

## WHAT'S GOING IN YOUR MOUTH?

It is common, today, to find patients in their 90's with all of their teeth. While you may be beyond this possibility, there are steps you can take to preserve as many teeth and as much of your health as possible. This article covers how you can improve your health and dental outcomes by what you put in your mouth and by knowing what your dentist is putting in your mouth.

### Put These in Your Mouth Often

Most of those 90 year-olds didn't get there without doing some things right. We have all heard nonagenarians who got there despite heavy drinking or smoking, but those are the exceptions to the rule. My experience, in seeing dozens of these "survivors" since my move to a popular resort and retirement community, is that they have something else in common. They all have remarkably healthy mouths. Most of these patients report a history of regular dental care and use of dental floss.

Studies over the last 20 years shed some light on why this might be so successful. Unhealthy gums are now known to have a relationship with coronary artery disease, diabetes, stroke and even erectile dysfunction. This oral-systemic connection is related to the types of bacteria that are predominant in the mouth, and the ease at which they get into the blood stream through gum tissues. For some patients there may also be an inherited predisposition that can be identified through DNA testing.

Some top dental offices now offer services to identify the absence or presence of these pathogenic bacteria in a patient's mouth and identification of the gene predisposing one to gum disease. If identified, the dentist and patient can take steps to control the disease, improve one's ability to keep teeth and contribute to one's overall well-being.

Whether we are predisposed to gum disease and the oral-systemic connection or not, we can all benefit from certain well-known activities. Here are some comments about these.

- (1) **Brushing.** Does it really matter which brush you use. Well, yes and no. What matters is that you use a brush and technique that can remove the maximum amount of plaque. If your dental hygienist is not showing you the "how" you should ask. In regards to the "what", I personally recommend the following:
  - (a) Soft brushes of just about any brush design
  - (b) Automatic brushes that either have some power (Rotadent, available through some dental professionals, or Oral-B are two favorites)
  - (c) Automatic brushes that use sonic vibrations (Ultreo or Philips Sonicare)

- (d) A two-sided automatic brush for those who have not done a good job in the past - Hydrabrush
- (2) **Flossing.** Any floss that does not shred on your teeth is best. Some dentists prefer non-waxed floss, but to me the best floss is the one that gets used every day. Most drug stores have a substantial variety of flosses for home or carrying in your wallet or purse. For those who do not have the dexterity or coordination for flossing, Hydrofloss is an excellent alternative for the bathroom.
- (3) **Toothpastes.** This is mostly a personal choice. For kids, fluoride toothpastes make the enamel surface harder. For extremely decay prone individuals, especially seniors, prescription fluoride toothpastes are the best bet. Ask your dentist about these. They may also be effective for sensitive teeth. Any other toothpaste varieties (whitening, tartar control, sensitivity, and re-calcifying) have some benefits, but those pale in comparison to what good oral hygiene and diet can do.
- (4) **Mouth rinses.** Mouth rinses can be effective against decay, periodontal disease and bad breath.
  - (a) For decay, fluoride rinses, especially the prescription varieties prescribed by dentists can be effective.
  - (b) For periodontal disease, prescription rinses containing chlorhexidine (best known is Peridex) and rinses containing chlorine dioxide (such as CloSYS prescribed by dentists) are known to kill pathogenic bacteria.
  - (c) For breath issues mouthwashes are available that neutralize volatile sulfur compounds. BreathRx is the best known of these.

### **Substitutes for Negative Oral Habits**

This article does not discuss all the good dietary things we can put in our mouths such as veggies, fruit, nuts, and supplements. I do not want any strong personal views on diet to get in the way of reading the important specific dental consequences of putting the wrong things in your mouth. I call these things "negative" oral habits as opposed to "bad" habits, because I want to emphasize the dental health consequences of the habits over any judgmental opinion.

- (1) Sugars. I am sure this is no surprise to you. The costly financial disasters I see from sugars are mostly in young people (under 30) or old people (over 80). The most common sugar offenders are cola or energy drinks (especially when consumed over a long period of the day) coffee with sweeteners (especially caramel flavored), flavored waters (mostly with corn syrup added) sugared breath mints (such as TicTacs), dried fruits (especially fruit roll-us), chewing gum and medications in the form of candy (such as Viactiv soft chews).

- (1) Fermentable Carbohydrates. This may surprise you. Oral bacteria convert these carbohydrates to acids, which then initiate tooth decay. Crackers (Cheez-Its, for example), breakfast cereals (double whammy if sugar is added), and potato chips are examples.
- (2) Citrus. Sucking on lemons or other citrus fruits can eat the enamel. The front teeth of a person who loves to suck lemon slices will be reduced in size. As enamel wears off the front of the teeth the teeth will become darker. Drinking lemonade is not much better, only it works on all the teeth more than being limited to front teeth.
- (3) Diet Sodas. Many diet sodas contain citric acid. You might as well suck lemons. Combined with chewing, the acid softens the tooth and the chewing motion finishes the eroding process.
- (4) Chewing gum. Chewing gum is not necessarily negative, but in combination with acids (any of the above items, gastric reflux, dry mouth) it works to accelerate erosion of enamel. Another effect of habitual gum chewing is shortening of the lower part of the face, making the individual look older. Constant chewing puts upward pressure on the upper teeth and downward pressure on the lower teeth, in essence doing unwanted orthodontics on the patient.

Restoration of a mouth suffering the effects of any of the above “negatives” can cost tens of thousands of dollars. When considering whether you are going to continue any of these habits, consider your wise investment in your mouth by enjoying some of these substitutes.

NO	YES
Colas	Ice Tea, Water
Caramel Macchiato	Coffee with Stevia sweetener
TicTacs	Mints with xylitol sweetener
Fruit Roll Ups	Grapes, berries
Candy	Dark chocolate (small quantity)
Cheez-Its, Potato Chips	Nuts, swiss, cheddar or mozzarella cheese; peanut butter on celery sticks; raw vegetables
Diet Soda	Ice Tea, Water
Chewing gum	Gum with xylitol sugar in limited quantities

## **HELPING THE DENTIST CHOOSE YOUR RESTORATIONS**

Most dental restorations can last a long time. But, most restorations do not last 40 years. Sometimes it is the fault of the chosen materials.

As dental patients, we may have restorations that look and feel okay to begin with, but sometime later...maybe days, maybe months, maybe years... we sense that something is wrong. In these situations, patients draw conclusions such as "it doesn't fit", "it's leaking" or "the material is cheap."

Nowhere in dentistry is the patient kept so much in the dark as in the area of dental materials. This is especially true now that there are so many cosmetic materials. Dentists must continually study to keep up with the rapid advances in materials. Patients should not be expected to know what brand of material is best for their own mouths, but should be informed enough to make conscious decisions. This article will provide enough information that you should be able to understand the limitations of some materials and the reasoning behind treatment recommendations from your dentist.

Fifty years ago the choices were gold or amalgam. Now the choices for a crown include resins, gold, non-precious metal, porcelain fused to gold (or high noble metal), porcelain fused to almost pure gold, porcelain fused to semi-precious metal, porcelain fused to non-precious metal, and all ceramic crowns. These materials created in processes that include heat and pressure curing, investment casting, powder layering and firing and precision milling. Various manufacturers' differences result in further sub-classifications. There are at least 50 different choices the dentist can make today!

Confusing? You bet! In fact many dentists are often confused about the best product to use in a particular situation. You may be the patient who is the "trial" patient as your dentist learns to use these new materials. This should not scare you, because most dentists will replace a restoration that does not live up to its clinical trials and marketing hype. While none of us relish the idea of being a guinea pig, the use of some of the newer materials may be exactly what is most likely to give you a lifetime smile. Keep this in mind as you discuss the best choice for your mouth.

### **How dentists select filling materials**

Most dentists no longer use amalgam fillings. This is not just because of the mercury in the amalgam, but even more the superior results obtained from tooth-colored composite fillings. Composites not only look nice, but also bond to the tooth surface, minimizing the risk of future tooth fracture.

Dentists choose a composite filling material that handles well (in their hands), polishes polishes and wears well, minimizes post-treatment sensitivity, and maintains a color match with adjacent tooth structure. Cost may be a factor, but is rarely the basis for selecting one material. Your dentist may or may not think it is critical to match the color of teeth in hard-to-see areas. Perfect matching requires

extra shades of composite and extra steps in the filling process. These extra steps and perfectly fitted fillings require much more time with composite than they did with an amalgam. You should expect to pay more for these restorations.

The bonding or adhesive system is at least as critical as composite selection. The latest generations of bonding materials have reduced or eliminated the sensitivity to cold and biting that occurred following placement of most bonded restorations during the 1990's.

Each dentist's preferred materials may change from week to week, so it is not appropriate to list the *best* materials here. But feel free to ask your dentist why s/he is using a particular product.

### **When a composite filling is the material of choice**

Dentists have different criteria for recommending a composite filling. The ideal criteria would be to use composite fillings whenever they support the lifetime criteria (could it possibly last that long or would a crown or inlay be required to last that long?). In situations where there is uncontrolled decay, such as in a sweet-loving teenager or a dry-mouthed senior, a composite filling may be the restoration of choice (to avoid having to redo a more costly restoration if new decay occurs in the next few years). In my opinion, well-placed composites can often do as good a job as more expensive porcelain inlays.

When a tooth is too weak to hold a long-term composite filling, when there is considerable wear in the bite, or when the patient wants to match the color of adjacent crowned teeth, the dentist will choose a crown. The type of crown chosen depends on the dentist's preference for strength, accuracy of fit, beauty and cost. The dentist may be influenced by your preferences for the same.

### **How dentists select a dental laboratory**

In a fee-for-service private practice (not a clinic or insurance controlled practice), most dentists choose one or two favorite materials for a given situation and stick with those materials. By doing so, they learn to overcome any difficulties that might occur and they learn little shading nuances that can result in a perfect match with your other teeth. Most dentists choose high quality dental alloys and porcelains. The important term here is "quality". As your ongoing service provider, the dentist has a vested interest in making sure the material lasts, with few subsequent problems. The dentist may have a favorite laboratory or technician. S/he will want to work with a technician who provides dependable results, especially when fit, strength and color matching is critical.

In a managed care practice, the management company (not the dentist) usually chooses a number of cost-effective materials that can be used for fillings and crowns. The important term here is "cost effective." With reduced contracted fees, the managed care dental office must make sure it stays in business *today*. It is less concerned about the resulting condition in five or ten years. The management

company that oversees the dental practice usually negotiates with the laboratory for a further quantity discount.

One of these cost effective choices for a crown includes a non-precious metal, either with or without porcelain bonded to it. This is the choice that involves the lowest co-payment from the patient and the lowest laboratory bill. Few dentists find these non-precious restorations to be acceptable. The fit is less accurate than gold crowns, porcelain-fused-to-gold crowns, or the newer all porcelain crowns. The colors of these crowns are also harder to match. Some dentists in a managed care setting will recommend an "upgrade" to a better fitting restoration. You will pay an extra fee for this service.

### **The dentist's thought process in selecting a dental lab**

A crown should fit your tooth quickly. It should not take an hour to make a crown fit. Crowns should fit precisely. You and your dentist should like the way your crowns look. Your dentist must take steps to make these things happen, but there are also steps the laboratory takes to help crowns seat quickly. It is annoying and can mess up the daily schedule (keeping other patients waiting) if crowns don't fit quickly.

The laboratory that handles impressions and models carefully makes a tremendous difference. It costs more to use these laboratories, but the extra expense is well worth the timesaving and the long-term service from the restoration. Quality dental labs do not rush things. This could compromise the fit. This criterion eliminates three-fourths of all dental labs from consideration.

Crowns should fit accurately. Some materials are difficult to make fit accurately. These are usually the materials that cost less. Because of the lower material costs, dental labs tend to use them for fast techniques when they want to offer a low cost option to the dentist. This adds up to difficult materials with poor workmanship. Laboratories that promote inexpensive materials often happen to be the ones that do not handle models well. This is a double whammy on fit. Many dentists would not find these crowns acceptable for even their charity cases. This eliminates another 5-10 percent of dental laboratories.

With your dentist's list of acceptable laboratories narrowed down less than twenty percent of all laboratories, the most difficult problems are still not solved. For a crown to match with the other teeth and for it to be a healthy solution, it must be properly contoured to blend in with the smile and to provide periodontal health. Not every technician understands how teeth are contoured and not every technician can consistently duplicate ideal contours in porcelain. The technician does not have the opportunity to see hundreds of teeth in the mouth every day, so this is a disadvantage. Most technicians develop a style much like artists develop a style on canvas. The dentist has narrowed the field to the fewer than five percent of the laboratory technicians with acceptable style.

The next problem is color match. Today, color matching requires an ability to work with numerous porcelain materials, knowledge of the various color layers of teeth

and the affects of firing and re-firing porcelain on the color, and the affects of tooth whitening on the color of natural teeth. Along with these talents, the technician ceramist and the dentist must have excellent written and verbal communication tools.

You can see that discovering a great lab takes some effort. The best decisions, for both patient and dentist should be based on the ideal of a lifetime smile.

### **Selection of the best material for your crown**

Some dentists present one treatment option, or crown type, when a crown is indicated for a tooth. Other dentists offer choices, usually based on cost or insurance reimbursement. The patient is often bewildered when presented with a choice without a full understanding of the benefits of one material over another. You may wish to ask your dentist or his staff how he arrives at a particular recommendation.

Both dentist and technician must consider the abilities of a material to match the tooth. There are some materials that can match some shades of teeth, but not other shades of teeth. For example, tetracycline stained teeth have a grayer appearance that is much more difficult to match. The tendency of some materials (that aren't pure porcelain) to darken with age (compared to the tendency of natural teeth to darken with age) must be taken into account. The materials used must withstand biting forces without wearing away adjacent teeth.

The dentist must consider the potential for receding gums that will expose the margins of crowns. Light does not travel through the metal or the opaque porcelain used to block the metal from showing. The possibility of recession will dictate the selection of a crown with translucent porcelain at its margins if you want to avoid ugly, dark lines along your gum line.

Some crowns allow the dentist to save more of your sound tooth structure. Conserving your tooth with less drilling is generally a good thing, but there are instances when more tooth structure must be removed to improve the holding power of the cement that retains the crown to the tooth or to improve esthetics.

Finally, there are some materials that provide a healthier environment. These materials may be the best choice for a mouth doesn't have plaque under excellent control.

Whew! It's tiring just thinking about what it takes to make a new tooth fit and look fantastic. But, it's equally as exciting to think about the potential for great results.

Does your next crown have to be done by a dentist and technician who possess the knowledge and skills described? Absolutely not! You may choose an alternative that doesn't have the potential to look as nice or last as long. But, if your goal is to achieve a lifetime smile, you will know what to look for.

## Other Materials

Composite resins and crowns are only a couple of choices a dentist must make in material selection. There are denture teeth that look false and wear poorly, and there are denture teeth that look perfectly natural and wear much like natural teeth. There are bleaching gels that cause more sensitivity, yet bleach quickly. There are bleaching gels that whiten slowly, with little sensitivity.

A dentist's judgment is based upon more than a material's potential for longevity. It is also based on patient comfort, cost, ease of use, storage life, color matching, and even brand name recognition. With all materials, dentists must determine what quality and cost is desirable. With experience, the dentist who is motivated to produce long-term restorations makes better and better decisions to the patient's betterment. Dentists who are motivated by finances continue to make compromised decisions.

## Materials and Dentist's Fees

Dentistry is a business and a profit has to be made. A dentist whose goal is to provide lifetime smiles will select top-notch materials and dental laboratories. Fees will reflect these expenses. Dentists whose market is lower-end dentistry (managed care, clinics, etc.) set a fee, or have fees set by an insurance company, then select materials and a laboratory that will still allow for a profit with those fees. A shorter life should be expected from the provided services.

## How does this information help the patient?

In terms of importance in producing a long-term restoration, a dentist's technique comes before material selection. There may be a few dentists who have exceptional technique followed up by inferior material selection, but most *sticklers for technique* will select outstanding materials. How disappointing it is to produce an excellent restoration only to have it fail due to poor material selection!

Most patients want to be involved in their dental health decisions. This article has given you background that will allow you to ask informed questions regarding materials. Add this information to your own observations about the dentist's clinical skills to judge whether you are in the right office to achieve a lifetime smile.

### PRO-TIP

Ask your dentist, "Does this material have the potential to last 40 years in my mouth." Remember, you are not asking for a guarantee, just the potential. If the answer is "No", and you are doing your part and to keep your mouth healthy and an adequate reason is not given for a shorter lasting material, then ask for a better material or find a dentist willing to take the extra steps.

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