent natural teeth but less of a match as your natural teeth age.

BLEACHING: Bleaching provides many people with a conservative method of lightening their teeth. There is, however, no way to predict to what extent a tooth will lighten. In a few instances, teeth may be resistant to the bleaching process. Infrequently, side effects may be experienced, such as tooth hypersensitivity and soft tissue irritation.

TOOTH DECAY: Tooth decay may occur on areas of the tooth or root not covered by a dental crown. If the cement seal at the edge of the crown is lost, decay may form at the juncture of the crown and tooth. If the decay is discovered at an early stage, it can often be filled without remaking the crown or fixed bridge.

LOOSE CROWN OR LOOSE FIXED BRIDGE: A dental crown or fixed bridge may separate from the tooth if the cement is lost or the tooth fractures. Some loose crowns or tooth fractures will require a new crown or new fixed bridge.

TOOTH ROOT MOBILITY: Tooth roots may become mobile if they are not strong enough to withstand the forces on natural teeth or on crowns and fixed bridges. This occurs when gum tissue and bone around the roots have severely receded or the biting forces are excessive.

FOOD IMPACTION: As with natural teeth, food may become lodged between dental crowns and under fixed bridges. Dental crowns and fixed bridges are often connected (splinted together), creating the need for specialized hygiene techniques. Also, gum recession may make food impaction unavoidable, even with the most ideal contour of dental crowns and fixed bridges.

EXCESSIVE WEAR: Sometimes crowns and fixed bridges are used to restore badly worn teeth. If the natural teeth were worn from clenching and grinding the teeth (*bruxism*), the new crowns and fixed bridges may be subjected to the same wear or even fracture. In general, dental porcelain and metal alloys wear at a slower rate than tooth enamel. However, excessive wear of the crowns or fixed bridges may necessitate an acrylic resin mouth guard (also called a protective occlusal splint or nightguard).

TEMPOROMANDIBULAR (TMD) DYSFUNCTION: Placement of dental crowns and fixed bridges inevitably changes the occlusion (bite). On rare occasions, the change may precipitate TMD symptoms, even if it technically improves the occlusion.

REMOVABLE PROSTHODONTICS

Removable prosthodontics is the replacement of missing teeth with dentures that can be removed from the mouth. There are several types of removable dentures. They include (1) complete dentures supported by gum tissue, (2) partial dentures supported by gum tissue and remaining teeth, and (3) overdentures supported by roots of natural teeth or implants.

POTENTIAL PROBLEMS WITH REMOVABLE PROSTHODONTICS

MASTICATION, STABILITY AND RETENTION: Removable dentures, under the best of circumstances, do not have the same chewing efficiency as natural teeth. The ability to masticate food depends on the *stability* and *retention* of the dentures. Stability and retention are affected by many factors, including the attachment of the dentures to natural teeth or implants, if any; the amount and type of bone, gum tissue and saliva; and the patient's dexterity and fit of the dentures.

APPEARANCE: Properly fitting dentures will support the lips and facial contours in a manner similar to natural teeth. Dentures can often be contoured to provide additional facial support. However, excessive lip and facial support from dentures may result in a "swollen" appearance and irreversible tissue damage.

SPEECH: Removable dentures cover areas of the jaws and palate that are not normally covered. The presence of acrylic resin, metal or porcelain in these areas requires adaptation of the tongue and lips for proper speech, which may require a period of time.

DENTURE "CLICK": Denture click occurs when the upper and lower denture teeth inadvertently contact during speech or mastication. To minimize this problem, denture teeth have to be repositioned to create more space between the upper and lower teeth. However, this repositioning will decrease the amount of lip and facial tissue support afforded by the dentures. Sometimes a compromise is necessary between full facial support and denture click.

TASTE: Taste buds are located on the tongue, which is not covered by removable dentures. Contrary to popular belief, there are no taste buds on the palate. However, the acrylic resin and metal of removable dentures may affect the taste of food, especially if the dentures are not properly cleaned.

STAIN AND CLEANING: The amount of stain on dentures generally depends on oral hygiene as well as the consumption of such items as tobacco, coffee and tea. Bleach should not be used to clean removable dentures, as bleach can corrode the metal portions of the dentures and severely fade the pink acrylic resin.

DENTURE ODOR: The pink acrylic portion of the denture is a plastic material with a microscopic amount of porosity which may collect debris and odor. Also, dental plaque with its associated odor may accumulate on dentures in the same manner as it accumulates on natural teeth. It is therefore imperative to thoroughly clean your dentures for the health of your gum tissue as well as the elimination of denture odor.

CHIPPING AND WEAR: Porcelain denture teeth have the slowest rate of wear and the highest stain resistance, but they have a tendency to chip. Slight chips can be polished, but larger chips usually require replacement of the porcelain tooth on the denture. Acrylic resin denture teeth have more resistance to chipping, but they have a tendency to wear down faster than porcelain. If wear adversely affects the appearance or occlusion, the acrylic resin teeth can be replaced. Chips and cracks of the pink acrylic resin portion can usually be repaired without remaking the denture.

RELINES: The shape and size of the gum tissue as well as the bone underneath it change with time. A reline procedure readapts the pink acrylic resin portion of the denture to the new shape and size of the gum tissue. Typically, a reline is necessary every three to five years. However, this will vary depending on many individual factors.

NUMB LIP (PARESTHESIA): The nerve to the lower lip traverses throughout the lower jaw bone. If the bone covering the nerve is lost, the nerve will lie directly under the gum tissue. Pressure from a removable denture on this area may cause a numb lip in a manner similar to pressure on your elbow causing numb fingers. This problem requires selective adjustment of the denture base. In very rare and extreme situations, the nerve would have to be surgically repositioned.

FOOD IMPACTION: Removable dentures always have some space between the pink acrylic resin portion and the gum tissue. In addition, there is always some movement of the removable denture during mastication. These factors create a situation where food may accumulate between the denture and the gum tissue. Therefore, it is essential to remove the denture for cleaning on a periodic, daily basis. Removable partial dentures with metallic clasps may have additional food retention problems.

DRY MOUTH: The quantity of saliva may be adversely affected by some systemic problems, medication and/or radiation therapy around the head and neck. Lack of saliva may increase the irritation of a removable denture against the gum tissue, and lack of saliva can severely increase the incidence of tooth decay.

IMPLANTS

It should be understood that some dental implant systems or specific applications are still considered experimental. Implant longevity depends on many factors: the patient's health, the use of tobacco, alcohol, drugs and sugar, oral hygiene, the amount of quality bone, surgical compromises, the degree of biting force, etc. As with any restorative procedure, the potential exists for the fracture of an implant component or loss of the implant from the bone. Alternatives to implants and treatment plan variations will be discussed with you after consultation with the surgeon who will place the implants and continue to monitor their status.

After implant placement surgery, it is possible that the gum tissue that has been stitched together at the time of the surgery may fail to heal immediately and the line of repair may open slightly. To help prevent this, you should temporarily adhere to a soft diet and avoid pressure to the tissues by leaving the dentures out until initial healing is well advanced (usually 7-14 days). At that time your denture may be modified before resuming its wear. The denture must not be used after surgery until your dentist has modified it. This modification will occur after each phase of your surgeries. You can expect some discomfort during the initial healing following both phases of surgery. The estimated time between your Phase I surgery (implant fixture placement) and Phase II surgery (placing the parts that project through the tissue into your mouth) is three months in the lower jaw and six months in the upper jaw. You may need frequent soft linings placed in your denture prior to construction of the permanent prosthesis. To promote good healing, you should inform your dentist of any sores or ulcers that persist for 3-4 days, or any uncovering of the fixtures after the first surgery.

IMPLANT COMPLICATIONS

You may possibly experience some of the following complications following implant treatment:

1. Occasionally the individual fixtures may fail to integrate (i.e. they may not become firmly anchored in the bone). This is usually discovered at the time of the second surgery and often is the result of not strictly maintaining a soft diet during the interim between the first and second surgeries, or not returning for adjustments and additional soft linings should soreness and ulcerations occur. Any fixture that fails to integrate will be removed. At that time either a new fixture will be placed (followed by another three to six month healing time) or the prosthesis will be constructed on those fixtures that remain.

2. Fracture of abutment fixtures, screws and associated parts are rare but can happen. This could lead to the removal of the fixture, in which case you may need to have a different prosthesis constructed. It may be necessary to switch from a fixed to a removable prosthetic design.
3. Your appearance may be changed in terms of tooth contour and position and lip support. Appearance and speech changes are more likely with upper implants since it is necessary to leave the implant posts exposed for proper oral hygiene. If this creates an undesirable appearance an esthetic veneer can be made.
4. Eating excessively hard foods can lead to increased soreness under the conventional denture and possible fracture of teeth or fixture parts.
5. If the jaw joints or facial muscles are overloaded from excessively hard foods or you clench or grind your teeth, you may experience some jaw joint and facial muscular discomfort.
6. Cleaning the teeth and posts of the implant will be much different from cleaning a conventional denture. Although rare, abnormal tissue reactions and/or infections can occur around the implant parts if they are not kept clean. Like other dentures and bridges, the teeth may stain with excessive coffee, tea or smoking.
7. If your denture is of the removable type, the teeth or denture may be damaged if dropped.
8. There may be some initial discomfort around the implant post immediately after the denture is placed, which should eventually disappear.
9. The screws attaching the prosthesis to the fixture may loosen with time. They will need to be tightened if this occurs.
10. When the teeth have worn down, they will need to be replaced. This means your denture will be removed for a few days. This would, of course, be at your expense.

THE ALTERNATIVES TO IMPLANT TREATMENT ARE:

1. To not have any treatment.
2. To have a new conventional removable denture.
3. Other surgical procedures to improve residual ridge (with attendant risks and other problems).
4. Other types of implants placed (with attendant risks). In my opinion, the type of implant I have recommended represents the best treatment for you at this time.

FOR LONG-TERM SUCCESS OF IMPLANT TREATMENT YOU HAVE THE FOLLOWING RESPONSIBILITIES:

1. Follow all instructions regarding soft diet and denture use during the healing after each phase of surgery.

2. Clean the implant posts and denture thoroughly as instructed.
3. Appear for periodic examinations as advised by your dentist. There is an additional fee for this service.
4. Exercise care in not abusing the prosthesis.
5. Advise your dentist immediately if any problems are noticed.

TEMPOROMANDIBULAR DYSFUNCTION

Pain or clicking in the region of the jaw joint (*temporomandibular dysfunction or TMD*) may occur at any time during one's life. Usually multiple factors cause this condition. In many instances, jaw muscle spasms are the cause of the pain. Sometimes actual joint pathology, such as arthritis, may be present. In addition to problems with the joints themselves, TMD symptoms may be perpetuated by the habit of clenching or grinding the teeth (*bruxism*), which can occur even with optimum occlusion, normal joints and proper musculature. The emotional state of a person predisposed to this problem has a direct relationship to temporomandibular pain, so that the pain and/or clicking may fluctuate with the emotional state of the individual.

OCCLUSAL DIAGNOSTIC SPLINT THERAPY: Initial treatment with an occlusal and muscle therapy is considered an appropriate conservative and reversible approach. An occlusal diagnostic splint, also known as a bite splint, is used to determine if improvement of the occlusion or a repositioning of the jaw would improve the symptoms. If improvement is achieved with the splint, the occlusal splint may be worn continually or the occlusion corrected to eliminate the need for the splint. Occlusal splints are usually made of acrylic resin and, as such, are subject to breakage and wear; they are intended for relatively short-term use.

Correction of the occlusion may require selective grinding on the chewing surfaces of the natural teeth, crowns of fixed bridges, or may require orthodontic treatment by an orthodontist and/or surgical repositioning of the jaws or teeth by an oral surgeon.

Treatment of the musculature associated with TMD includes exercises, medication, physical therapy, acupuncture, biofeedback, nutritional counseling, ice packs, immobilization, etc. Severe TMD problems may require a coordinated treatment plan with other health professionals.

SOME INHERENT RISKS AND POTENTIAL PROBLEMS

ANESTHETICS: Most procedures are performed with a local anesthetic (commonly referred to as *Novocain*). In addition, sedative and pain medications can be used to help minimize anxiety and discomfort. In rare instances, allergic reactions may occur, so you are requested to inform our office staff of any known allergies you may have. Some sedative or pain medications may cause drowsiness. Therefore, when these medications are used, you would need to make arrangements for transportation with another person to and from the office.

PROSTHODONTIC TREATMENT DURING PREGNANCY: Elective procedures or procedures that can be easily postponed should generally wait until after childbirth. Treatment of dental pain and urgent procedures can be performed with relative safety to the fetus by minimizing the use of medications and avoiding the use of nitrous oxide and other medications with known fetal effects. Therefore, it is essential that you inform the dentist of a confirmed or suspected pregnancy.

COMMENT

State law requires that you be given certain information and that we obtain your consent prior to beginning any treatment. What you are being asked to sign is a confirmation that we have discussed the nature and purpose of the treatment, the known risks associated with the treatment, and the feasible treatment alternatives; that you have been given an opportunity to ask questions and that all your questions have been answered in a satisfactory manner.

INFORMED CONSENT AND AUTHORIZATION

I certify that I have read and understand all nine pages of the *Informed Consent* which outlines the general treatment considerations as well as the potential problems and complications of restorative/prosthetic treatment. I understand that potential complications and problems may include, but are not limited to, those described in this document. I understand that during and following the contemplated procedure, conditions may become apparent that warrant additional or alternative treatment pertinent to the success of comprehensive treatment.

Recognizing the potential problems and risks of restorative/prosthetic treatment, authorization is given for dental treatment to be rendered by the dentist and office staff. I also approve any modification in design, materials or care, if it is felt this is for my best interest. In addition, I consent that photographs and/or videos of the procedures may be shown for teaching purposes.

SIGNED: _____ DATED: _____

BUILDING FUNCTIONAL ESTHETICS

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