

DENTAL CARE AGREEMENT



Phil Macavity says "Just Floss 'Em"

Neil S. McLeod D.D.S., ("Doctor"), and the undersigned patient ("Patient") have agreed as follows:

ARTICLE 1. IT IS UNDERSTOOD THAT ANY DISPUTE AS TO MEDICAL MALPRACTICE., THAT IS AS TO WHETHER ANY MEDICAL SERVICES RENDERED UNDER THIS CONTRACT WERE UNNECESSARY OR UNAUTHORIZED OR WERE IMPROPERLY, NEGLIGENTLY OR INCOMPETENTLY RENDERED, WILL BE DETERMINED BY SUBMISSION TO ARBITRATION AS PROVIDED BY CALIFORNIA LAW, AND NOT BY A LAWSUIT OR RESORT TO COURT PROCESS EXCEPT AS CALIFORNIA LAW PROVIDES FOR JUDICIAL REVIEW OF ARBITRATION PROCEEDINGS. BOTH PARTIES TO THIS CONTRACT, BY ENTERING INTO IT, ARE GIVING UP THEIR CONSTITUTIONAL RIGHT TO HAVE SUCH DISPUTE DECIDED IN A COURT OF LAW BEFORE A JURY, AND INSTEAD ARE ACCEPTING THE USE OF ARBITRATION.

ARTICLE 2. In the event of any claim, demand, controversy or dispute the essential nature of which involves personal injury, malpractice or any tort, by Patient, his dependents, whether or not minors, heirs at law or personal representatives against Doctor or any of Doctor's agents, representatives, employees, successors in interests, assigns or associates agreeing in writing to be bound by the arbitration provisions of this agreement ("Affiliates"), THE SOLE METHOD FOR RESOLVING SUCH DISPUTE SHALL BE BY BINDING ARIBTRATION ADMINISTERED BY THE AMERICAN ARBITRATION ASSOCIATION through an appropriate medical panel designated by said Association and in accordance with the Commercial Arbitration Rules of the American Arbitration Association. It is agreed that all parties relevant to a full and complete settlement of any dispute subject to this agreement may be intervened or joined. Notwithstanding any provision herein, all matters of collection or payment for professional services shall be excluded from arbitration and shall not be joined with any matters subject to resolution by arbitration. It is understood and agreed that the provisions of this agreement constitute an intergral part of a contract for dental care by and between Doctor and Patient.

ARTICLE 3. The prevailing party in any arbitration pursuant to this agreement shall be awarded all costs, including reasonable attorneys' fees and the arbitrators' fees, in prosecuting or defending the claim in arbitration, but not to exceed \$5, 000 in amount. Furthermore, if any action is undertaken to set aside or other wise attack the binding arbitration award, the losing party in the court action shall bear all the prevailing party's costs, including reasonable attorneys' fees.

ARTICLE 4. Any party initiating arbitration under this agreement shall file with his petition a bond or cash surety in an amount equal to Five Hundred Dollars (\$500.00) which shall provide security for attorneys' fees and costs in the event that the moving party should not prevail.

ARTICLE 5. This agreement shall govern all future services rendered to Patient by Doctor and Doctor's Affiliates. Execution of this agreement is a precondition to the furnishing of services by Doctor, but this agreement may be rescinded by written notice from Patient or Patient's representative to Doctor within thirty days of signature. After those thirty days, this agreement may be changed or revoked only by a written revocation signed by both parties.

ARTICLE 6. Doctor hereby agrees to render dental care and service to Patient. Patient agrees to pay Doctor promptly upon the rendering of a bill at the currently prevailing rates, or to cooperate with Doctor in obtaining payment from third party payors.

ARTICLE 7. Except for the fact that Doctor has indicated professional services will not be rendered to Patient unless this agreement is executed, Doctor has made no other representations or statements, oral or written, to induce Patient to execute this agreement.

ARTICLE 8. In the event that any provision of this agreement shall be void or unenforceable for any reason whatsoever, then such provisions shall be stricken and of no force and effect. The remaining provisions of this agreement, however, shall continue in full force and effect, and to the extent required, shall be modified to preserve their validity. This agreement shall be governed by California law.

THIS IS A BINDING LEGAL DOCUMENT WHICH MAY HAVE AN IMPORTANT EFFECT ON YOUR LEGAL RIGHTS. CONSULT YOUR ATTORNEY ON ANY QUESTIONS YOU MAY HAVE.

NOTICE: BY SIGNING THIS CONTRACT YOU ARE AGREEING TO HAVE ANY ISSUE OF MEDICAL MALPRACTICE DECIDED BY NEUTRAL ARBITRATION AND YOU ARE GIVING UP YOUR RIGHT TO A JURY OR COURT TRIAL. SEE ARTICLE 1 OF THIS CONTRACT. I HAVE READ AND UNDERSTOOD THE ABOVE

PATIENT'S SIGNATURE

DATE OF SIGNING

AGENT OR REPRESENTATIVE

DOCTOR

RELATIONSHIP TO PATIENT



PATIENT INFORMATION

(This information is necessary for our files and will be considered **CONFIDENTIAL**)

Date _____

Patient's Name _____ Age _____ Patient's Birthday _____ Male Female
LAST FIRST INITIAL

If patient is a minor, give name of parent or legal guardian _____

Relationship _____

Residence Address _____

For how long? _____

Own Rent

Patient is: Married Single Divorced Separated Widowed Minor

Email _____

Driver's License No. _____

Social Security No. _____

Res. Phone () _____

Bank _____

Account No. _____

How long? _____

Employed by _____

How long? _____

Occupation _____

Business Address _____

Bus. Phone () _____

STREET

CITY

ZIP

Spouse's Name _____

Driver's License No. _____

Soc. Sec. No. _____

Employed by _____

How long? _____

Occupation _____

Business Address _____

Bus. Phone () _____

STREET

CITY

ZIP

Name of nearest relative not living with you _____

Relationship _____

Complete Address _____

Res. Phone () _____

STREET

CITY

ZIP

Name of Physician _____

ADDRESS

CITY

I have no physician ()

TELEPHONE

Former Dentist _____

ADDRESS

CITY

()

TELEPHONE

Why are you changing dentists? _____

Purpose of Appointment _____

Is this office visit for Emergency Dental Care? Yes No If yes, explain: _____

School Children Attend _____

Whom may we thank for referring you? _____

FINANCIAL INFORMATION

Person responsible for this account _____

Relationship _____

Address _____

STREET

CITY

ZIP ()

TELEPHONE

PREFERENCE OF PAYMENT: Cash on day of treatment Visa No.

EXPIRATION DATE

State Aid No.

Mastercard No.

EXPIRATION DATE

Name of insurance company (primary insurance) _____

INSURED PERSON'S NAME _____

BIRTHDATE _____

RELATIONSHIP _____

SOCIAL SECURITY NO. _____

NAME OF GROUP DENTAL PLAN _____

GROUP NO. _____

PLAN NO. _____

NAME OF UNION _____

LOCAL _____

Name of insurance company (secondary insurance) _____

INSURED PERSON'S NAME _____

BIRTHDATE _____

RELATIONSHIP _____

SOCIAL SECURITY NO. _____

NAME OF GROUP DENTAL PLAN _____

GROUP NO. _____

PLAN NO. _____

NAME OF UNION _____

LOCAL _____

TERMS & CONDITIONS

As a condition of treatment by this office, I understand financial arrangements must be made in advance. The practice depends upon reimbursement from the patients for the costs incurred in their care and financial responsibility on the part of each patient must be determined before treatment.

All emergency dental services, or any dental service performed without prior financial arrangements, must be paid for in cash at the time services are performed.

I understand that dental services furnished to me are charged directly to me and that I am personally responsible for payment of all dental services. If I carry insurance, I understand that this office will help prepare my insurance forms to assist in making collections from insurance companies and will credit such collections to my account.

However, this dental office cannot render services on the assumption that charges will be paid by an insurance company.

Assignment of Insurance: I hereby authorize my insurance company to pay directly to my dentist benefits accruing to me under my policy.

A service charge of 1 1/2% per month (18% per annum) (but in no event more than the maximum rate permissible under state law) will be charged on the unpaid principal balance on all accounts not paid within 60 days of treatment date.

I understand that the fee estimate listed for this dental case can only be extended for a period of six months from the date of the patient's examination.

In consideration of the professional services rendered to me, or at my request, by the Doctor and/or his staff, I agree to pay, therefore, the reasonable value of said services to said Doctor, or his assignee, at the time said services are rendered, or within five (5) days of billing if credit shall be extended. I further agree that the reasonable value of said services shall be billed unless objected to by me, in writing, within the time for payment thereof. Additionally, I agree that a waiver for any breach of any term or condition hereunder shall not constitute a waiver of any further term or condition. I further agree that in the event that either this office or I institute any legal proceedings with respect to amounts owed by me for services rendered, the prevailing party in such proceedings shall be entitled to recover all costs incurred including reasonable attorney's and/or collection fees.

I grant my permission to you, or your assigns, to telephone me at home or at my work to discuss matters related to this form.

I have read the above conditions of treatment and agree to their content:

Signed _____

Date _____



HEALTH QUESTIONNAIRE

These questions are for your benefit and assure that treatment will take into consideration your past and present health status. Some questions may seem unrelated to your dental condition, but they are all associated with proper oral health care.

Please answer each question. Check the appropriate box and/or circle **Yes** or **No** where applicable. Example: Are you alive? Yes No

MEDICAL HISTORY

- Are you in good health? Yes No
- Date of last physical examination Yes No
- Are you now under the care of a physician? Yes No
If so, what is the condition being treated?
- Have you ever had any serious illness or operation? Yes No
If so, what illness or operation?
- Have you ever been hospitalized? Yes No
If so, what was the problem?
- Are you taking any medications, drugs or herbs? Yes No
If so, what? What dosage?
- Are you using any recreational drugs (marijuana, cocaine, etc.)? Yes No If so, what?
- Have you ever been premedicated with antibiotics for your dental treatment? Yes No
- Are you sensitive or allergic to any drugs or materials? Penicillin; Tetracycline; Sulfa Drugs; Aspirin; Codeine; Latex; Other Yes No
If Other, what drugs?

10. Do you have or have you had any of the following: (Please circle **Y** for Yes or **N** for No - answer all conditions):

<input type="checkbox"/> Anemia	<input type="checkbox"/> Hay Fever	<input type="checkbox"/> Head Injuries	<input type="checkbox"/> Cerebral Palsy	<input type="checkbox"/> Rheumatic Fever	<input type="checkbox"/> Sickle Cell Disease	<input type="checkbox"/> Psychiatric Treatment
<input type="checkbox"/> Herpes	<input type="checkbox"/> Glaucoma	<input type="checkbox"/> Heart Failure	<input type="checkbox"/> Drug Addiction	<input type="checkbox"/> Tuberculosis (T.B.)	<input type="checkbox"/> Cortisone Medicine	<input type="checkbox"/> Hepatitis or Jaundice
<input type="checkbox"/> Stroke	<input type="checkbox"/> Tonsillitis	<input type="checkbox"/> Scarlet Fever	<input type="checkbox"/> Kidney Disease	<input type="checkbox"/> Blood Transfusion	<input type="checkbox"/> Allergies to Metals	<input type="checkbox"/> Difficulty Swallowing
<input type="checkbox"/> Ulcers	<input type="checkbox"/> Hemophilia	<input type="checkbox"/> Sinus Trouble	<input type="checkbox"/> Chemotherapy	<input type="checkbox"/> Joint Replacement	<input type="checkbox"/> Excessive Bleeding	<input type="checkbox"/> Congenital Heart Lesions
<input type="checkbox"/> Diabetes	<input type="checkbox"/> Cold Sores	<input type="checkbox"/> Heart Murmur	<input type="checkbox"/> Stomach Ulcers	<input type="checkbox"/> Nervous Disorders	<input type="checkbox"/> Mitral Valve Prolapse	<input type="checkbox"/> X-Ray or Cobalt Treatment
<input type="checkbox"/> Arthritis	<input type="checkbox"/> Emphysema	<input type="checkbox"/> Liver Disease	<input type="checkbox"/> Angina Pectoris	<input type="checkbox"/> Tumors or Growths	<input type="checkbox"/> High Blood Pressure	<input type="checkbox"/> Radiation Treatment of any kind
<input type="checkbox"/> Asthma	<input type="checkbox"/> Rheumatism	<input type="checkbox"/> Blood Disease	<input type="checkbox"/> Mental Disorder	<input type="checkbox"/> Allergies or Hives	<input type="checkbox"/> HIV Related Complex	<input type="checkbox"/> Venereal Disease (Syphilis, Gonorrhea)
<input type="checkbox"/> Cancer	<input type="checkbox"/> Chicken Pox	<input type="checkbox"/> Heart Ailments	<input type="checkbox"/> Thyroid Disease	<input type="checkbox"/> Pain in Jaw Joints	<input type="checkbox"/> Respiratory Disease	<input type="checkbox"/> Acquired Immune Deficiency Syndrome (AIDS)
<input type="checkbox"/> Seizures	<input type="checkbox"/> Bruise Easily	<input type="checkbox"/> Heart Attack	<input type="checkbox"/> Fainting Spells	<input type="checkbox"/> Artificial Prosthesis	<input type="checkbox"/> Epilepsy or Seizures	<input type="checkbox"/> TMJ (Temporomandibular Joint) Disorder

- Do you have any disease, condition or problem not listed that you think we should know about? Yes No
If so, what?
- Do you wear a cardiac pacemaker, or have you had heart surgery? Yes No
- Do you smoke? If yes, how much? Cigarettes Cigars Packs per day Yes No
- Have you ever taken the drugs Phen-Phen, Redux or any diet drugs? Yes No
- (Women) Are you pregnant? If so how many months? Yes No
- (Women) Do you have any problems associated with your menstrual period? Yes No
- (Women) Do you take any birth control medication or hormones? Yes No

DENTAL HISTORY

- Have you ever had a local anesthetic (Novocaine, etc.)? Yes No
- Have you ever had any unfavorable reaction from a local anesthetic? Yes No
- Have you had any serious trouble associated with any previous dental treatment? Yes No
If so, explain?
- How long since your last full mouth X-Rays? Weeks Months Years
- How long since your last dental treatment? Weeks Months Years
- Does dental treatment make you nervous? Slightly Moderately Extremely? Yes No
- Would you desire to be pre-sedated? Yes No

To the best of my knowledge, all of the preceding answers are true and correct. If I ever have any change in my health or if my medications change, I will, without fail, inform the doctor at my next appointment.

A Date Signature

B UPDATE — Since your last visit:

- Have you seen a medical doctor? Yes No
- Have you had a change in your medication? Yes No
- Have you had a change in your medical condition or had surgery? Yes No

Please note changes in health since last visit. If no changes, please write "None"

Date Signature

C UPDATE — Since your last visit:

- Have you seen a medical doctor? Yes No
- Have you had a change in your medication? Yes No
- Have you had a change in your medical condition or had surgery? Yes No

Please note changes in health since last visit. If no changes, please write "None"

Date Signature

REVIEWED BY	DO NOT WRITE IN THIS SPACE		
A	A	B	C
DATE	DATE	B.P.	/ /
B	DATE	PULSE	/ /
C	DATE	TEMP	/ /
DATE	BY		

HEALTH QUESTIONNAIRE MUST BE CONTINUALLY UPDATED!

CONSENT FOR TREATMENT: I hereby grant authority to the dentist(s) in charge of the care of the patient whose name appears on this Health History form, to administer such anesthetics, analgesics, sedatives, nitrous oxide sedation and intravenous sedation; and to perform such operations as may be deemed necessary or advisable in the diagnosis and treatment of this patient. I have been informed of all possible complications of the procedures, anesthetics and/or drugs.

All services are rendered and accepted under the terms and conditions printed on the reverse hereof:

Authorization must be signed by the patient, or by the nearest relative in the case of a minor or when the patient is physically or mentally incompetent.

Signed: Date: Relationship to Patient

Patient Acknowledgment of Receipt of Dental Materials Fact Sheet

I, _____, acknowledge I have
patient name

received from Dr Neil McLeod a copy of the
dentist or dental office name

Dental Materials Fact Sheet dated October 2001.



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Patient Signature Date

DENTAL MATERIALS FACT SHEET

INSTRUCTIONS

- The Dental Materials Fact Sheet (DMFS) was sent to all licentiates on October 31, 2001, as a 4-page pull-out. Business & Professions Code section 1648.15, effective January 1, 2002, requires the following:
- The dentist must provide the fact sheet to every new patient and to patients of record before performing dental restoration work. The dentist needs to provide the fact sheet to each patient only once.
- The patient must sign an acknowledgment of receipt of the fact sheet and a copy of the acknowledgment must be placed in the patient's dental record.
- If the Board updates the fact sheet, the updated fact sheet must be given to patients in this same way.
- The dentist must also provide the fact sheet to the patient upon request. The dentist is responsible for copying the fact sheet for distribution. The fact sheet is currently available only in English.

SAMPLE

The following document is the Dental Board of California's Dental Materials Fact Sheet. The Department of Consumer Affairs has no position with respect to the language of this Dental Material Fact Sheet; and its linkage to the DCA web site does not constitute an endorsement of the content of this document

The Dental Board of California Dental Materials Fact Sheet

Adopted by the Board on October 17, 2001

As required by Chapter 801, Statutes of 1992, the Dental Board of California has prepared this fact sheet to summarize information on the most frequently used restorative dental materials. Information on this fact sheet is intended to encourage discussion between the patient and dentist regarding the selection of dental materials best suited for the patient's dental needs. It is not intended to be a complete guide to dental materials science.

The most frequently used materials in restorative dentistry are amalgam, composite resin, glass ionomer cement, resin-ionomer cement, porcelain (ceramic), porcelain (fused-to-metal), gold alloys (noble) and nickel or cobalt-chrome (base-metal) alloys. Each material has its own advantages and disadvantages, benefits and risks. These and other relevant factors are compared in the attached matrix titled "Comparisons of Restorative Dental Materials." A Glossary of Terms" is also attached to assist the reader in understanding the terms used.

The statements made are supported by relevant, credible dental research published mainly between 1993 - 2001. In some cases, where contemporary research is sparse, we have indicated our best perceptions based upon information that predates 1993.

The reader should be aware that the outcome of dental treatment or durability of a restoration is not solely a function of the material from which the restoration was made.

The durability of any restoration is influenced by the dentist's technique when placing the restoration, the ancillary materials used in the procedure, and the patient's cooperation during the procedure. Following restoration of the teeth, the longevity of the restoration will be strongly influenced by the patient's compliance with dental hygiene and home care, their diet and chewing habits.

NEIL McLEOD, D.D.S., INC. B.D.S. (Lond.), L.D.S.R.C.S. (Eng.), D.D.S., F.S.A. (Scot)

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The Dental Board of California

Dental Materials Fact Sheet

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The most frequently used materials in restorative dentistry are amalgam, composite resin, glass ionomer cement, resin-ionomer cement, porcelain (ceramic), porcelain (fused-to-metal), gold alloys (noble) and nickel or cobalt-chrome (base-metal) alloys. Each material has its own advantages and disadvantages, benefits and risks. These and other relevant factors are compared in the attached matrix titled "Comparisons of Restorative Dental Materials." A Glossary of Terms" is also attached to assist the reader in understanding the terms used.

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Both the public and the dental profession are concerned about the safety of dental treatment and any potential health risks that might be associated with the materials used to restore the teeth. All materials commonly used (and listed in this fact sheet) have been shown -- through laboratory and clinical research, as well as through extensive clinical use -- to be safe and effective for the general population. The presence of these materials in the teeth does not cause adverse health problems for the majority of the population. There exist a diversity of various scientific opinions regarding the safety of mercury dental amalgams. The research literature in peer-reviewed scientific journals suggests that otherwise healthy women, children and diabetics are not at increased risk for exposure to mercury from dental amalgams. Although there are various opinions with regard to mercury risk in pregnancy, diabetes, and children, these opinions are not scientifically conclusive and therefore the dentist may want to discuss these opinions with their patients. There is no research evidence that suggests pregnant women, diabetics and children are at increased health risk from dental amalgam fillings in their mouth. A recent study reported in the JADA factors in a reduced tolerance (1/50th of the WHO safe limit) for exposure in calculating the amount of mercury that might be taken in from dental fillings. This level falls below the established safe limits for exposure to a low concentration of mercury or any other released component from a dental restorative material. Thus, while these sub-populations may be perceived to be at increased health risk from exposure to dental restorative materials, the scientific evidence does not support that claim. However, there are individuals who may be susceptible to sensitivity, allergic or adverse reactions to selected materials. As with all dental materials, the risks and benefits should be

discussed with the patient, especially with those in susceptible populations.

There are differences between dental materials and the individual elements or components that compose these materials. For example, dental amalgam filling material is composed mainly of mercury (43-54%) and varying percentages of silver, tin, and copper (46-57%). It should be noted that elemental mercury is listed on the Proposition 65 list of known toxins and carcinogens. Like all materials in our environment, each of these elements by themselves is toxic at some level of concentration if they are taken into the body. When they are mixed together, they react chemically to form a crystalline metal alloy. Small amounts of free mercury may be released from amalgam fillings over time and can be detected in bodily fluids and expired air. The important question is whether any free mercury is present in sufficient levels to pose a health risk. Toxicity of any substance is related to dose, and doses of mercury or any other element that may be released from dental amalgam fillings falls far below the established safe levels as stated in the 1999 US Health and Human Service Toxicological Profile for Mercury Update.

All dental restorative materials (as well as all materials that we come in contact with in our daily life) have the potential to elicit allergic reactions in hypersensitive individuals. ¹ These must be assessed on a case-by-case basis, and susceptible individuals should avoid contact with allergenic materials. Documented reports of allergic reactions to dental amalgam exist (usually manifested by transient skin rashes in individuals who have come into contact with the material), but they are atypical. Documented reports of toxicity to dental amalgam exist, but they are rare. There have been anecdotal reports of toxicity to dental amalgam and as with all dental material risks and benefits of dental amalgam should be discussed with the patient, especially with those in susceptible populations.

Composite resins are the preferred alternative to amalgam in many cases. They have a long history of biocompatibility and safety. Composite resins are composed of a variety of complex inorganic and organic compounds, any of which might provoke allergic response in susceptible individuals. Reports of such sensitivity are atypical. However, there are individuals who may be susceptible to sensitivity, allergic or adverse reactions to composite resin restorations. The risks and benefits of all dental materials should be discussed with the patient, especially with those in susceptible populations.

Other dental materials that have elicited significant concern among dentists are nickel-chromium-beryllium alloys used predominantly for crowns and bridges. Approximately 10% of the female population are alleged to be allergic to nickel. ² The incidence of allergic response to dental restorations made from nickel alloys is surprisingly rare. However, when a patient has a positive history of confirmed nickel allergy, or when such hypersensitivity to dental restorations is suspected, alternative metal alloys may be used. Discussion with the patient of the risks and benefits of these materials is indicated.

1 - Dental Amalgam: A scientific review and recommended public health service strategy for research, education and regulation, Dept. of Health and Human Services, Public Health Service, January 1993.

2 - Merck Index 1983. Tenth Edition, M Narsha Windhol z, (ed).

Comparisons of Direct Restorative Dental Materials

TYPES OF DIRECT RESTORATIVE DENTAL MATERIALS

comparative factors	amalgam	composite resin (direct and indirect restorations)	glass ionomer cement	resin-ionomer cement
General Description	Self-hardening mixture in varying percentages of a liquid mercury and silver-tin alloy powder.	Mixture of powdered glass and plastic resin; self-hardening or hardened by exposure to blue light.	Self-hardening mixture of glass and organic acid.	Mixture of glass and resin polymer and organic acid; self hardening by exposure to blue light.
principal Uses	Fillings; sometimes for replacing portions of broken teeth.	Fillings, inlays, veneers, partial and complete crowns; sometimes for replacing portions of broken teeth.	Small fillings; cementing metal & porcelain/metal crowns, liners, temporary restorations.	Small fillings; cementing metal & porcelain/metal crowns, and liners.
Resistance to Further Decay	High; self-sealing characteristic helps resist recurrent decay; but recurrent decay around amalgam is difficult to detect in its early stages.	Moderate; recurrent decay is easily detected in early stages.	Low-Moderate; some resistance to decay may be imparted through fluoride release.	Low-Moderate; some resistance to decay may be imparted through fluoride release.
Estimated Durability (permanent teeth)	Durable	Strong, durable.	Non-stress bearing crown cement.	Non-stress bearing crown cement.
Relative Amount of Tooth Preserved	Fair; Requires removal of healthy tooth to be mechanically retained; No adhesive bond of amalgam to the tooth.	Excellent; bonds adhesively to healthy enamel and dentin.	Excellent; bonds adhesively to healthy enamel and dentin.	Excellent; bonds adhesively to healthy enamel and dentin.
Resistance to Surface Wear	Low Similar to dental enamel; brittle metal.	May wear slightly faster than dental enamel.	Poor in stress-bearing applications. Fair in non- stress bearing applications.	Poor in stress-bearing applications; Good in non-stress bearing applications.
Resistance to Fracture	Amalgam may fracture under stress; tooth around filling may fracture before the amalgam does.	Good resistance to fracture.	Brittle; low resistance to fracture but not recommended for stress-bearing restorations.	Tougher than glass ionomer; recommended for stress-bearing restorations in adults.
Resistance to Leakage	Good; self-sealing by surface corrosion; margins may chip over time.	Good if bonded to enamel; may show leakage over time when bonded to dentin; Does not corrode.	Moderate; tends to crack over time.	Good; adhesively bonds to resin, enamel, dentine/ post-insertion expansion may help seal the margins.
Resistance to Occlusal Stress	High; but lack of adhesion may weaken the remaining tooth.	Good to Excellent depending upon product used.	Poor; not recommended for stress-bearing restorations.	Moderate; not recommended to restore biting surfaces of adults; suitable for short-term primary teeth restorations.
Toxicity	Generally safe; occasional allergic reactions to metal components. However amalgams contain mercury. Mercury in its elemental form is toxic and as such is listed on prop 65.	Concerns about trace chemical release are not supported by research studies. Safe; no known toxicity documented. Contains some compounds listed on prop 65.	No known incompatibilities. Safe; no known toxicity documented.	No known incompatibilities. Safe; no known toxicity documented.
Allergic or Adverse Reactions	Rare; recommend that dentist evaluate patient to rule out metal allergies.	No documentation for allergic reactions was found.	No documentation for allergic reactions was found. Progressive roughening of the surface may predispose to plaque accumulation and periodontal disease.	No known documented allergic reactions; Surface may roughen slightly over time; predisposing to plaque accumulation and periodontal disease if the material contacts the gingival tissue.

Susceptibility to Post-Operative Sensitivity	Minimal; High thermal conductivity may promote temporary sensitivity to hot and cold; Contact with other metals may cause occasional and transient galvanic response.	Moderate; Material is sensitive to dentist's technique; Material shrinks slightly when hardened, and a poor seal may lead to bacterial leakage, recurrent decay and tooth hypersensitivity.	Low; material seals well and does not irritate pulp.	Low; material seals well and does not irritate pulp.
Esthetics (Appearance)	Very poor. Not tooth colored: initially silver-gray, gets darker, becoming black as it corrodes. May stain teeth dark brown or black over time.	Excellent ; often indistinguishable From natural tooth.	Good; tooth colored, varies in translucency .	Very good; more translucency than glass ionomer.
Frequency of Repair or Replacement	Low; replacement is usually due to fracture of the filling or the surrounding tooth.	Low-Moderate; durable material hardens rapidly; some composite materials show more rapid wear than amalgam. Replacement is usually due to marginal leakage.	Moderate; Slowly dissolves in mouth; easily dislodged.	Moderate; more resistant to dissolving than glass ionomer, but less than composite resin.
Relative Costs to Patient	Low, relatively inexpensive; actual cost of fillings depends upon their size.	Moderate; higher than amalgam fillings; actual cost of fillings depends upon their size; veneers & crowns cost more.	Moderate; similar to composite resin (not used for veneers and crowns).	Moderate; similar to composite resin (not used for veneers and crowns).
Number of Visits Required	Single visit (polishing may require a second visit)	Single visit for fillings; 2+ visits for indirect inlays, veneers and crowns.	Single visit.	Single visit.

Comparisons of InDirect Restorative Dental Materials

TYPES OF INDIRECT RESTORATIVE DENTAL MATERIALS

comparative factors	porcelain (ceramic)	porcelain (fused-to-metal)	gold alloys (Noble)	nickel OR COBALT-chrome (BASE-METAL) ALLOYS
General Description	Glass-like material formed into fillings and crowns using models of the prepared teeth.	Glass-like material that is "enameled" onto metal shells. Used for crowns and fixed-bridges.	Mixtures of gold, copper and other metals used mainly for crowns and fixed bridges.	Mixtures of nickel, chromium.
principal Uses	Inlays, veneers, crowns and fixed-bridges.	Crowns and fixed-bridges.	Cast crowns and fixed bridges; some partial denture frameworks.	Crowns and fixed bridges; most partial denture frameworks.
Resistance to Further Decay	Good, if the restoration fits well.	Good, if the restoration fits well.	Good if the restoration fits well.	Good if the restoration fits well.
Estimated Durability (permanent teeth)	Moderate; Brittle material that may fracture under high biting forces. Not recommended for posterior (molar) teeth.	Very good. Less susceptible to fracture due to the metal substructure.	Excellent. Does not fracture under stress; does not corrode in the mouth.	Excellent. Does not fracture under stress; does not corrode in the mouth.
Relative Amount of Tooth Preserved	Good - Moderate. Little removal of natural tooth is necessary for veneers; more for crowns since	Moderate-High. More tooth must be removed to permit the metal to accompany the porcelain.	Good. A strong material that requires removal of a thin outside layer of the	Good. A strong material that requires removal of a thin outside layer of the tooth.

	strength is related to its bulk.		tooth.	
Resistance to Surface Wear	Resistant to surface wear; but abrasive to opposing teeth.	Resistant to surface wear; permits either metal or porcelain on the biting surface of crowns and bridges.	Similar hardness to natural enamel; does not abrade opposing teeth.	Harder than natural enamel but minimally abrasive to opposing natural teeth. does not fracture in bulk.
Resistance to Fracture	Poor resistance to fracture.	Porcelain may fracture.	Does not fracture in bulk.	Does not fracture in bulk.
Resistance to Leakage	Very good. Can be fabricated for very accurate fit of the margins of the crowns.	Good — Very good depending upon design of the margins of the crowns.	Very good — Excellent. Can be formed with great precision and can be tightly adapted to the tooth.	Good-Very good — Stiffer than gold; less adaptable, but can be formed with great precision.
Resistance to Occlusal Stress	Moderate; brittle material susceptible to fracture under biting forces.	Very good. Metal substructure gives high resistance to fracture.	Excellent	Excellent
Toxicity	Excellent. No known adverse effects.	Very Good to Excellent. Occasional/rare allergy to metal alloys used.	Excellent; Rare allergy to some alloys.	Good; Nickel allergies are common among women, although rarely manifested in dental restorations.
Allergic or Adverse Reactions	None	Rare. Occasional allergy to metal substructures.	Rare; occasional allergic reactions seen in susceptible individuals .	Occasional; infrequent reactions to nickel.
Susceptibility to Post-Operative Sensitivity	Not material dependent; does not conduct heat and cold well.	Not material dependent; does not conduct heat and cold well.	Conducts heat and cold; may irritate sensitive teeth.	Conducts heat and cold; may irritate sensitive teeth.
Esthetics (Appearance)	Excellent	Good to Excellent	Poor — yellow metal	Poor — dark silver metal
Frequency of Repair or Replacement	Varies; depends upon biting forces; fractures of molar teeth are more likely than anterior teeth; porcelain fracture may often be repaired with composite resin.	Infrequent; porcelain fracture can often be repaired with composite resin.	Infrequent; replacement is usually due to recurrent decay around margins	Infrequent; replacement is usually due to recurrent decay around margins.
Relative Costs to Patient	High; requires at least two office visits and laboratory services.	High; requires at least two office visits and laboratory services.	High; requires at least two office visits and laboratory services.	High; requires at least two office visits and laboratory services.
Number of Visits Required	Two — minimum; matching esthetics of teeth may require more visits.	Two - minimum; matching esthetics of teeth may require more visits.	Two - minimum	Two - minimum

DENTISTRY THAT LASTS - QUALITY THAT COUNTS

Glossary of Terms

General Description — Brief statement of the composition and behavior of the dental material

principal Uses — The types of dental restorations that are made from this material.

Resistance to further decay — The general ability of the material to prevent decay around it.

Longevity/Durability — The probable average length of time before the material will have to be replaced. (This will depend upon many factors unrelated to the material such as biting habits of the patient, their diet, the strength of their bite, oral hygiene, etc.)

Conservation of Tooth Structure — A general measure of how much tooth needs to be removed in order to place and retain the material.

Surface Wear/Fracture Resistance — A general measure of how well the material holds up over time under the forces of biting, grinding, clenching, etc.

Marginal Integrity (Leakage) — An indication of the ability of the material to seal the interface between the restoration and the tooth, thereby helping to prevent sensitivity and new decay.

Resistance to Occlusal Stress — The ability of the material to survive heavy biting forces over time.

Biocompatibility — The effect, if any, of the material on the general overall health of the patient.

Allergic or Adverse Reactions — Possible systemic or localized reactions of the skin, gums and other tissues to the material.

Toxicity — An indication of the ability of the material to interfere with normal physiologic processes beyond the mouth.

Susceptibility to Sensitivity — An indication of the probability that the restored teeth may be sensitive of stimuli (heat, cold, sweet, pressure) after the material is placed in them.

Esthetics — An indication of the degree to which the material resembles natural teeth.

Frequency of Repair or Replacement — An indication of the expected longevity of the restoration made from this material.

Relative Cost — A qualitative indication of what one would pay for a restoration made from this material compared to all the rest.

Number of Visits Required — How many times a patient would usually have to go to the dentist's office in order to get a restoration made from this material.

Dental Amalgam - Filling material which is composed mainly of mercury (43-54%) and varying percentages of silver, tin, and copper (46-57%).

DENTISTRY THAT LASTS - QUALITY THAT COUNTS