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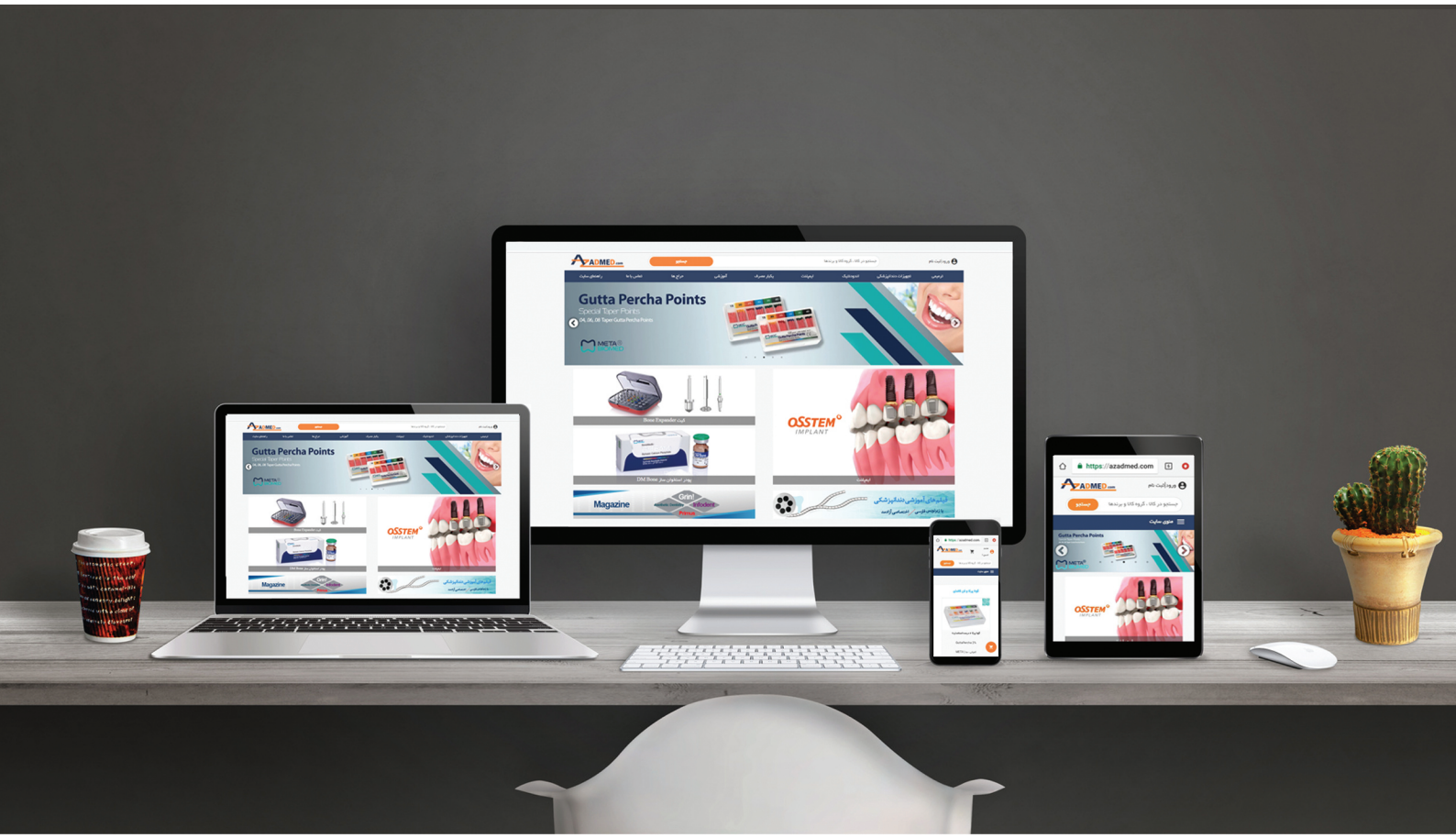

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PATIENT EDUCATION MAGAZINE
WRITTEN BY DENTAL PROFESSIONALS

Dear DOCTOR®

DENTISTRY & ORAL HEALTH

Celebrities that make you Smile

Sheryl Crow
Cancer Survivor & Spokesperson

NUTRITION & ORAL HEALTH

THE IMPACT OF A SMILE MAKEOVER

OVERCOMING DENTAL FEAR & ANXIETY

ORAL CANCER

PLUS: MINI-IMPLANTS, REPAIRING CHIPPED TEETH, MOUTHRINSES, BLOOD PRESSURE MEDICATIONS AND MORE...

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THE ULTIMATE DENTAL HEALTH MAKEOVER

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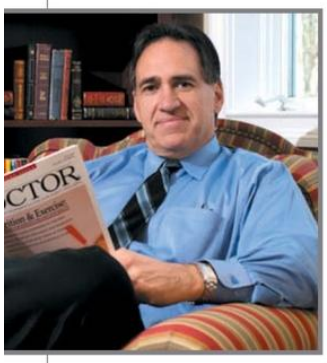
Have a Dental Question?
Send an email to consultations@deardoctor.com or submit your question online at www.DearDoctor.com and have your question answered in an upcoming issue!

In every issue...

We are delighted to present the third issue of *Dear Doctor – Dentistry & Oral Health* Magazine. At the outset of this issue we want to take a moment to thank you, our readers, for the stunning and overwhelming support we have received, this is the most important part of making our dream of this magazine a reality.

We are also writing with a plea for your help.



A magazine is a living, creative and evolving entity. It must change and grow to serve its readers. Our goal is to be able to advocate for you, not only as a healthcare magazine, but also as healthcare professionals. *Dear Doctor* Magazine is designed to increase your knowledge and awareness of dental and oral health topics, to provide necessary information on current topics of interest, treatment and therapies available. More importantly it is our mission to empower you with a greater ability to make informed healthcare decisions and choices together with your healthcare professionals.

Therefore, the information in *Dear Doctor* presents cutting edge knowledge, with editorial material that is based "on the evidence" of what we as dental health professionals know, and which is borne out by research and clinical experience. To that end *Dear Doctor* is written exclusively by the foremost experts in their fields, edited especially for lay readership to be read in easy to understand language. The editorial material is not influenced by advertisers. Only advertisers whose products reinforce or endorse current and accepted knowledge appear in the pages of *Dear Doctor*.

We want you to be able to make educated, informed and confident healthcare decisions together with your healthcare professionals. We feel that substance and credibility are more important than "sound bites". We strongly believe that the editorial content of the magazine cannot be made up of quick reads; that is not the mission of *Dear Doctor*. The magazine is not a throw away, the issues of *Dear Doctor* are designed to be kept for reference; they are indexed and catalogued for future use. The feature articles will be summarized on the *Dear Doctor* website and the consultations available in their entirety.

With these goals in mind, we need your constant and continuing feedback. If you have any questions or opinions while reading *Dear Doctor* Magazine, please contact us. You can email *Dear Doctor* your questions, comments and suggestions by visiting our website at www.DearDoctor.com. Your feedback is critical and welcome to allow us to be responsive to your healthcare needs.

In the following pages you will find feature articles and consultations based on questions asked by individuals, as well as interviews and other useful areas of educational and fun bits of information - topics of interest to both professionals and members of the public at large.

Our profound thanks once again,

Mario A. Vilardi, DMD
President/Publisher

Garry A. Rayant, BDS, DDS, LDSRCS, MS
Editor-in-Chief

VOLUME 1, ISSUE 3

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Did you know...
If bottled water is your main source of drinking water, your children *could be* missing out on the cavity-preventing benefits of fluoride.

Sleep - A Lifestyle Factor Impacting Oral Health

A study recently published in the Journal of Periodontology suggests that lack of sleep is identified as a factor that may play a role in the progression of periodontal disease. Subjects participating in the study who sleep a minimum of 7-8 hours per night exhibited greater resistance to periodontal disease than those who sleep 6 hours or less.

Though limited, studies linking hours of sleep to oral health may indicate that a shortage of sleep can impair the body's immune system from responding to diseases such as periodontal disease. Further research may suggest that lifestyle changes such as adding additional hours of sleep may improve not only our general health but our oral health as well.

(Journal of Periodontology)

Tobacco use...

- greatly increases the risk for oral cancer, which can progress rapidly and can be deadly if not diagnosed and treated early
- increases the risk of gum disease
- can slow healing after oral surgical procedures
- can damage gum tissue and cause receding gums
- causes bad breath
- causes stained teeth
- causes build up of tartar
- affects the sense of smell and taste

(ADHA - American Dental Hygenists' Association)

Fido and Kitty Need Dental Care Too!

According to the American Veterinarian Dental Society, 80% of dogs and 70% of cats show some signs of oral disease by age 3.

As in humans, plaque and tartar build up leads to periodontal disease which affects the tissues and supporting tooth structures. Pets show symptoms of red, swollen and bleeding gums, pain, and persistent bad breath. If left untreated, infection from periodontal disease may also affect other organs such as the heart, liver and kidneys.

Broken teeth from aggressive chewing are also a common problem in dogs, exposing pulp and nerve endings which can become extremely painful for your pet. Food and debris may become impacted attracting bacteria which can lead to infection. While broken teeth are not a big issue with cats, studies have estimated that at least 28% will develop painful lesions in the mouth.

If your pet has a change in eating habits, paws at his face, shows irritability, has persistent bad breath or excessive drooling he may be exhibiting signs of oral disease.

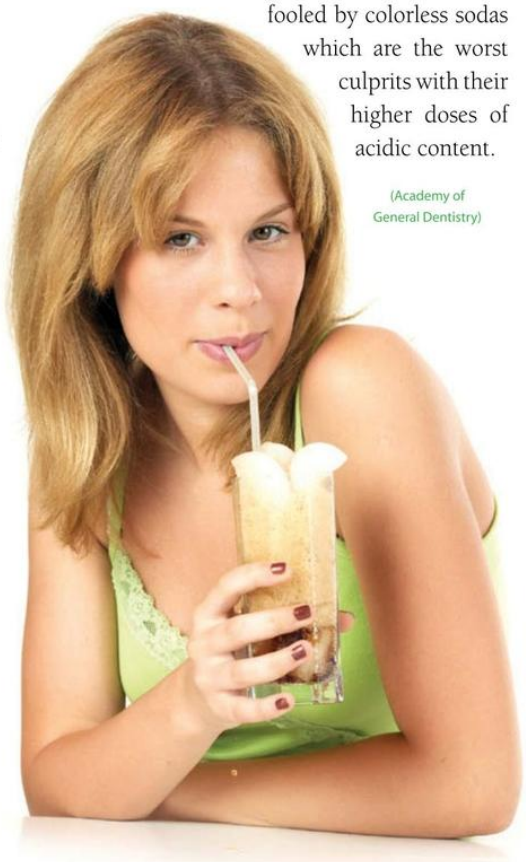
As part of the family, pets should have a regular dental care regimen at home, including brushing the teeth with a toothpaste made specifically for animals. Human toothpaste can cause stomach upset. A routine yearly veterinary examination that includes a dental check up is vital in preventing oral disease and promoting good general health for a happy pet.

(American Veterinarian Dental Society)

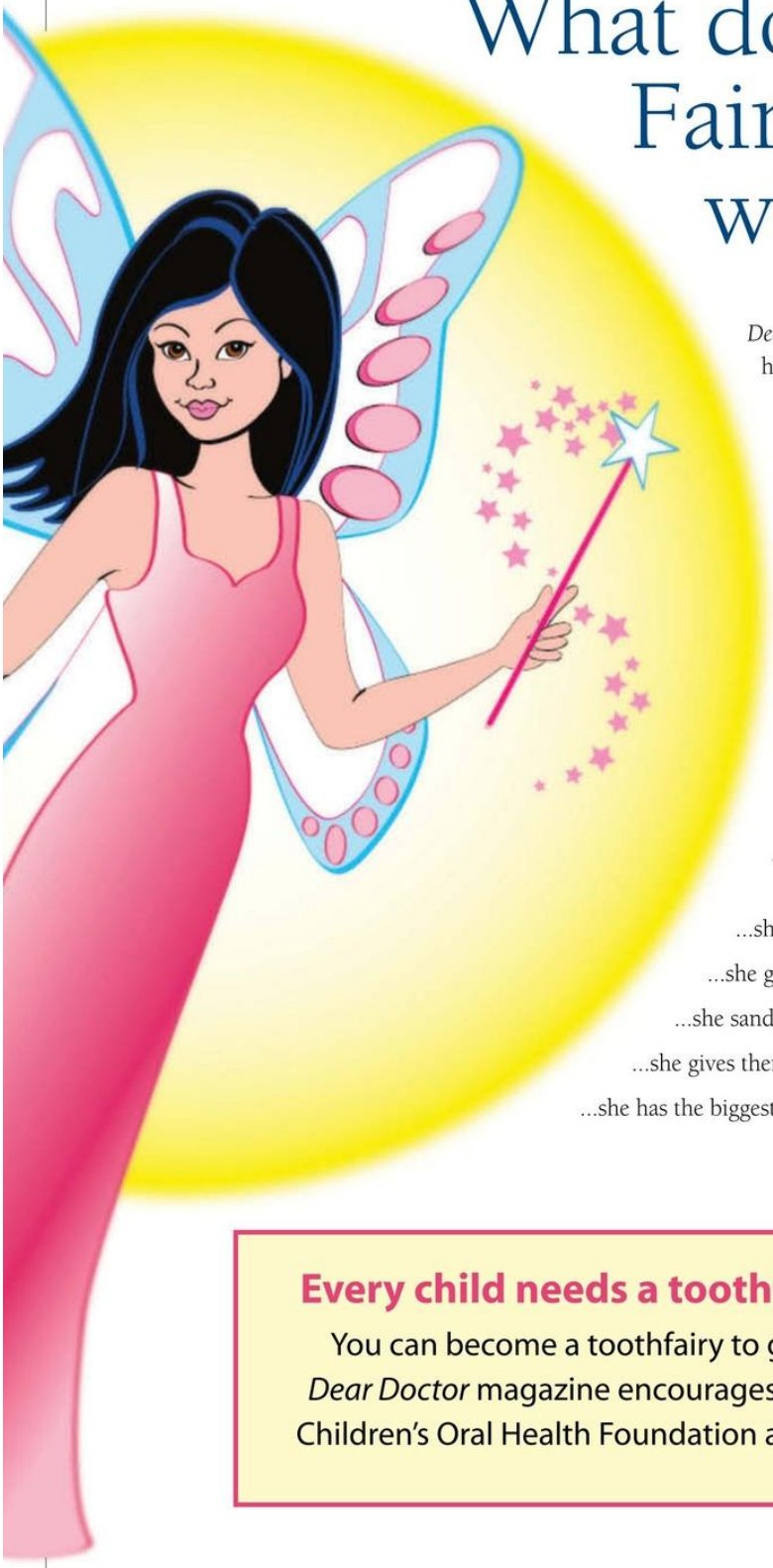
All sodas are not created equal

Although all soft drinks should be kept to a ***minimum at best*** because of their highly destructive effects on tooth enamel, consider root beer the next time you must reach for a soda to satisfy that craving. Most soft drinks contain large quantities of sugar combined with phosphoric or citric acids. This combination causes erosion of enamel making teeth highly susceptible to decay. However, root beer has a lower acidic content than other soft drinks making it ***slightly less erosive*** to your teeth. Also, soda drinkers should not be fooled by colorless sodas which are the worst culprits with their higher doses of acidic content.

(Academy of General Dentistry)



What does the Tooth Fairy actually do with my teeth?



Dear Doctor asked kindergarten and first graders what happens to their teeth after the tooth fairy takes them.

They responded as only children can! They said...

...she uses them to make teeth for old people!

...she makes bracelets and necklaces with them!

...she has the power to turn them into money!

...she gives them to people who don't have any teeth!

...they become stars in the sky!

...she builds an ivory castle with them!

...she grinds them into fairy dust to give her the magic she needs to fly!

...she gives them to new babies who are ready to grow teeth because I'm getting big teeth now!

...she gives the good teeth to dentists to make false teeth!

...she grinds them up and makes sand for the beach!

...she sands them real smooth and makes pearl necklaces!

...she gives them to hockey players because they really need them!

...she has the biggest tooth collection ever!

Every child needs a toothfairy to dream about!

You can become a toothfairy to give a child a healthy smile! *Dear Doctor* magazine encourages you to support the National Children's Oral Health Foundation and The Toothfairy Campaign!

Join The Toothfairy Campaign

MILLIONS OF CHILDREN
are silently suffering
unable to eat, to sleep…
or to learn.

Your help is critical!

Oral disease is the #1 chronic pediatric illness in America, a "silent epidemic" according to the Surgeon General.

The National Children's Oral Health Foundation has brought together concerned dental professionals, corporations, and organizations to create the Toothfairy Campaign - a bold and historic nationwide effort to respond to this crisis.

Join the Toothfairy Campaign **TODAY** & help eliminate unnecessary suffering from preventable pediatric oral disease. Generous corporate support allows 100% of all contributions to go directly to services for children.

Please visit
www.toothfairycampaign.org
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You will make a difference!

National Children's Oral Health Foundation

Become a Toothfairy...because every child deserves a healthy smile.

THE NCOHF SUPPORTS A NATIONWIDE NETWORK OF NONPROFIT COMMUNITY-BASED CHILDREN'S DENTAL FACILITIES

Celebrities that make you Smile

We, at *Dear Doctor*, would like to recognize and "celebrate the celebrities" who are raising awareness of healthcare issues through their spirit, energy, time, and resources to effect change while creating momentum to help our society fight diseases that touch and affect our lives. They utilize their talent and popularity to help us accomplish great things together by raising money for treatment and research to fight diseases. You never know when your life can be touched by cancer or other diseases at a moment's notice.

Sheryl Crow

Sheryl Crow, a breast cancer survivor and spokesperson for The Breast Cancer Research Foundation, is raising financial support for ground-breaking and promising research that will help lead to prevention and a cure. Her public service announcements for the City of Hope spotlighted attention on their lifesaving research and treatment programs. The organization is dedicated to the prevention and cure of cancer and other life threatening diseases. Sheryl Crow has been inspirational in her fight against cancer. In fact, her presence in helping to raise awareness and financial aid should motivate us all to join the fight.

"I am joining the more than 200,000 women who will be diagnosed with breast cancer this year. We are a testament to the importance of early detection and new treatments... I am inspired by the brave women who have faced this battle before me and grateful for the support of family and friends."

People.com, February 2006

Katie Couric

Cancer can touch our families as it did with Jay Monahan, Katie Couric's husband. He was an MSNBC legal analyst who died of colorectal cancer at age 42. In the face of great personal tragedy, Katie responded heroically by assisting to create The National Colorectal Cancer Research Alliance (NCCRA).

The National Colorectal Cancer Research Alliance (NCCRA) is dedicated to the eradication of colorectal cancer by promoting the importance of early medical screening and funding research to develop better tests, treatments, and ultimately a cure.

Millions of dollars have been raised and every penny is spent on colon cancer research, awareness and public education. These dollars support some of the most advanced medical research in the field today.

Lance Armstrong

Lance Armstrong's track record of achievement is remarkable in many ways. After surviving testicular cancer which nearly took his life, he became the legendary seven time winner of bike racing's most grueling "Tour de France". Yet, his achievements did not end there. Lance Armstrong redirected his focus to provide leadership and strength for others suffering from cancer. He is also a fierce and vocal proponent of cancer research and assists in securing funding for many cancer organizations. Among these causes is the Lance Armstrong's Army to Fight Breast Cancer calling for changes to the U.S. government's health priorities.

The Lance Armstrong Foundation gives inspiration and empowerment to people with cancer through education, advocacy, public health and research programs. His Livestrong Survivor Care Program provides counseling, support and information to anyone battling cancer. In May of 2004, Nike and the Lance Armstrong Foundation developed the "Livestrong Wristband" as a fund-raising tool. The effort exceeded its financial goals as part of the "Wear Yellow Live Strong" educational program that promotes cancer research, raises cancer awareness and encourages people to live life to the fullest.

Blythe Danner

Of special significance to *Dear Doctor* is the courageous work of Blythe Danner, the mother of Gwyneth Paltrow. After director/producer Bruce Paltrow, Blythe's husband and Gwyneth's father, died in 2002 from oral cancer, Blythe Danner, began fighting to raise awareness about this disease. Blythe Danner and her family were crushed by oral cancer as are the families of the 11,000 of the 40,000 Americans diagnosed every year who die of this form of head and neck cancer.

As reported in an interview on Good Morning America (4/26/06),

"It means a lot to get the word out," Danner said. "It's a very unrecognized cancer."

Paltrow was first diagnosed with cancer in the fall of 1998. He had been hoarse for months but had refused to go to the doctor. By the time he went, the cancer was in stage IV.

"Because it was hidden way back in [his] throat, it was hard to detect," Danner said. "Stage I or II, he'd still be with us, I think."

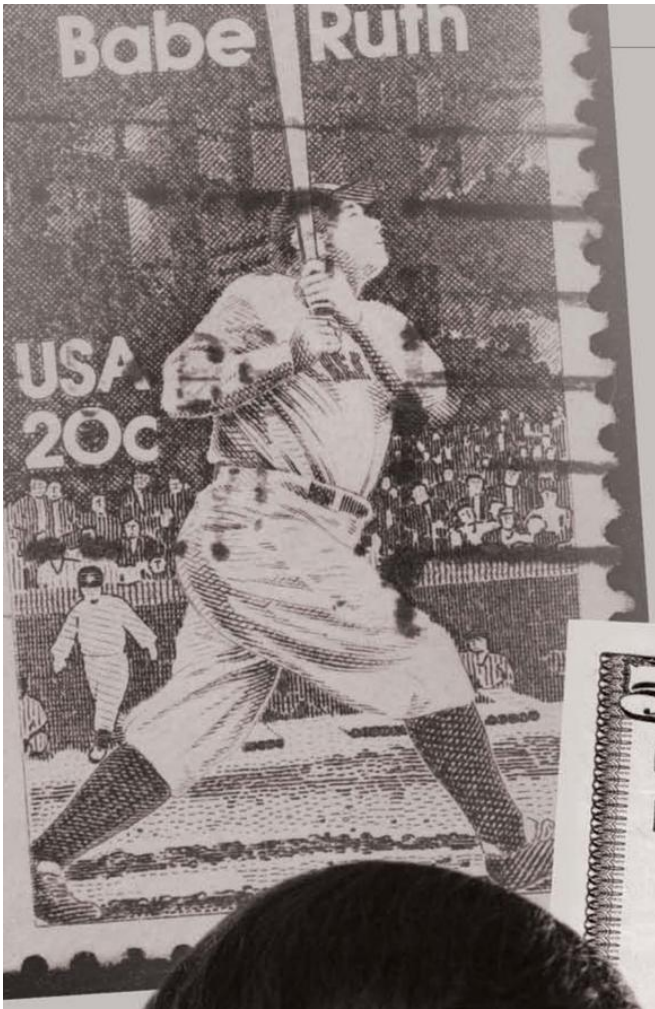
Regular dental checkups are important to early detection, because dentists often see the first signs of the disease, like unusual white spots on the gums or jaws.

Particular warning signs of oral cancer are:

- Persistent sore throat and hoarseness
- Lingering pain in the mouth
- A painless lump in the mouth or on the neck
- Ear pain on one side only

Danner made it her business to get the word out about oral cancer and her outstanding contributions must be recognized as having a major impact on The Oral Cancer Foundation. Her tireless efforts, from filming public service TV announcements to financial contributions have allowed the OCF to raise public awareness in the fight against oral cancer.

For more information and the warning signs of oral cancer, please read our feature article on page 20.



Did you know that these legendary people suffered from oral cancer?

Babe Ruth

The "greatest crowd pleaser of them all" was diagnosed with cancer of the upper throat, cutting his talented life short – a sad ending for a man of such remarkable achievements.

Ulysses S. Grant

The nation's 18th President was stricken with oral cancer and suffered terribly before he died of the disease. Years of cigar smoking and periods of heavy drinking were probably to blame. He remains the only President of the United States to die of cancer.

George Harrison

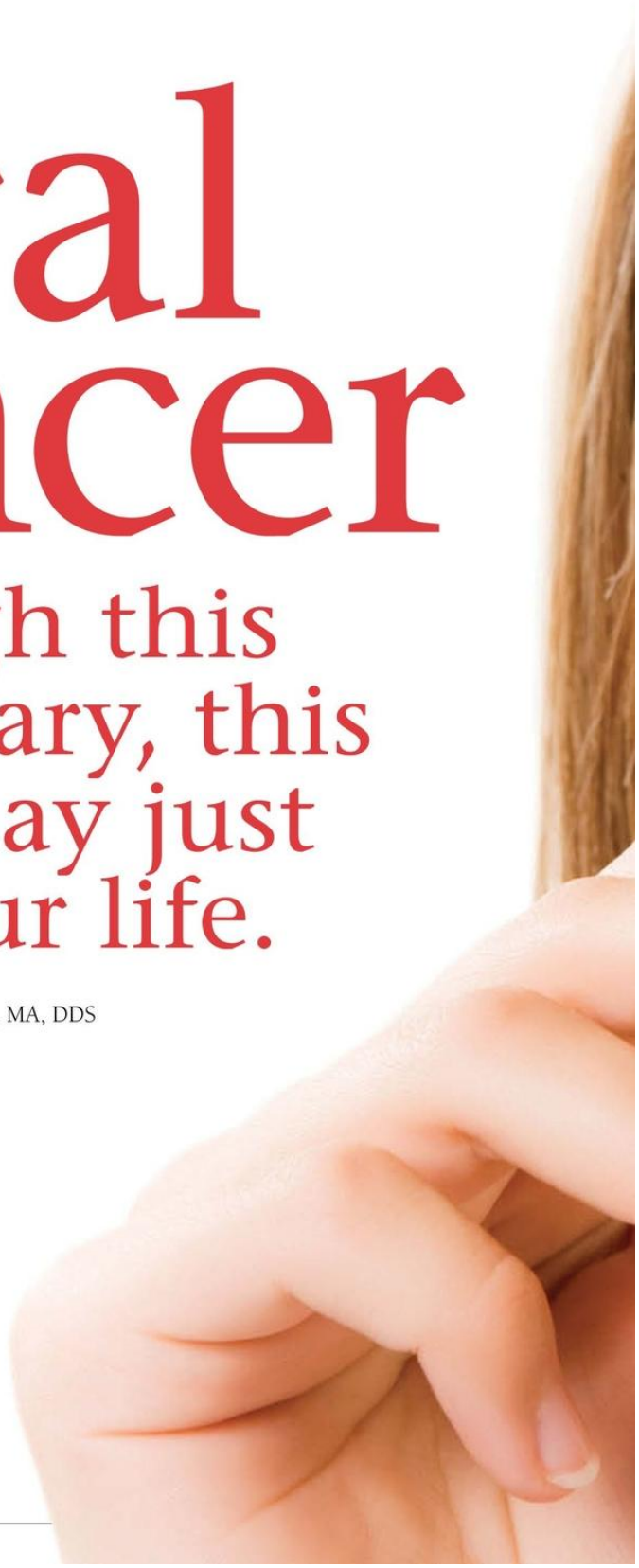
The Beatles' quiet and spiritual guitarist battled with throat cancer which he attributed to his years of heavy smoking. When the oral cancer ultimately spread to his brain the world lost an extraordinary individual when he died at 58 years of age.

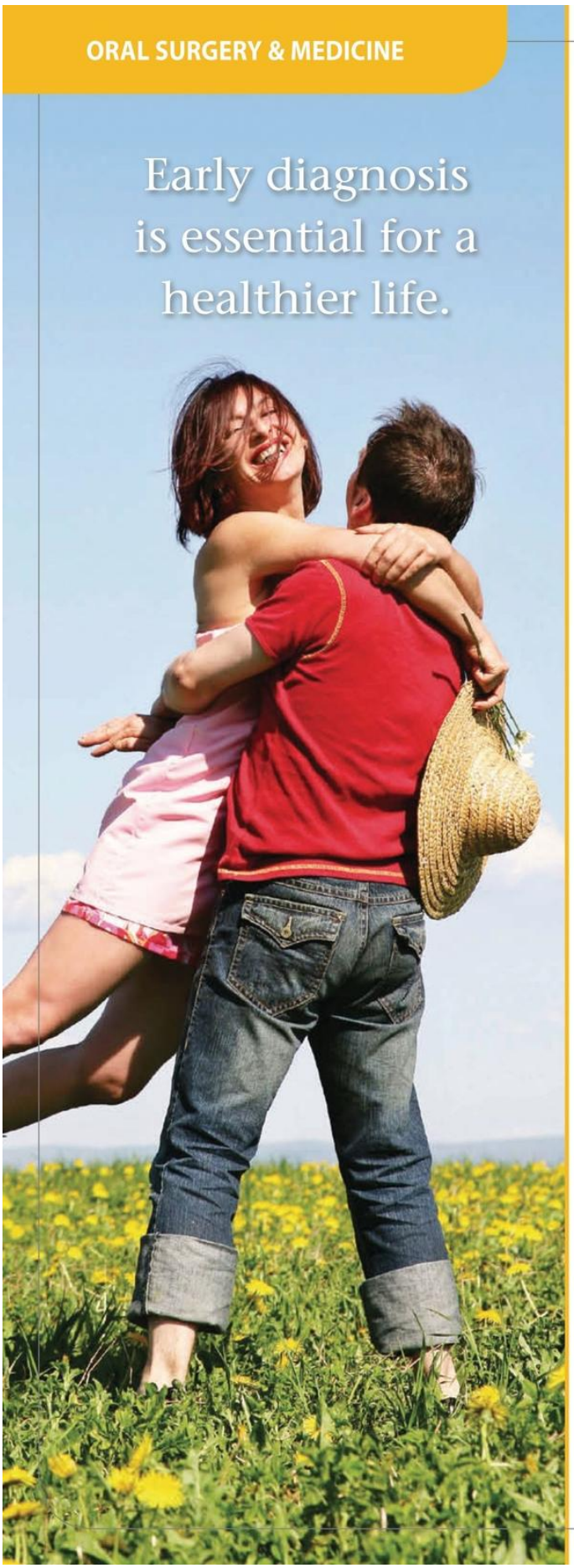
We would like to acknowledge and give special thanks to Brian Hill of The Oral Cancer Foundation (www.oralcancerfoundation.org)

Oral Cancer

Although this topic is scary, this article may just save your life.

by Sol Silverman, Jr., MA, DDS





CANCER: KNOW ALL YOU CAN ABOUT IT

Cancer is one of the scariest words in our language. If you're one of a growing number of people determined to take an active role in your health care now and in the future, you'll want to learn what you can about one of the principal killers in developed nations today. Knowledge is power; let's arm ourselves with as much knowledge as we can. We will begin with an overview then apply the information to a more specific type: oral cancer.

WHAT IS CANCER?

Cancers are a class of diseases characterized by the uncontrolled division of cells and the ability of these cancerous cells to spread. They can grow into nearby tissue through a process known as invasion, or they can be transported through the bloodstream or lymphatic system (a complex system of glands and ducts active in the body's defense against disease), to distant areas by what is called metastasis. I'll attempt to provide what we know today about this major threat.

There are many types of cancers; how severe the symptoms are generally depends on the nature of the malignancy, which refers to cancerous cells that usually have the ability to spread, invade, and destroy tissue. Most cancers can be treated and some even cured, depending on the type, location in the body, and at what stage the cancer is diagnosed. However, once diagnosed, cancer is usually treated with a combination of surgery, "chemotherapy" (drugs which destroy cancerous cells) and "radiotherapy" (killing cancerous cells with radiation).

HOW IS A NORMAL CELL TRANSFORMED?

The unregulated growth of cells that characterizes cancer is caused by damage to DNA, – the stuff that genes are made of. The genes are the command machinery which informs the cells what to do. Mutations, changes to the DNA, alter and damage proper cell function. Many mutation events may take place to transform a normal cell into a malignant one. What causes these mutations to occur? They can be caused by radiation, chemicals or physical agents known as carcinogens, or by certain viruses that

are able to insert their own genetic material into human cells. There are two alarming characteristics of mutations:

- they can occur spontaneously, and
- they may be passed down from one cell generation to the next.

CANCER: A "MULTIFACTORIAL" DISEASE

There are many reasons or factors that cause normal cells to mutate into cancerous ones. Among the most important are:

- **predisposing factors** -- an innate capacity to develop disease that can be triggered under certain conditions, e.g. genetics (genes that are altered or mutate have a tendency to occur along family lines), and
- **risk factors** -- conditions or behaviors that increase the possibility of disease e.g. smoking, chewing tobacco and alcohol use, diets low in fruits and vegetables, viral infections - primarily the human papilloma virus "HPV 16" (the same one that's been in the news lately which causes cervical cancer in women), and an immune (protective) system that is not functioning normally in response to infections or inherited disease.

ORAL CANCER & PRECANCEROUS CONDITIONS

Now that we have more of a background about cancer, its causes as well as its risk factors, let's take that knowledge and apply it to a specific area, the mouth.

Oral cancer accounts for roughly 3% of all cancers in men and 2% in women. Men still outnumber women 2 to 1, but this is changing as women become more exposed to the same risk factors as men. Like all cancers, oral cancer is associated with aging. Did you know that more than 90% of all oral cancers occur in individuals over 40? We now know that African-Americans have a higher incidence than Caucasians and a disturbing number of cases in young people regardless of ethnicity, have been seen in recent years.

The scary aspect of oral cancer is that it's not usually detected until a late stage.

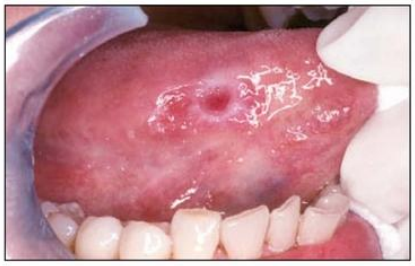


Figure 1: Early cancer (squamous cell carcinoma) that was first thought to be a harmless sore (ulcer) caused by biting the tongue.

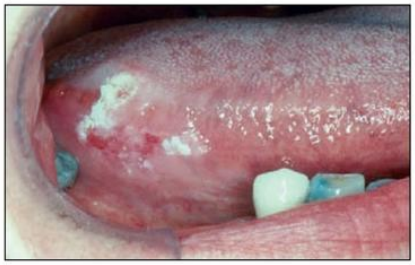


Figure 2: Early cancer (squamous cell carcinoma) that was first mistaken for a harmless white patch (benign leukoplakia).

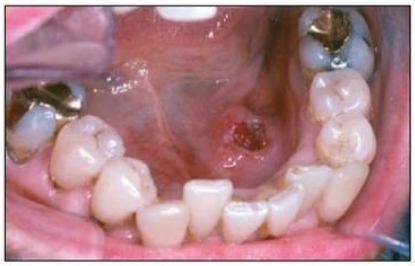


Figure 3: Early cancer (squamous cell carcinoma) of the floor of the mouth was noticed for 2 weeks and at first was thought to be a canker sore.

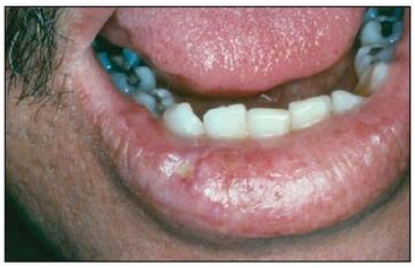


Figure 4: Early cancer (squamous cell carcinoma) of the lip was noticed for 1 month and was at first thought to be a 'cold sore'.

Just ponder this staggering statistic: in 2008, it is estimated that more than 34,000 cancers of the oropharynx (oro-mouth and pharynx–throat), will be diagnosed in the USA. Get familiar with the main areas where oral carcinomas (cancers) occur:

- the oral cavity proper (the mouth),
- the lip, tongue, and
- the pharynx (back of the mouth & throat).

You might say that the mouth and lips are accessible for direct examination all the time by routine visits to the dentist. Thinking along those lines, it's probably easy for a dentist to notice anything unusual in the mouth within a matter of months, right? Here's the scary aspect of oral cancer: it is not usually detected until a late stage. So despite all the advances in treatment, survival is poor, with only 58% surviving 5 years after treatment.

Most oral cancers are "squamous" (small scale-shaped) cell carcinomas, occurring in the lining of the mouth and are often preceded by identifiable surface changes (lesions) of the oral membranes. White or red patches begin to form in the pre-cancerous stage, and as the cancer develops, a non-healing ulcer may appear.

STICK OUT YOUR TONGUE

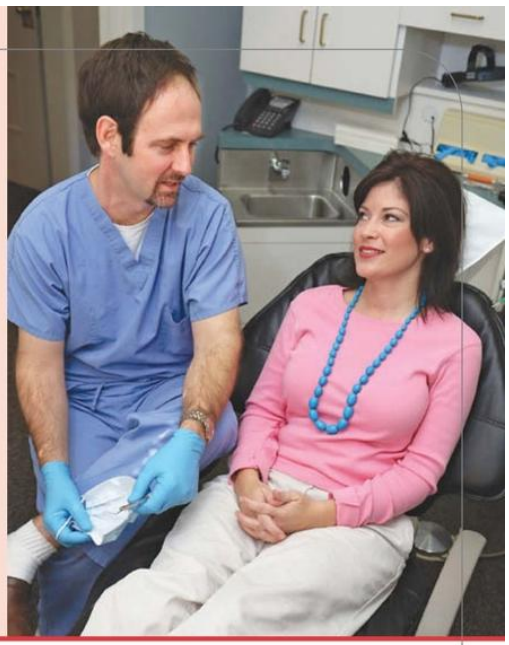
The tongue, particularly the sides are the most common sites for oral cancer [Figure 1 and 2], with the floor of the mouth (under the tongue) coming in second [Figure 3]. Lip cancers mostly affect the lower lip [Figure 4] and frequently there is a history of chronic sun exposure and preceding damage, which shows up as scaling and crusting at the site. The thing to remember here is that recurring ulcers in the lip area can also be mistaken for cold sores. Since the tongue has a rich blood supply and lymphatic drainage (the lymphatic system is a major component of our immune protection system) 30% of cancers have spread or metastasized by the time they are diagnosed. That's a frightening fact. Now let's take that fact a step further -- up to 15% of people diagnosed with oral cancer are normally found to have a second primary cancer.

However, when detected early while a lesion is small, survival rate exceeds 80%. Bear in mind, early detection is key. If you notice any unusual lesions (sores or ulcers), or color changes (white or red patches), anywhere in your mouth that do not heal within two-three weeks get to your dentist or physician as soon as possible.

The Oral Cancer Exam

An oral cancer examination should be part of your dental check-up or regular cleaning appointment. The oral cancer examination consists of the following:

- A visual inspection of your face, neck, lips, and mouth looking for any signs of cancer (such as red and/or white patches).
- Your dentist will feel the floor of the mouth, sides of the neck, glands etc. for any lumps that may suggest cancer.
- Using gauze your dentist will gently pull your tongue from side to side as well as examine the underside of it.
- Your dentist will also ask you to say "Ahh" and will then place an instrument on top of your tongue to examine the back of your throat.



The American Cancer Society recommends a cancer related check up annually for all individuals aged 40 and older and every three years for those between 20 and 29. I recommend this type of cancer related check up on a yearly basis for all adults.

DIAGNOSIS CAN BE COMPLICATED

Earlier we talked about the fact that oral cancers are most often detected when they are at a late stage, with early diagnosis only taking place in about one third of the cases. Unfortunately, recognition is complicated. Why? Because the early signs can mimic harmless sores that occur in the mouth such as canker sores, minor infections, or irritations that occur from biting or even certain foods. When we're given a proper oral cancer exam which includes the oropharynx, the health care professional will feel the neck for lumps; inspect the lips and all inside surfaces of the mouth, including the tonsils at the back of the throat.

Further, we must remember that oral cancers can occur on any surface that lines the mouth and throat, with tongue being the most common site. These changes – as I mentioned earlier -- can appear as white or red patches, ulcers and lumps that may or may not be associated with any discomfort or pain.

An appropriately trained dentist should evaluate any such changes that persist for more than two-three weeks.

Definitive diagnosis requires the microscopic examination of a piece of the lesion (tissue biopsy). This is a procedure usually carried out with local anesthesia, numbing of the involved site with the removal of a sample or all of the abnormal tissue, if small enough. The tissue specimen is then sent to the lab for analysis where it undergoes microscopic evaluation for a more thorough diagnosis.

TREATMENT OF PRE-CANCEROUS CONDITIONS

Pre-cancerous lesions must be assessed by biopsy (tissue sampling for disease). If pre-cancerous changes disappear by removing irritants, e.g. tobacco, alcohol, biting, or other chemical or physical irritants, there is no need to biopsy. Follow up is necessary together with determining a frequency for continued monitoring and evaluation. This will, of course, depend upon the findings at the time of biopsy. The ultimate treatment of pre-cancerous lesions is surgical removal however the use of lasers has been very helpful. Diets, vitamins and other drug or chemical approaches have not been useful.

If there is some reason to delay biopsy, other techniques are available to help evaluate a suspicious lesion. While these non-invasive "adjunctive" techniques are helpful in shedding light on a suspicious lesion, they do not substitute for biopsy confirmation. These FDA-approved devices include the use of light reflections, tissue staining (tolonium chloride), cytology (brush biopsy), and fluorescence. These adjunctive techniques do not require anesthesia and are helpful in accelerating the need for further testing or referral. These techniques are available to general dental practitioners, however biopsy remains the gold standard.

If you notice any unusual lesions (sores or ulcers) anywhere in your mouth that do not heal within two-three weeks get to your dentist or physician as soon as possible.

WHEN CANCER IS DIAGNOSED

Once the diagnosis is definitive, the extent of disease has to be determined so that a treatment plan and prognosis can be formed. Staging is the term used to describe the level a cancer has reached. Involved in staging are clinical, microscopic findings and imaging with techniques such as magnetic resonance imaging (MRI). Depending upon the stage, your health care professional will formulate a treatment plan that will most likely include considerations for surgery and/or radiation and/or chemotherapy. With all treatments, the teeth and membranes of the mouth must be protected from further incidence of decay, gum disease and other infections, dryness of the mouth, and other more subtle changes.

A treatment team is usually comprised of surgeons, radiation and medical oncologists (cancer specialists), dentists, dental hygienists, nurses, and other professional specialists.

In summary, as a health care professional, I hope you understand the importance of knowing all you can about one of the principal killers in developed nations today. Obviously, risk factors can and must be minimized wherever possible and proper periodic oral cancer screening exams should be a priority. Keep in mind, the more you know about this class of diseases, the more empowered you'll be toward paving your road to victory.

HARD FACTS ABOUT ORAL CANCER

Aside from a genetic predisposition, the use of tobacco in any form and/or excessive use of alcohol increase risk for many diseases, including oral and pharyngeal cancer. Let's take a look:

- chronic exposure to the sun is, without a doubt, associated with development of lip cancers
- moderate to heavy drinkers are at three to nine times greater risk than non-drinkers – obviously hard alcohol creates a much greater risk than beer or wine because of the higher alcohol content.
- tobacco smokers are at five to nine times greater risk than non-users
- snuff & chewing tobacco users are at roughly four times greater risk than non-users

ABOUT THE AUTHOR

Sol Silverman, Jr., MA, DDS

Diplomate of the American Board of Oral Medicine, past-president of the American Academy of Oral Medicine; publisher of over 300 scientific articles, chapters in text books, and monographs; author of texts on "Oral Cancer", "Oral Manifestations of AIDS", and "Essentials of Oral Medicine". Honors include: UCSF Medal of Honor; ADA Norton Ross award for excellence in clinical research; honorary Doctor of Science Degree from McGill University, Montreal; Margaret Hay Edwards medal from the American Association for Cancer Education for outstanding contributions to cancer education; Research Lecturer award for the UCSF School of Dentistry; Omicron Kappa Upsilon honor society for lifetime achievements in education.

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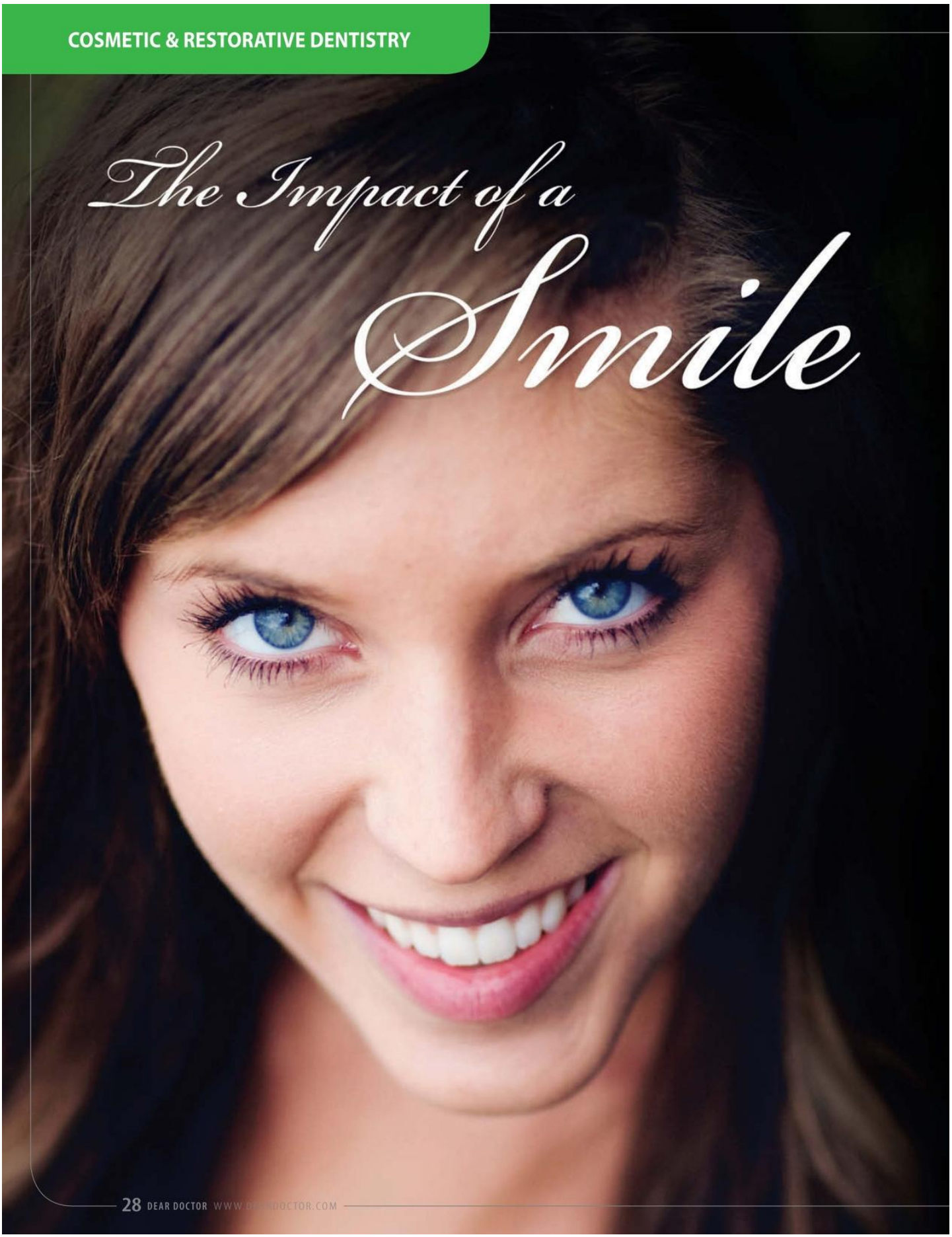
The Impact of a Smile



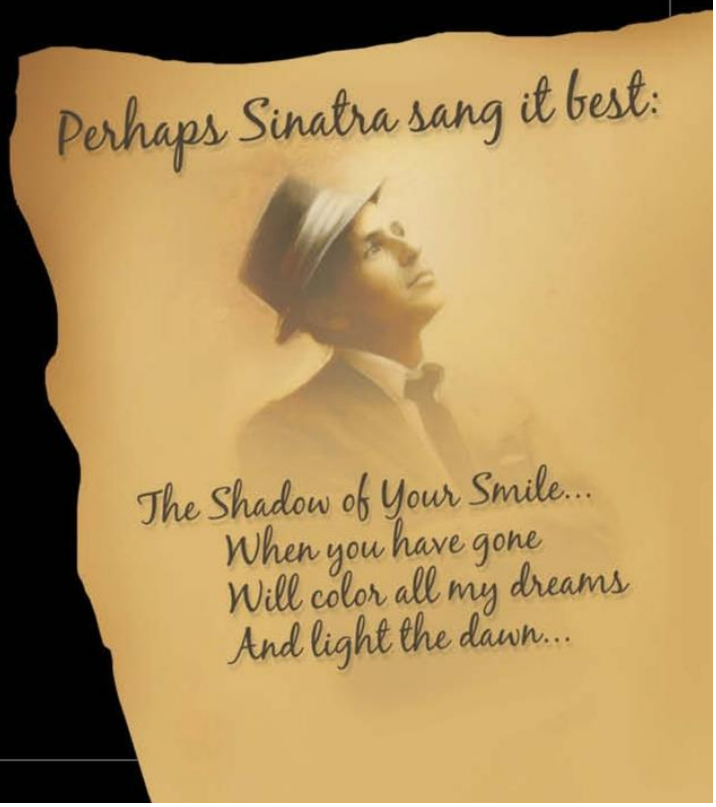
Makeover

What does it really mean?

by Nancy Summer Lerch, DDS, FAGD, AAACD

The subconscious yet contagious impact of a beautiful smile is radiant health, happiness, warmth and invitation. A "Smile Makeover", a common household term for many Americans today, is designed to enhance the esthetic and functional aspects of teeth through cosmetic and restorative dental procedures leaving one with a brighter, whiter, more youthful smile. In the overall context of the face, it's the eyes and smile that speak to us. When you smile they both light up.

Americans are catching on to the emotional and social importance of a healthy, beautiful smile, and they're seeking out ways to improve their smiles. It's not only the rich and famous looking for a smile makeover. According to the largest organization devoted to smile enhancement dentistry, the American Academy of Cosmetic Dentistry, over 70% of clinical inquiries about cosmetic dentistry come from those in the 31-50 age group – including not only people in family situations and the workforce who want to improve their social and business interactions, but also individuals who just simply want to feel better about themselves.



First Impressions

First impressions are not only important; they often last the longest.

There is no doubt that among people suffering from poor self-image, dental concerns rank among the highest. Smiling, one of humanity's most innate and in-borne natural expressions, is inhibited when it's not all it can be. Raising the curtain on the theatre of a smile sets the stage before the show even starts. When the curtain goes up and teeth are discolored, missing, or misaligned, it may be a show stopper right there.

It really doesn't matter if it is a serious defect or a slight imperfection – if a person is self-conscious about their smile, it can exact an emotional toll and adversely affect interactions with others.

The greatest effect, of course, is within the person himself or herself - YOU - and often it doesn't end there. Far from being "just in your mind," an inhibited smile may also affect others' perceptions of you.

Self-expression is one of the basic freedoms that Americans enjoy. This begins with our ability to engage with others through smiling, laughing and a host of facial expressions. However, the inhibited feelings associated with an unattractive smile have a ripple effect:

- Friendships and family relations can suffer; dental appearance can even determine who we allow ourselves to fall in love with.
- Careers can be affected by dental imperfections; those interviewing for jobs and for those whose jobs depend on networking, the self-consciousness of a poor smile can limit a career.
- Our own feelings of being free and outgoing become stifled. We become aware that we are not as happy as we could be. We then limit our possibilities we have in the world and our future does not look as rosy as it once did.

Is your smile working for you?

Although a vast number of Americans understand the importance of a good smile, only half think their smile makes the grade.

A study by the American Academy of Cosmetic Dentistry

Perceptions of a Smile

Beall Research & Training, a marketing research firm recently conducted a study evaluating how individuals perceive others according to the quality of their smile. In the study, over five hundred people were shown photographs taken before and after treatment of several individuals who had undergone various degrees of cosmetic dentistry. Each picture was classified by the perception of change created by the "smile makeover". The photographs were defined as mild, moderate and extreme in regards to the change in appearance (none of the subjects in the photos had catastrophic or grossly deformed smiles to begin with). They were asked to rate each individual they viewed on a scale of 1 to 10 ("1" equaling "no change at all" and "10" equaling "extreme change") for ten different character traits including "intelligence," "happiness" and "degree of success."

While the amount of the cosmetic change between the two photos in each set may be viewed as "not dramatic", the change in perceptions of those who viewed the photo sets made a definite impact on the measurements. Every category saw a significant improvement in scoring for each pictured individual when comparing the before photos to the photos after cosmetic dentistry. The most significant improvements in character traits occurred in the categories of "attractiveness," "wealthy" and "popular with the opposite sex".

Beyond personal and social perceptions, smiling is also viewed as a key component in gaining cooperation, especially among strangers, in a variety of human interactions and transactions. In other words, as the late Dale Carnegie might have put it, a smile is contagious. It can help you "win friends and influence people."

In 1999, scientists from a variety of disciplines, including zoology and economics, put this idea to the test. Over one hundred subjects participated in a game with the object of making a simple "one-shot" bargaining deal (based on trust) with another participant whom they had not met. They had, however, seen photos of the other contestants – under controlled conditions – of either their bargaining partner smiling or not smiling. The results lent support to the idea that game partners previously viewed as smiling had a greater chance of eliciting trust and completing the bargain.

The Proof is in the Results

Take for example Wendy (pictured below). She had just suffered through the premature death of her husband and was getting back on her feet. She had always hated her short, small, mismatched teeth. She wanted a new look as she began to date again. After whitening, and the placement of upper porcelain crowns and lower porcelain veneers she immediately began to express more confidence and contentment in her interactions with men. This extended to all other areas of her life too.

"My smile makeover made a tremendous difference to me – I now have a beautiful smile. I love the way I look! I feel brighter, whiter and younger!!! I find myself laughing and smiling with ease and grace. I should have done this a long time ago!"

The makeover also re-ignited her professional confidence. "I've always been good at dealing with the public, but I noticed a definite boost in the harmony I now enjoy in my personal and professional relationships." says Wendy. "I feel my current success is linked to the dental work I received. Even my kids are noticing the change in my self-expression. They say I am happier. I am!"

Wendy's example underscores the true importance of a smile makeover: while cosmetic dentistry rarely corrects life-threatening conditions, its impact on emotional and social health can be exponential. A smile makeover truly can change your life for the better.

Before & Afters

"My smile makeover made a tremendous difference to me - I now have a beautiful smile. I love the way I look! I feel brighter, whiter and younger!!! I find myself laughing and smiling with ease and grace. I should have done this a long time ago!"

Wendy's Makeover: Her beautiful smile was created using of a combination of porcelain veneers and crowns, as well as subtle changes in tooth size and position.

Amy* (pictured below) was soon to be married. All her life she had hated her crowded, protruding front teeth. She could not imagine that on this day, the most important day of her life, she would have to hide her smile. In a very short period (3 weeks) she whitened her teeth and then had just four porcelain veneers placed on her front upper teeth. Amy could smile fully and happily for the first time in her life!

"I had the best wedding ever – I was beaming! You can see it in all my pictures. I felt like I was on top of the world. I wasn't holding anything back! That full enjoyment was exactly what I was looking for and it was all so easy to obtain."

Amy's treatment was simple and easy to do. It only involved four teeth and four office visits. The first visit was for records, models and photographs. The second visit was for the treatment plan discussion and whitening. The third and fourth were for preparation and then cementation of the veneers.

An additional benefit of her smile makeover was the increased self-assurance Amy felt at work. In her profession as a psychologist, she was able to be a better therapist because she was not holding her self-expression back from her clients.

"My smile makeover was the best thing I ever did for myself. I noticed how much more fun I was having with my clients and what better results I was helping them gain. This gave me the confidence to start my own practice in a new city with my husband."

People are viewed as more attractive, intelligent, happy, successful in their career, friendly, interesting, kind, wealthy and popular with the opposite sex with smiles that have been altered by cosmetic dentistry versus their original smiles.

A study by Beall Research & Training, Inc.

Amy's Makeover: A subtle smile makeover changed the tooth position through the use of four porcelain veneers which eliminated her protruding front teeth (featured below). She also had tooth whitening which has brightened her beautiful smile.

"My smile makeover was the best thing I ever did for myself. It gave me the confidence to start my own practice in a new city with my husband."

* not her real name

You Have the Ability to Smile

We are not all born with a beautiful smile. Yet, we are all born with the ability to smile. If you are not projecting radiant health, contentment and cheerfulness through your smile, perhaps you should consider an enhancement, if not a makeover. Cosmetic and restorative dental procedures can do that for you. After all, smiling and laughing are contagious and this is a good way to infect someone!

Perhaps Sinatra sang it best:

....Now when I remember spring
And every little lovely thing
I will be remembering
The shadow of your smile
Your lovely smile

Do You Need a Smile Makeover?

Use the following self-test to see whether you can benefit and improve your smile through cosmetic dentistry. If you answer yes to any of the following questions, it may be right for you.

- ☐ Do you avoid smiling in photos?
- ☐ Are you conscious about spaces and gaps in your teeth?
- ☐ Are your teeth making you look older than you feel?
- ☐ Have you held back a smile?
- ☐ Do you feel that your teeth are stained or too yellow?
- ☐ Do you hold your hand up in front of your mouth when speaking or laughing?
- ☐ Do you notice areas of excessive tooth wear that make your smile look older?
- ☐ Do you have little teeth and a gummy smile?
- ☐ Are your teeth crooked, chipped or crowded?
- ☐ Do you wish you had someone else's smile?

ABOUT THE AUTHOR

Nancy Summer Lerch, DDS, FAGD, AAACD

Dr. Lerch is the founder of the Center of Esthetic Dentistry, LLC where she focuses on comprehensive restorative and cosmetic dental solutions, including smile makeovers and full mouth reconstruction. She is an Accredited member of the American Academy of Cosmetic Dentistry (AACD) where she now acts as an examiner and Chair of the AACD Ethics Committee. She is a Past President of the New England Academy of Cosmetic Dentistry (NEACD), a past AACD Board Member and has attained Fellowship status in the Academy of General Dentistry. She has published numerous papers and lectures throughout the country on a variety of topics. In 2003, Dr. Lerch founded Hope In A Smile, a program dedicated to providing free dental services for women who cannot smile due to domestic violence trauma. She is a graduate of the Univ. of Washington School of Dentistry and completed the Family Dentistry Residency program from the Univ. of Connecticut School of Dental Medicine.

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Repairing Chipped Teeth

A composite restoration or "bonding" is an ideal material choice for a growing 16-year-old

A Consultation with Dr. Jeff J. Brucia

Repairing Chipped Teeth?

From: Joan (Utah)

To: Consultations@deardoctor.com

Subject: Repairing Chipped Teeth?

Dear Doctor,
My 16 year old son recently chipped his two front teeth when he went over the handle bars of his mountain bike. Our dentist fixed them by "bonding" some filling material to them. She said they might not last forever, but they look great – can you tell me more about them?

Dear Joan,

Your dentist placed "composite resin" restorations on your son's teeth to replace the missing tooth structure. These tooth-colored fillings are a mixture (a "composite") of a plastic-based matrix with inorganic glass filler. A "coupling" or joining agent is used to enhance the bond between the two components. The glass filler gives the composite resin wear resistance and translucency for both strength and esthetics. The ratio of plastic matrix to glass filler in the composite resins can vary depending on the circumstance it's to be used for; biting areas will require more filler for strength, esthetic areas less. And, there are multiple types and brands.

Composite resins can be bonded to most healthy tooth structure. They are joined or bonded to the teeth mechanically through microscopic "undercuts" (or locks) in the natural tooth substance that allow the tooth enamel and composite resin to function and look like one piece. Direct composite materials have superior advantages to traditional materials like amalgam (silver filling): improved appearance, a more conservative preparation and greater use of the existing tooth to support the restoration.

> Composites can be made in a wide range of tooth colors allowing for near perfect color matching with existing teeth – in artistic hands they can be made to look very natural and lifelike.

Composites can be made in a wide range of tooth colors allowing for near perfect color matching with existing teeth – in artistic hands they can be made to look very natural and lifelike. Composites can be placed quite quickly and easily, and are relatively inexpensive. They require very little tooth preparation (drilling) of the healthy tooth structure since they can be bonded directly to the tooth.

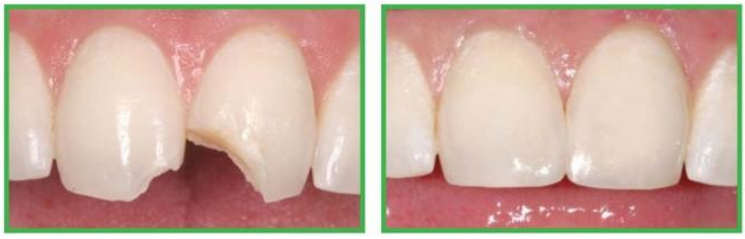
However, there are some disadvantages. The more tooth structure lost through injury or decay, the less effective they become because the material itself is not as strong as the tooth structure it replaces. Consequently, a large bulk of composite resin may not stand up to biting force over time. The composite can also stain and dull as it ages. However, it's a good interim material until a patient can receive a porcelain restoration, which could be a better long-term material selection.

Composite resins are also an ideal material choice for teens like your son because their dental arches (the upper and lower jaws) are still developing. The pulp chambers containing the nerves of his teeth are still probably quite large. By placing more permanent restorations like porcelain veneers or crowns that require more tooth structure removal, the long term health of his teeth might be compromised. After his teeth have fully developed, though, you might consider the more permanent restoration.

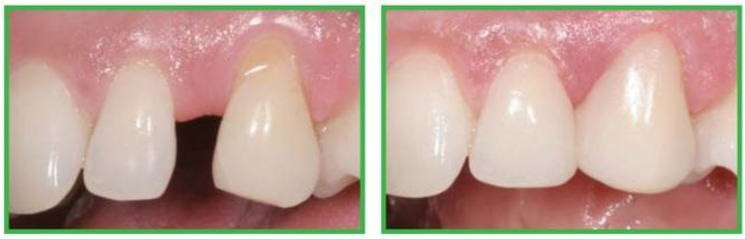
One other bit of advice from a dental professional: you might consider a custom mouthguard to protect his teeth from a similar injury as long as he's participating in high risk sports – ask your dentist.

Sincerely,
Jeff J. Brucia, DDS

Example 1: The patient had a chipped front tooth that is repaired beautifully with the use of a composite restoration or most commonly referred to as a bonded restoration.



Example 2: This patient had two chipped front teeth which is a more difficult restorative problem providing an excellent example of how a beautiful cosmetic result can be obtained with bonded restorations.



Example 3: This example illustrates how composite restorations can close spaces between teeth as well as repair the exposed root of the tooth.

Composite resins are an ideal material choice for teens because their dental arches (the upper and lower jaws) are still developing.

ABOUT THE AUTHOR

Jeff J. Brucia, DDS

Dr. Brucia graduated from the University of the Pacific, Dugoni School of Dentistry, San Francisco, CA, where he is Assistant Professor of Dental Practice. He has a full time practice specializing in Aesthetic and Restorative dentistry. He is Co-Director of the FACE Institute where he chairs the department of Aesthetics and Adhesive Material Science, building a partnership between gnathology, occlusion and adhesion dentistry. He is a member of the prestigious American Academy of Esthetic Dentistry; is a published author of clinical articles; a guest editor and clinical reviewer for several journals. He has received Fellowships in the American and International College of Dentists, the Academy of Dentistry International, the Pierre Fauchard Academy and the Doctoral Degree with Delta Sigma Delta.

The "Great" Mini-Implant

A successful and inexpensive way to stabilize your denture

A Consultation with Dr. Mark B. Snyder

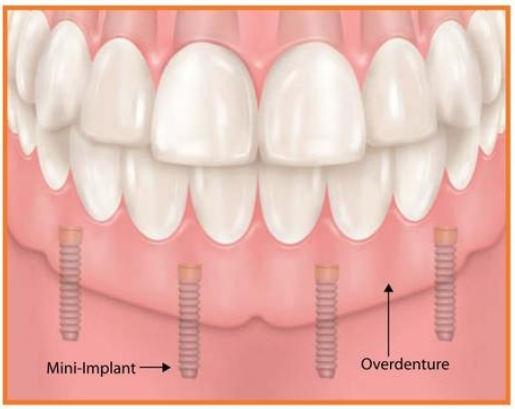
Mini-Implants?

From: Sylvia (Massachusetts)

To: Consultations@deardoctor.com

Subject: Mini-Implants?

Dear Doctor,
I am a 73 year old woman and I have had trouble with my lower denture for the last several years. I recently heard about mini-implants. What are they and could they be right for me?



4 mini-implants are recommended to support an overdenture in the lower jaw

Dear Sylvia,

There are millions of Americans wearing dentures and many of them share the same complaints you have. Unfortunately, when your teeth are removed, the shape of the jaw bone changes during healing. And after a denture is made, the pressure of the denture during chewing causes even more bone loss. That is why so many people have to use denture adhesives to keep their "teeth" in place.

The value of dental implants is that they can preserve the remaining bone, prevent more bone deterioration, and secure your dentures. Mini-implants are a derivation in design of the now standard dental implant design. Dental implants are root form replacements, usually made of commercially pure titanium. This metal has a unique ability of fusing to bone, in a process called osseointegration, which after healing is quite successful, predictable and stable.

The latest option for denture patients with your problem is the use of small diameter "mini- implants". The advantage of this approach is that in a single two hour visit, these implants can be placed and your current denture can be modified so you can eat a steak that night!

The procedure is done using routine novocaine and usually does not require incisions or stitches. If you are taking blood thinners such as Coumadin or Plavix, these may not need to be discontinued before the procedure.

Contact your dentist for an evaluation and his recommendations and he will determine if mini-implants are right for you.

Sincerely,
Mark B. Snyder, DMD

ABOUT THE AUTHOR

Mark B. Snyder, DMD

Mark B. Snyder, D.M.D. is Clinical Associate Professor of Periodontics at the University of Pennsylvania School of Dental Medicine. He received his certification in Periodontics and Oral Medicine from the University of Pennsylvania and trained in Oral Pathology and Surgery at Guy's Hospital in London, England. He is a Fellow of the American College of Dentists, the American Academy of Oral and Maxillofacial Pathology, the College of Physicians of Philadelphia and Diplomate of the American Board of Oral Medicine. He has private practices limited to periodontics and implant dentistry.

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Ask your dentist today about how dental implants may give you the closest thing to beautiful, natural teeth.

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Expectant Mothers

Dental facts you need to know

A Consultation with Dr. Mary Le

Expectant Mothers

From: Kylie (New York)

To: Consultations@deardoctor.com

Subject: Expectant Mothers?

Dear Doctor,
I'm so excited -- I just found out that I'm pregnant with my first child! Since I had bad teeth as a child, I want to ensure that my baby will be healthy and have good teeth. Can you answer my questions?

Dear Kylie,

Congratulations on your pregnancy! Since you have so many questions, I've listed them below to make it easier for our readers. You are wise to already be thinking about your baby's dental health because his/her teeth have already started forming in the tiny jaw bones, by the fifth to sixth week after conception. By birth, all twenty primary (baby) teeth are almost completely formed. Here are some facts that you will need to know:

The best thing you can do as an expectant mother is to nurture and maintain your own dental and general health. It's best to eat a balanced diet and avoid starchy and sugary snacks between meals. A healthy and balanced diet will provide you with the calcium, phosphorus and other vitamins and minerals needed for your baby's teeth and bones. Throughout your pregnancy, your physician will evaluate your specific needs and advise you accordingly.

Does the calcium for the baby's teeth come from my teeth?
No! It's important for us to dispel a common myth that the calcium needed for your baby's teeth comes from the mother's teeth. The truth is that it comes from your diet.

What's the best way to care for my teeth?

To help prevent tooth decay and periodontal (gum) disease, brush your teeth thoroughly twice a day. A fluoridated toothpaste that has the ADA seal of approval to remove plaque is recommended. Be sure to clean between your teeth daily with floss or inter-dental cleaners, and supplement with an anti-plaque/anti-gingivitis mouthrinse that has the ADA seal of approval. To learn how to brush and floss correctly, consult your dentist or hygienist.

What about fluoride?

For women who take fluoride supplements during pregnancy, the expectation is that the additional fluoride will help their children form strong teeth. This may sound appealing, but the benefits of prenatal fluoride supplementation remains poorly studied and therefore quite controversial. Fluoride supplements will not necessarily aid in the process of enamel formation because fluoride works best when the teeth have fully formed and have erupted in the mouth. Fluoride changes the chemical bonds in the enamel of the erupted teeth to make it more cavity-resistant.

Due to the fact that prenatal fluoride supplementation remains poorly studied, there are many unanswered questions. Therefore, indications for prenatal fluoride supplementation have not been established. More research is needed to determine the advantages, if any, and the dosage levels for prenatal fluoride supplementation.

Does pregnancy affect my gums?

During pregnancy, your body's hormone levels rise considerably. Gingivitis, inflammation of the gums, is especially common during the second through the eighth month of pregnancy. This may cause red, puffy or tender gums that tend to bleed when you brush. This sensitivity is an exaggerated response to bacterial plaque and is caused by an increased level of the hormone progesterone in your system which is normal during pregnancy. Occasionally, overgrowths of gum tissue, called "pregnancy tumors," appear on the gums during the second trimester. These non-cancerous localized growths or swellings are usually found between the teeth and are believed to be related to excess plaque. Hence, it's especially important to maintain a high level of oral hygiene during pregnancy. Studies have suggested that pregnant women who have severe periodontal (gum) disease may be at a higher risk for preterm birth and low birth weight. If you notice any changes in your mouth during your pregnancy, please consult your dentist.

Gingivitis, inflammation of the gums, is especially common during the second through the eighth month of pregnancy.

Hope you have a safe pregnancy and an easy delivery!

Sincerely,
Mary Le, DDS, MS

ABOUT THE AUTHOR

Mary Le, DDS, MS

Mary Le is a diplomate of the American Board of Pediatric Dentistry. Dr. Le received her dental degree, cum laude, from the six-year B.A. - D.D.S program at University of Missouri-Kansas City. She continued her pediatric dental training at University of California-San Francisco and received a Masters in Oral and Craniofacial Sciences. She currently is on faculty at the University of Pacific as an Assistant Professor of Pediatric Dentistry. She has a part time private practice specializing in pediatric dentistry.

Genetics & Gum Tissue Types

Thick vs. Thin Gum Tissue Types - Which type are you and what does it mean for your dental health?

A Consultation with Dr. Arnold S. Weisgold

Genetics & Gum Tissue Types?

From: Millie (California)

To: Consultations@deardoctor.com

Subject: Genetics & Gum Tissue Types?

Dear Doctor,
My dentist told me my gums were receding, and that I had a "thin tissue type." Could you explain what this means and what the implications might be?

Dear Millie,

Your dentist has identified the two basic types of gum tissues, termed by dentists as "Periodontal Biotypes." Although there are variations found in all populations, we generally think of two types – "thin/scalloped" [Figure 1] and "thick/flat" [Figure 2]. These refer to the actual consistency (or thickness) of the gum tissue and underlying bone, as well as the forms of the surrounding tissues.

The major factor that determines what particular biotype you are is the shape of your teeth. A triangular-shaped tooth usually results in a thin/scalloped form [Figure 1]; a squarer tooth usually results in the thick/flat form [Figure 2]. Since our tooth shapes are genetically-coded, we have no control over these shapes or the ultimate forms of the surrounding gum tissue and bone – another thing we can blame on our parents!

> Since our tooth shapes are genetically-coded, we have no control over these shapes or the ultimate forms of the surrounding gum tissue and bone

Figure 1: An example of a thin/scalloped tissue type. Notice the triangular shaped tooth form and the soft tissue appearance.

Figure 2: An example of a thick/flat tissue type. Notice the square shaped tooth form and the soft tissue appearance.

Figure 3: A classic example of a thin/scalloped tissue type that has undergone gingival (gum) recession.

Afraid to smile because of receding gums or periodontal disease?

Ask your doctor about the new *GEM* in dentistry!

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GEM 21S® Growth-factor Enhanced Matrix is intended for use by clinicians familiar with periodontal surgical grafting techniques. It should not be used in the presence of untreated acute infections or malignant neoplasm(s) at the surgical site or, in patients with a known hypersensitivity to one of its components. It must not be injected systemically.

The safety and effectiveness of ***GEM 21S***® has not been established in other non-periodontal bony locations, in patients less than 18 years old, in pregnant or nursing women, in patients with frequent/excessive tobacco use (e.g. smoking more than one pack per day) and in patients with more severe defects. In a 180 patient clinical trial, there were no serious adverse events related to ***GEM 21S***®; adverse events that occurred are those associated with periodontal surgical grafting procedures in general, including swelling, pain, bleeding, dizziness, fainting, headaches, infection, loss of feeling.

Afraid to smile because of receding gums or periodontal disease?

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GEM 21S® is available now. Ask your dentist or dental surgeon how you can be part of the ***GEM*** revolution.

GEM 21S®

GROWTH-FACTOR ENHANCED MATRIX

Osteohealth®
REVOLUTIONIZING REGENERATION™

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GEM 21S® Growth-factor Enhanced Matrix

Caution: Federal Law restricts this device to sale by or on the order of a dentist or physician.

GEM 21S® is composed of two sterile components:
- synthetic beta-tricalcium phosphate (ß-TCP) [Ca3 (PO4)] is a highly porous, resorbable osteoconductive scaffold or matrix that provides a framework for bone ingrowth, aids in preventing the collapse of the soft tissues and promotes stabilization of the blood clot. Pore diameters of the scaffold are specifically designed for bone ingrowth and range from 1 to 500 µm. The particle size ranges from 0.25 to 1.0 mm and
- highly purified, recombinant human platelet-derived growth factor-BB (rhPDGF-BB). PDGF is a native protein constituent of blood platelets. It is a tissue growth factor that is released at sites of injury during blood clotting. Extensive *in vitro* and animal studies have demonstrated its potent mitogenic (proliferative) and chemotactic (directed cell migration) effects on bone and periodontal ligament derived cells. Animal studies have shown PDGF to promote the regeneration of periodontal tissues including bone, cementum, and periodontal ligament (PDL).

The contents of the cup of ß-TCP are supplied sterile by gamma irradiation. Sterile rhPDGF-BB is aseptically processed and filled into the syringe in which it is supplied. All of these components are for single use only.

INDICATIONS:
GEM 21S® is indicated to treat the following periodontally related defects:
- Intrabony periodontal defects;
- Furcation periodontal defects; and
- Gingival recession associated with periodontal defects.

CONTRAINDICATIONS:
As with any periodontal procedure where bone grafting material is used, *GEM 21S®* is CONTRAINDICATED in the presence of one or more of the following clinical situations:
- Untreated acute infections at the surgical site;
- Untreated malignant neoplasm(s) at the surgical site;
- Patients with a known hypersensitivity to any product component (ß-TCP or rhPDGF-BB);
- Intraoperative soft tissue coverage is required for a given surgical procedure but such coverage is not possible; or
- Conditions in which general bone grafting is not advisable.

WARNINGS:
The exterior of the cup and syringe are NOT sterile. See directions for use. It is not known if *GEM 21S®* interacts with other medications. The use of *GEM 21S®* with other drugs has not been studied. Carcinogenesis and reproductive toxicity studies have not been conducted.
The safety and effectiveness of *GEM 21S®* has not been established:
- In other non-periodontal bony locations, including other tissues of the oral and craniofacial region such as bone graft sites, tooth extraction sites, bone cavities after cystectomy, and bone defects resulting from traumatic or pathological origin. *GEM 21S®* has also not been studied in situations where it would be augmenting autogenous bone and other bone grafting materials.
- In pregnant and nursing women. It is not known whether rhPDGF-BB is excreted in the milk of nursing women.
- In pediatric patients below the age of 18 years.
- In patients with teeth exhibiting mobility of greater than Grade II or a Class III furcation.
- In patients with frequent or excessive use of tobacco products.

Careful consideration should be given to alternative therapies prior to performing bone grafting in patients:
- Who have severe endocrine-induced bone diseases (e.g. hyperparathyroidism);
- Who are receiving immunosuppressive therapy; or
- Who have known conditions that may lead to bleeding complications (e.g. hemophilia).

The *GEM 21S®* grafting material is intended to be placed into periodontally related defects. It must not be injected systemically.

The radiopacity of *GEM 21S®* is comparable to that of bone and diminishes as *GEM 21S®* is resorbed. The radiopacity of *GEM 21S®* must be considered when evaluating radiographs as it may mask underlying pathological conditions.

PRECAUTIONS:
GEM 21S® is intended for use by clinicians familiar with periodontal surgical grafting techniques. *GEM 21S®* is supplied in a single use kit. Any unopened unused material must be discarded and components of this system should not be used separately.

ADVERSE EVENTS:
Although no serious adverse reactions attributable to *GEM 21S®* were reported in a 180 patient clinical trial, patients being treated with *GEM 21S®* may experience any of the following adverse events that have been reported in the literature with regard to periodontal surgical grafting procedures: swelling; pain; bleeding; hematoma; dizziness; fainting; difficulty breathing, eating, or speaking; sinusitis; headaches; increased tooth mobility; superficial or deep wound infection; cellulitis; wound dehiscence; neuralgia and loss of sensation locally and peripherally; and, anaphylaxis.

Occurrence of one or more of these conditions may require an additional surgical procedure and may also require removal of the grafting material.

STORAGE CONDITIONS:
The *GEM 21S®* kit must be refrigerated at 2°-8o C (36°-46o F). Do not freeze. The individual rhPDGF-BB component must be refrigerated at 2°-8o C (36°-46o F). The ß-TCP cup can be stored at room temperature, up to 30o C (86o F). The rhPDGF-BB component must be protected from light prior to use; do not remove from outer covering prior to use. Do not use after the expiration date.

Manufactured By:
BioMimetic Therapeutics, Inc.
389-A Nichol Mill Lane
Franklin, TN 37067

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Osteohealth Company
Division of Luitpold Pharmaceuticals, Inc.
One Luitpold Drive, P.O. Box 9001
Shirley, NY 11967
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PATENTS PENDING

BS0005 Iss. 12/05

Furthermore, a growing line of evidence now indicates that different racial groups characteristically have different tooth forms. For example, a higher proportion of Caucasians and Blacks have a square tooth shape, while Asians commonly have a more triangular shape.

Thin Tissue Types – More Susceptible to Gum Recession

Problems can arise from the thin tissue type, most notably gum recession [Figure 3]. This can occur around any tooth, but it's most obvious with the front teeth. There are a few signs that may indicate gum recession:

- Sensitivity to cold (as when you eat ice cream), even where no dental decay is present.
- A dark gray line at the gum line in patients who have crowns on their teeth – the gray color comes from the metal casting beneath the porcelain material of the crown.
- Small dark triangular spaces between adjacent teeth as the papillae are lost – the pink gum tissue that normally completely fills the space between the teeth.

Thick Tissue Type – More Susceptible to Periodontal Pocketing

Thicker tissue types are susceptible to dental disease through a condition known as "pocketing." Dental bacterial plaque causes a thicker tissue type to become inflamed, lose its tight attachment to the tooth and develop a "pocket." Like putting your hand in a pocket, a dentist can place a small calibrated probe in a periodontal pocket to assess the millimeters of detachment. Pocketing results in bone loss and can ultimately jeopardize the life of the tooth.

Thick or thin? The two terms as well as anything else allow the dentist to categorize different tissue types for clinical decision making. However, many people's tissues fall somewhere in between the two varieties.

Treatment and Prevention

The obvious question then is: what can my dentist and I do about this? Since you can't do anything about your inherited tissue type, you must take every possible precaution to prevent periodontal disease. If this disease develops, gum recession will usually follow in the thinner areas, along with the breakdown of the underlying bone (what dentists call resorption) while in the thicker areas you're prone to pocketing. Good daily oral hygiene is the best starting point. You should use a soft toothbrush and floss regularly, but with great care – overzealous flossing that goes too deep below the gum line can cause an injury similar to a paper cut and can result in recession.

If recession does occur, all is not lost. Your dentist may utilize periodontal plastic surgical techniques to "graft tissue" – tissue taken from another part of the mouth and surgically placed around the recession – to prevent further damage.

Obviously, your dentist recognizes the potential problems you can have with your thin tissue type and will take special care to prevent recession. Since you're now both alerted to the problem, I'm confident you and your dentist will take the necessary precautions to prevent compromising your dental health.

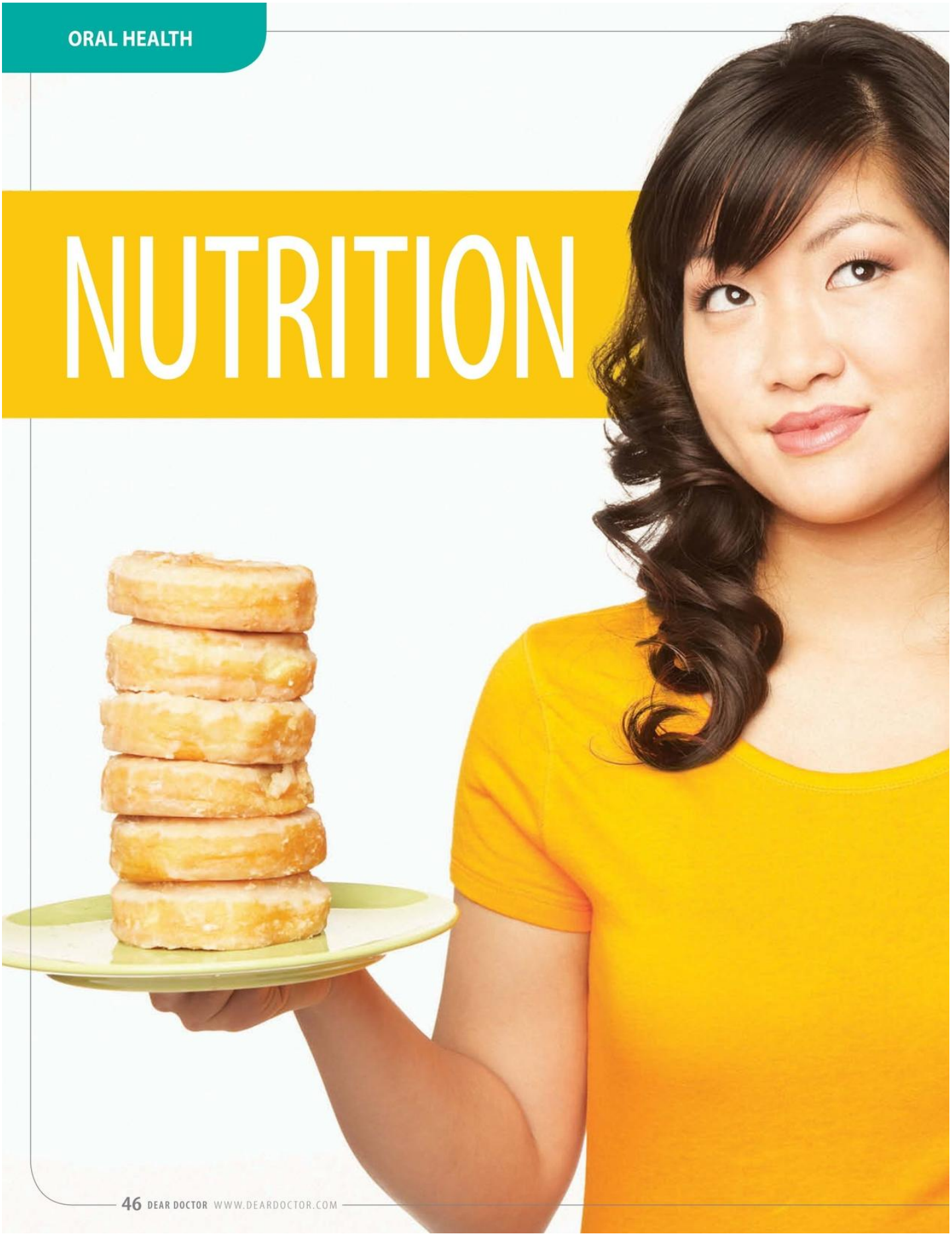
Sincerely,
Arnold S. Weisgold, DDS, FACD

ABOUT THE AUTHOR

Arnold S. Weisgold, DDS, FACD

Dr. Weisgold received his DDS from Temple University. He received certificates in Periodontics and Periodontal Prosthesis (Fixed Prosthodontics) completing post-doctoral studies at the University of Pennsylvania. He is a Clinical Professor at the University of Pennsylvania and is the Director of Postdoctoral Periodontal Prosthesis where he established the Department of Form and Function of the Masticatory System. He is also a Clinical Professor at the Medical College of Pennsylvania. Dr. Weisgold lectures both nationally and internationally on the topics of Implant Prosthodontics, Advanced Restorative Dentistry, Esthetics, Occlusion and Periodontal Prosthesis. He is consulting editor for Compendium of Continuing Education in Dentistry and The International Journal of Periodontics & Restorative Dentistry. He has published texts and papers extensively on restorative dentistry, implant prosthodontics, and occlusion.

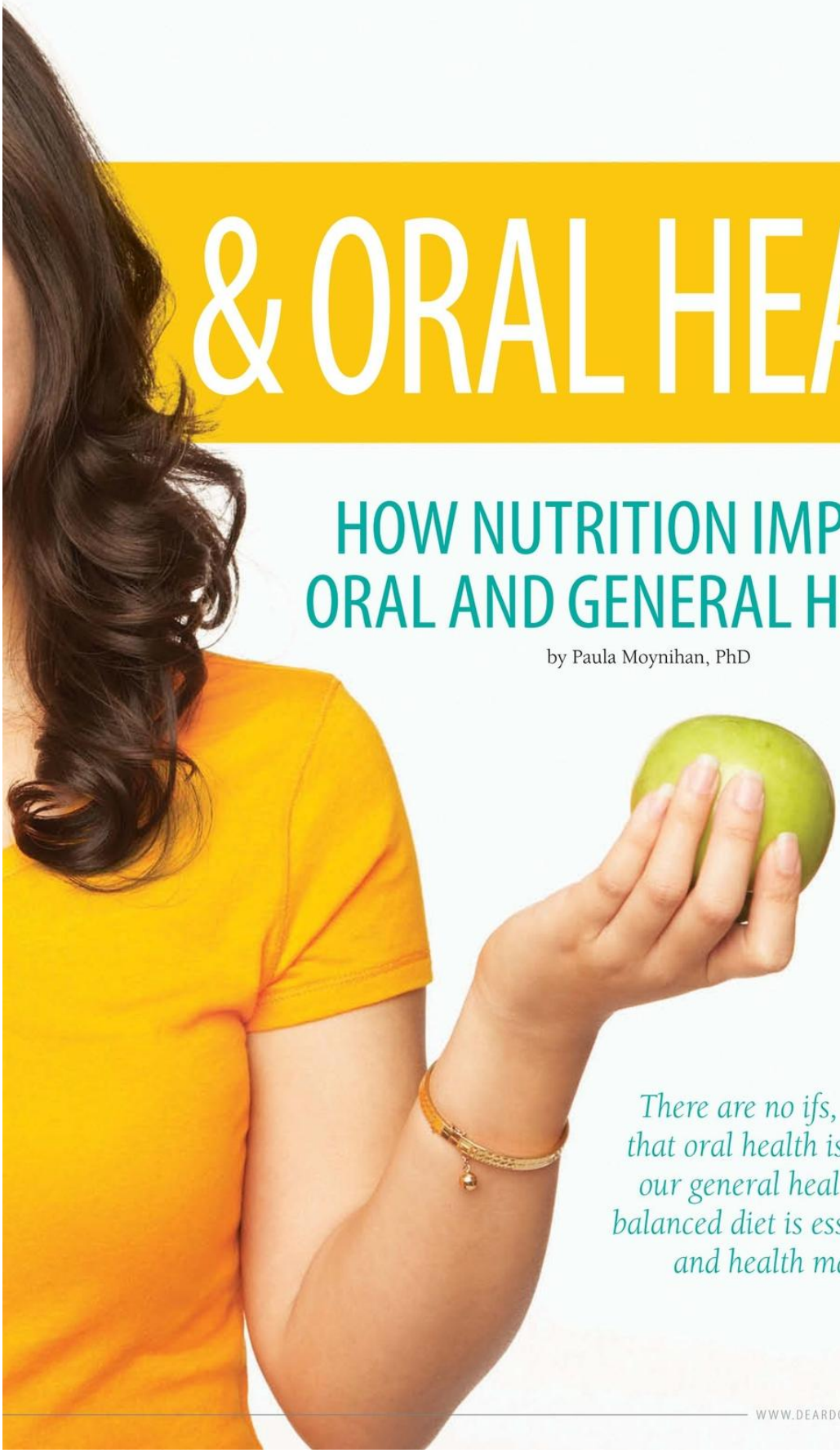
NUTRITION



& ORAL HEALTH

HOW NUTRITION IMPACTS ORAL AND GENERAL HEALTH

by Paula Moynihan, PhD



There are no ifs, ands, or buts, that oral health is a huge part of our general health. And a well balanced diet is essential to growth and health maintenance.

In Part I of this important series, we will focus on diet as it relates to dental/oral health. Be sure to look for upcoming topics in this series: The Role of Nutrition in General Health; Dental Decay; Fluorides and Healthy Teeth; Dental Erosion.

Can you imagine how many times a day a compliment is given to those with beautiful smiles? Most of the time, the compliment-giver is recognizing the beauty of a person's teeth. After all, teeth are what we show to the world when we smile. Teeth affect our self-esteem and our ability to socialize, as well as our ability to enjoy food. Not to mention, the most important factor of all, the impact teeth have on our nutrition and health.

In Part I of this series we will explore what we eat and how we eat...the variety of food in our diets... all of which contribute to the social experience and enjoyment of food. Further, we'll discover just how oral health impacts our general health and well being. A sound and nutritionally adequate diet is not only vital for general health, but also for the proper formation of teeth and maintenance of oral health.[1]

DIET, NUTRITION AND TEETH

Teeth live in an environment that is constantly changing throughout our lives, as do the teeth themselves. While they develop with strong and protective outer coatings of enamel (the hardest and most impervious structure produced in nature) teeth are not completely immune to the ravages of disease and wear.

Diet plays a major role in dental decay. It contributes to the healthy development of enamel and has a significant role in erosion caused by acids. Let's take a look at some dental diseases:

- Dental caries (decay)
- Developmental defects of enamel
- Dental erosion
- Periodontal (gum) disease

Regarding periodontal disease, diet and nutrition seem to play a relatively minor role, especially in modern industrialized societies. However, dental research tells us that dental caries (decay) rates have gone down in the last three decades. That is largely due to improved prevention, especially incorporating the use of fluoride, which we'll discuss later in this review.

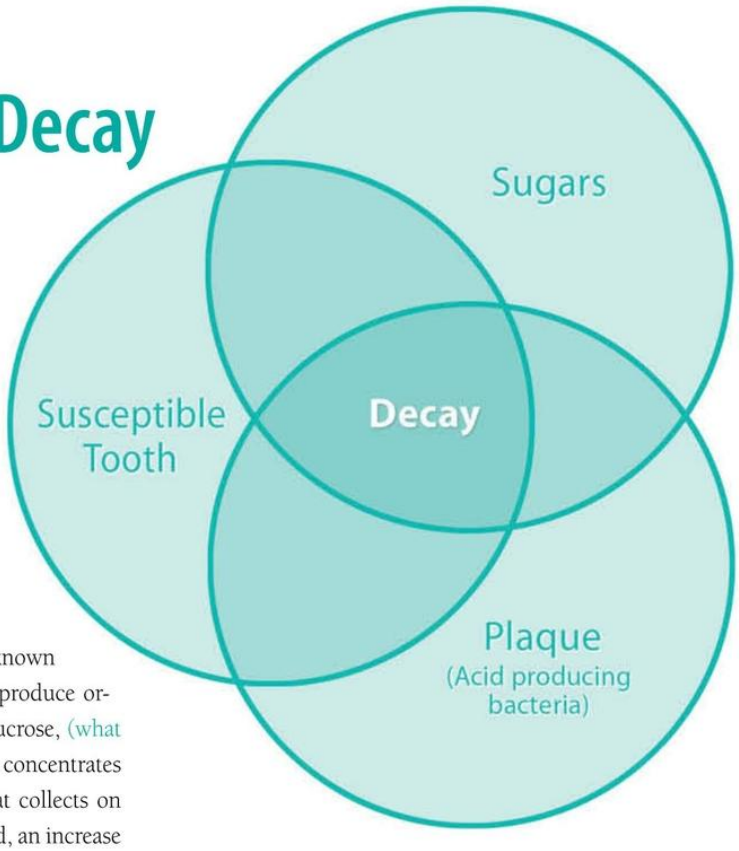
ORAL CONDITIONS CHANGE AS WE AGE

Deciduous (baby) teeth are most susceptible to decay soon after they erupt from 3-6 months of age and so are permanent (adult) teeth which begin erupting from 6-7 years of age. Although what a pregnant woman consumes is important for tooth development, what the child eats is much more important immediately following eruption of the teeth, as we will see. With people now living longer, decay rates are likely to increase in older age groups. This is key in knowing that more attention needs to be paid to diet and dental care in our later years.

[1] More in-depth recommendations of required food groups and their appropriate proportions based on weight, height, and age, can be found at the Department of Agriculture's www.MyPyramid.org.

Cause of Tooth Decay

For tooth decay to occur, bacteria utilize the sugars in your diet to produce acids which demineralize the tooth surface.



Keeping your natural teeth into later life is vitally important. Our natural teeth will enable us to enjoy food more, especially the nutritious diet of fruits, vegetables and fiber that provide us with a lifetime of general health.

Dental caries or tooth decay as it is commonly known is a disease process. Bacteria in your mouth produce organic acids from dietary sugars particularly sucrose, (what is most commonly known as sugar), which concentrates in dental plaque, that sticky whitish film that collects on surfaces of our teeth. When sugars are ingested, an increase in acidity results which causes dissolution of the enamel and dentine of the teeth leading to cavities.

Using simple sugars such as sucrose, bacteria then creates acids that can dissolve tooth enamel, leading to caries.

SUGARS: THE GOOD AND THE BAD

We'll see here that there are many forms and varieties of sugars. And in what form and frequency they are ingested is relevant for both oral and general health. Our modern diet contains a mix of sugars including sucrose (what we commonly know as sugar) glucose, lactose (milk sugar), fructose, maltose. Oral bacteria can ferment all these sugars with more or less equal facility, with the exception of lactose, milk sugar from which less acid is produced. The diet also contains glucose and high fructose corn syrups and other more complex sugars that can also be fermented.

TOTAL DIETARY SOURCES OF SUGARS

Both the World Health Organization and U.S. Drug Administration cite that "Free Sugars" should contribute no more than 10% to energy intake, approximately 50g/day.

Scientific evidence overwhelmingly tells us that sugars are the most important dietary factor in the development of dental decay. Soft drinks represent the single largest source of sugars consumption in the U.S.; in 2003, Americans drank an average of 52 gallons of soft drinks per capita. Average per capita consumption of all sugars in the U.S. was 141.5 pounds (64.3 kg) one of the highest levels in the world. In recent years, sugars intake has been implicated as a contributing factor in the worldwide epidemic of obesity in children.

Evidence does not support a role for fruit, vegetables, milk and starch rich staple foods in the development of dental decay as it does for "Free Sugars". There is no evidence that sugars in whole grain foods, whole fruits and vegetables and in starch rich staple foods like bread, rice and potatoes

are harmful to teeth. The distinction we have to make between "Other Sugars" and "Free Sugars" allows dietary guidelines for dental health to be integrated into those for general health.

Xylitol and to a lesser extent, sorbitol (which are chemically similar to sugar but do not cause decay), have been used as sugar substitutes for many years. Hence they are a useful part of decay control. We now have evidence that supports chewing xylitol-sweetened gum three to five times a day for a minimum of five minutes (after meals) stimulates saliva flow which helps protect against decay.

ORAL HYGIENE VS. LEVELS OF DECAY

Oral hygiene practices are important for oral health, particularly periodontal (gum) health, and everyone should brush twice a day with fluoride toothpaste. Brushing with fluoride toothpaste is the most important way of getting fluoride into the surfaces of teeth. Other methods of tooth cleaning such as eating fibrous foods, apples and carrots are ineffective in cleansing the tiny pits and fissures of teeth where decay begins.

FLUORIDE TO THE RESCUE

The main protective effect of fluoride is topical, i.e. applied to the tooth surfaces after eruption (e.g. by using fluoride toothpaste). When fluoride is incorporated into tooth enamel, it makes the enamel more resistant to acid dissolution. It also promotes re-calcifying the tooth surfaces where calcium has been lost due to acid attack. However, let's not ignore the relationship between sugars consumption and decay even when fluoride and other preventive measures are taken, though it's to a lesser degree. In the modern age of fluoride exposure, we know that individuals with a high level of free sugars intake (>10% energy intake) and a high frequency of sugars consumption (>3 per day) have a moderate risk factor for decay, and which will be higher for those not exposed to fluoride.

STARCHES AND DECAY

Starches constitute a very diverse food group, which varies in botanical origin. These may be highly refined and consumed in their natural state, raw or cooked (peas, bananas and beans). Some starches may be broken down by the salivary enzymes that in turn release glucose and other simple sugars to produce acid. Cooked staple starchy foods such as rice, potatoes and bread have low decay producing potential as do uncooked starches. Finely ground and heat-treated starch can cause decay but the potential is much less than sugar. When sugars are added to already starchy foods, the potential for decay increases significantly (think biscuits, cakes, breakfast cereals).

Less refined starches (e.g. whole grains) have properties that protect teeth. They require more chewing and thereby stimulate secretion of protective saliva. There is also some evidence that unrefined plant foods (e.g. whole cereal grains) contain phosphates which may be protective.

FRUITS AND DECAY

There is little evidence that fruit is an important factor in development of decay unless consumed excessively. Dried fruit, on the other hand, may be more cariogenic (decay causing) since the drying process releases free sugars. Fresh fruit appears to have low ability to promote decay and even citrus fruits have not been found to cause tooth decay (but may cause dental erosion, which we will cover in the next section). It's important for us all to know that the more fresh fruit we consume instead of free sugars is likely to have a positive impact in decreasing decay.

DIET AND DENTAL EROSION

Dental erosion is a progressive irreversible loss of tooth structure that is chemically etched (dissolved) away from the tooth surface by acid. This action does not involve bacteria. It is often associated with overzealous oral hygiene and grinding habits. Tooth erosion is caused by the over ingestion of acids (extrinsic acids) such as citric, phosphoric, ascorbic, malic, tartaric, and carbonic acids found in fruit juices, soft drinks (either carbonated or still) and some fruits if consumed frequently. Any acidic drink even if mildly acidic may initiate erosion. Intrinsic acids (those from inside the body), produce erosion following vomiting, regurgitation or reflux and can be extremely damaging to the teeth. A condition now known as GERD (gastro-esophageal reflux disease) is now a recognized cause of tooth erosion from stomach acids. One of the most potent and acidic of acids is hydrochloric acid from the stomach and it is responsible for the extensive erosion of teeth seen in conditions like bulimia and anorexia where reflux is common and constant.

Erosion is an ever-increasing problem in industrialized countries. The observed levels are thought to be largely due to increased drinking of acidic beverages - soft drinks. Brushing the teeth following consumption of an acidic product before the saliva has had a chance to buffer (or counteract) the acid, will enhance the removal of the softened enamel.

It's important for us all to know that the more fresh fruit we consume instead of free sugars is likely to have a positive impact in decreasing decay.

HERE ARE OTHER FACTORS THAT PROTECT AGAINST DECAY:

CHEESE: consuming cheese following a sugary snack virtually abolishes the increase in acidity. Cheese stimulates saliva and is rich in calcium influencing the balance of re-calcifying teeth and protecting against loss of calcium from teeth.

COW'S MILK: contains lactose which is less acid producing than other sugars and therefore does not promote decay as readily. In addition, cow's milk also contains calcium, phosphorus and casein all of which help stop decay. However the practice of bottle feeding milk at night may promote decay.

HUMAN BREAST MILK: contains 7% lactose and is lower in calcium and phosphate. It generally does not initiate much decay except in cases of very high frequency nighttime feeding and prolonged on demand feeding.

PLANT FOODS: are fibrous and protect teeth by mechanically stimulating saliva. Peanuts, hard cheeses and gum that contain sorbitol and xylitol can act the same way.

BLACK & GREEN TEAS: are particularly rich in polyphenols and flavonoids which are complex antioxidant compounds found in many plant foods. The fluoride in black tea may also protect against decay.

CHOCOLATE: there is some evidence that cocoa in an unrefined form (without added sugars) may have some anti-caries potential but processed chocolate is too high in sugars to be good for the teeth so there is little hope for chocolate lovers.

Consuming cheese following a sugary snack virtually abolishes the increase in acidity.

Looking after your teeth is important if you want them to last a lifetime! Sticking to a diet that is high in fruits and vegetables and starchy staple foods, drinking lots of water (preferably fluoridated) and limiting the intake of sugary foods and soft drinks will safeguard your dental as well as your general well being.

Recommendations to promote good oral and general health

- Eat a healthy diet and follow the recommendations of the USDA (www.mypryamid.org).
- Eat sugars in the form of fresh fruits & vegetables.
- Limit free sugar intake to a maximum equivalent of 10 teaspoons per day (a can of soda contains over 6 teaspoons!).
- Free sugars should be limited to a maximum of four times a day.
- Don't snack on sugars between meals.
- Ensure optimal fluoride level in water supplies.
- Promote adequate fluoride exposure via tooth-paste, tablets or dentist recommended application.
- Brush teeth with a fluoride toothpaste at least twice daily especially at night.
- Do not eat for at least one hour before bedtime especially foods containing free sugars because low salivary flow rates during sleep reduce the ability to neutralize acid.
- To minimize erosion limit the amount & frequency of soft drinks & juices.

ABOUT THE AUTHOR

Paula Moynihan, PHD

Dr Paula Moynihan has a degree and PhD in Nutrition and is a Registered Public Health Nutritionist and State Registered Dietitian. She has achieved the status of "Reader" in Nutrition and Oral Health at Newcastle University, England and is Director of the only World Health Organization (WHO) Collaborating Center for Nutrition and Oral Health. She was a member of the WHO Expert Consultation on 'Diet, Nutrition and the Prevention of Chronic Diseases' where she led on issues relating to oral health. Her research focuses on the relationships between diet and oral health throughout the lifecycle. In 2004, she won the Nutrition Society Silver Medal Award for 'excellence in research by a young scientist'.

Blood Pressure Medications

Side effects of blood pressure medications include gum overgrowth and dry mouth

A Consultation with Dr. Andrew Rosenblatt

Blood Pressure Medications?

From: Charles (Connecticut)

To: Consultations@deardoctor.com

Subject: Blood Pressure Medications?

Dear Doctor,
Is it true that some blood pressure medication can cause gum overgrowth?

Dear Charles,

Yes, it is true – an important class of drugs known as "calcium channel blockers" (CCBs), used for treating high blood pressure, angina and abnormal heart rhythms can cause gingival (gum) hyperplasia (overgrowth), a condition where the gum tissues grow and extend abnormally over part of the teeth. Gum overgrowth can cause pain and discomfort, as well as social embarrassment.

CCBs, which may also be used by cardiac (heart) patients who can't tolerate beta-blockers (other blood pressure drugs), work by dilating (relaxing) blood vessels, which makes it easier for the heart to pump and reduce its workload. They have their share of medical side effects, including constipation, nausea, headache, rash, edema (swelling of the legs with fluid), low blood pressure, drowsiness and dizziness. For the dental patient, in addition to gingival hyperplasia, CCBs can also cause mouth dryness.

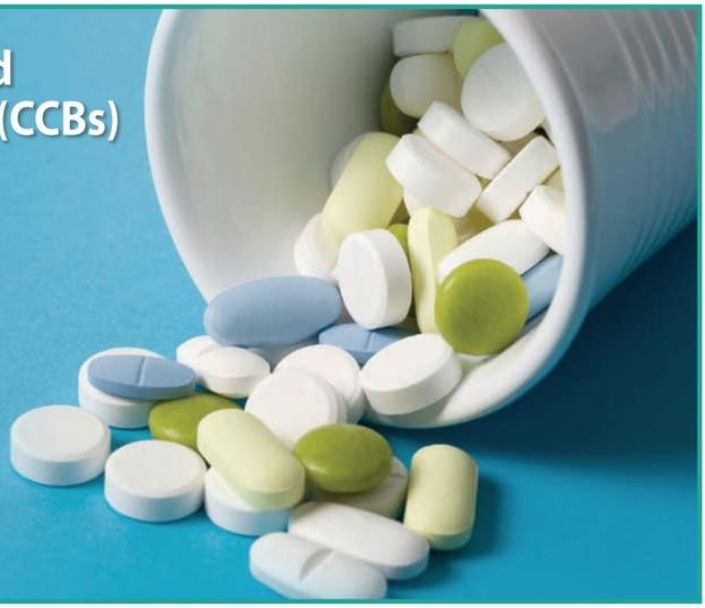
> Drugs known as "calcium channel blockers" (CCBs), used for treating high blood pressure, angina and abnormal heart rhythms can cause gingival hyperplasia also known as gum overgrowth.

Research of late has found that there is a contributing factor along with CCBs in the development of gum overgrowth: poor oral hygiene. Accumulated dental bacterial plaque is the primary cause of periodontal (gum) disease, which increases the likelihood of gum overgrowth; in like fashion, the presence of gum overgrowth makes adequate oral hygiene more difficult, increasing the risk for greater instances of periodontal disease.

A study by Dr. Robert Genco, released in 1999 in the Journal of Periodontology, suggests that frequent dental visits following initial periodontal treatment may significantly reduce gum overgrowth in patients taking Nifedipine, a commonly prescribed CCB. The study found that gingival overgrowth recurrence was eliminated in more than half of patients with a combination of initial periodontal therapy, including both non-surgical and surgical treatments, and frequent follow-up

Commonly Used Blood Pressure Medications (CCBs)

- Nisoldipine (Sular)
- Nifedipine (Adalat, Procardia)
- Nicardipine (Cardene)
- Bepridil (Vascor)
- Isradipine (Dynacirc)
- Nimodipine (Nimotop)
- Felodipine (Plendil)
- Amlodipine (Norvasc)
- Diltiazem (Cardizem)
- Verapamil (Calan, Isoptin)



dental visits (this is a significant advancement over earlier research, which concluded that gingival overgrowth could be minimized but not prevented with periodontal therapy and frequent dental visits).

> Research of late has found that there is a contributing factor along with CCBs in the development of gum overgrowth: poor oral hygiene.

For the roughly twenty to forty percent of Nifedipine patients who also suffer from gum overgrowth, the findings give some hope that they can continue to take the drug and control the gum overgrowth through meticulous attention to correct dental hygiene. It's especially important for patients who don't have the option of switching medications to control their high blood pressure.

If you are taking CCBs for high blood pressure and notice gum overgrowth, your dentist can give you detailed hygiene instructions, and may ask you to visit more often for professional cleanings. If you stop taking the drugs, your gums recede somewhat; however, this may take several months and they may not return to normal on their own. Additional treatment may be needed.

And, it's always a good idea to make sure your dentist knows which drugs you are taking for your high blood pressure and other conditions that may cause dental side effects.

Sincerely,
Andrew Rosenblatt, MD

ABOUT THE AUTHOR

Andrew Rosenblatt, MD

Dr. Andrew Rosenblatt, MD, is Program Director of the Cardiology Fellowship Training Program at California Pacific, and Director of the Echocardiography Laboratory. He attended NYU, graduating with a degree in Classics, and Albert Einstein College of Medicine. After serving his internship, residency, and chief residency at Jacobi Medical Center-Albert Einstein, in New York City, he did his Cardiology Fellowship at Pacific Presbyterian Medical Center. Dr. Rosenblatt practices cardiology with an emphasis on consultative, non-invasive, and adult congenital cardiology. In addition to directing the cardiology fellowship at CPMC, he is a Clinical Professor of Medicine at UCSF and is a volunteer physician for the San Francisco Opera.

COMFORTABLE DENTISTRY IN THE 21ST CENTURY

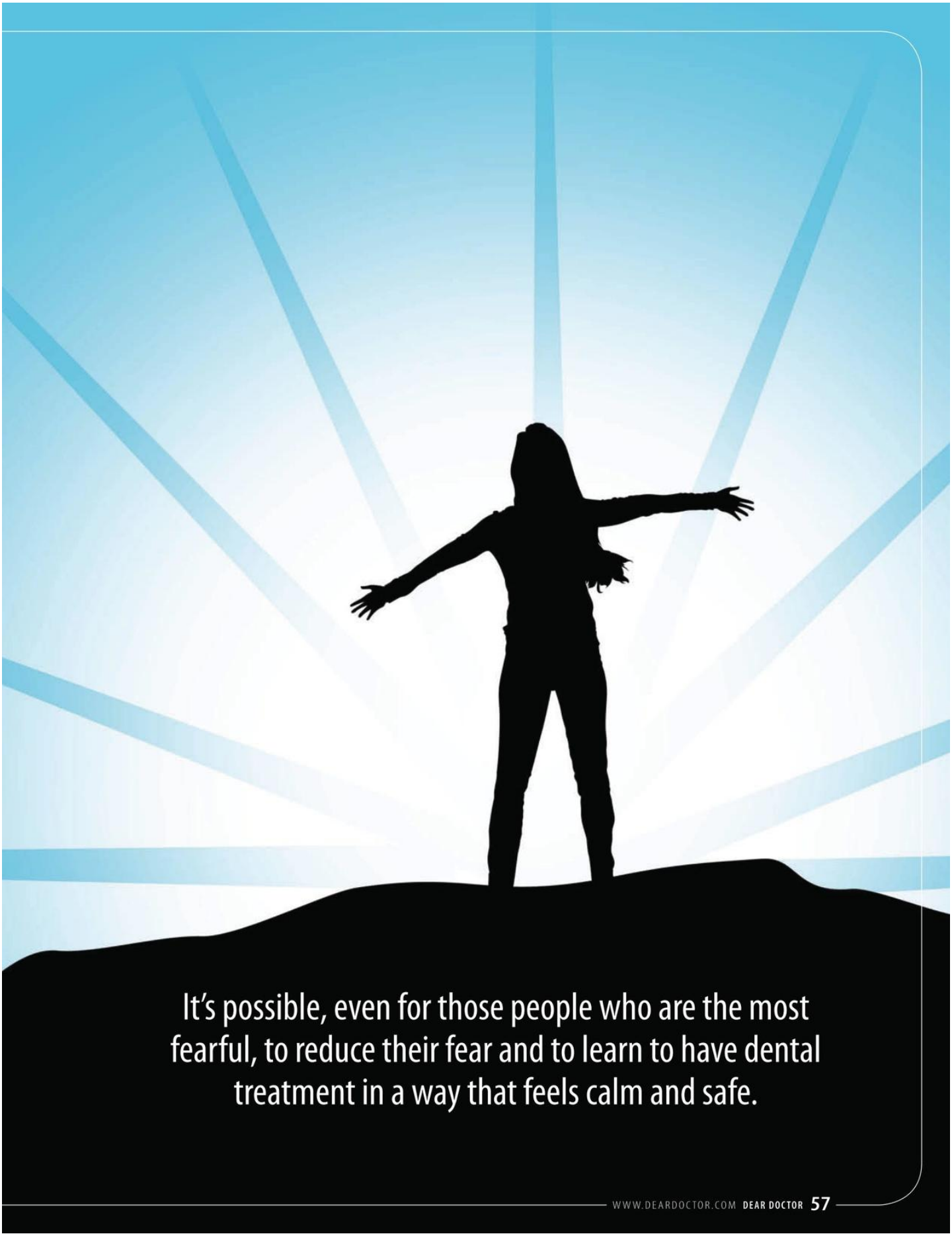
OVERCOMING DENTAL FEAR & ANXIETY

by Paul Glassman DDS, MA, MBA

Do you feel relatively calm before your dental appointment or are you a little nervous about a visit to the dental office? Do you worry about it days or weeks before the appointment? Are you someone who is actually terrified about dental treatment and worries about it all the time? Do even those things that are supposed to make visits more comfortable just seem to increase the apprehension or feeling of anxiety and being out of control– like anti-anxiety medication, nitrous oxide (laughing gas) or local anesthesia - numbing the treatment area (injections, needles, shots)? Whichever end of this spectrum you might be on, it may be helpful to know that you are not alone.

Actually, having a little or even a lot of nervousness about dental visits is common. Some studies have concluded that up to 75% of people surveyed have at least a little fear about dental visits. In addition it appears that 10%-15% of people have a great deal of fear – so much so, that it prevents them from having any dental treatment at all. There are people who have frequent dreams about dental treatment; some will only eat soft foods because they are afraid that they might chip a tooth and then need dental treatment. As a consequence these individuals who put off having dental treatment suffer for years with toothaches, infections and poor appearance.

While dental fear can result in stress and avoidance of care, it can also have more wide-reaching consequences. For some it affects their whole identity and sense of self worth. They may see other people who don't seem to have the same reactions to dental treatment and begin to feel that something is wrong with them. "Why can't I do this thing that other people seem to do so easily?" In fact, untreated oral conditions may result in even worse general health complications.


It's possible, even for those people who are the most fearful, to reduce their fear and to learn to have dental treatment in a way that feels calm and safe.

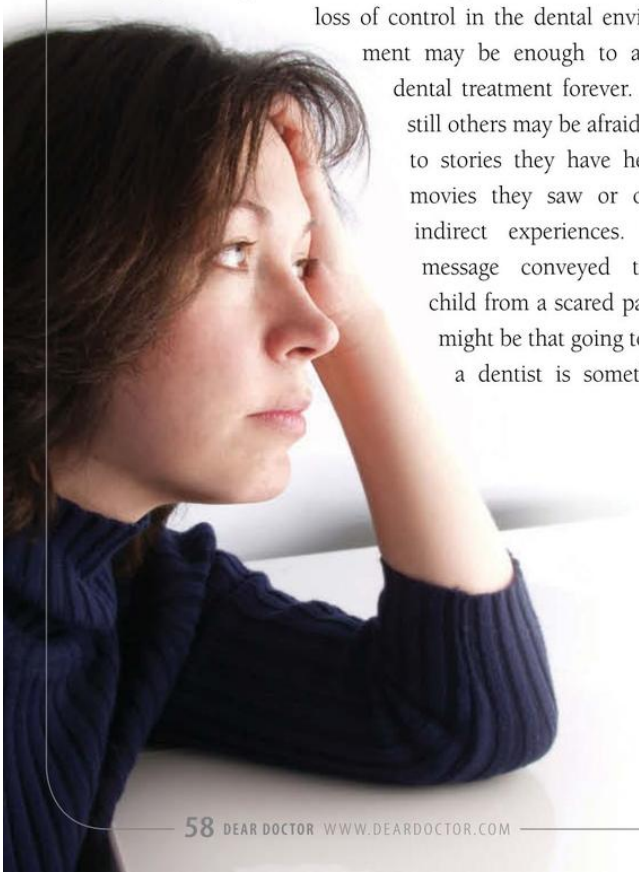
In the end, it's in everyone's interest to find ways to overcome dental fear and make dental treatment a calm and safe experience.

GOOD NEWS

Now for the good news! First, it's helpful for many people who are fearful to know that they are not alone. It's also important to realize that help is available. Actually, experience has shown that even people who have extreme fear about dental procedures can get over their fears and learn to have dental treatment in a manner that feels calm and safe. If you have been afraid for a long time you may have difficulty believing this, but even people with long standing fear can be helped. Before we describe how it's possible to get over dental fear, let's first review some things about what makes people fearful.

HOW DO PEOPLE BECOME AFRAID OF DENTAL VISITS?

No one is born being afraid of dental visits. So everyone who is afraid has learned somewhere that dental treatment is something to fear. Some people learn this because they've had previous bad dental experiences. The sense of loss of control in the dental environment may be enough to avoid dental treatment forever. And still others may be afraid due to stories they have heard, movies they saw or other indirect experiences. The message conveyed to a child from a scared parent might be that going to see a dentist is something to be afraid of. Such messages may cause individuals to avoid treatment and not have any opportunity to learn that things can be different.



Fear and anxiety can also be reinforced inadvertently. Think about it this way; try to remember a time when you were really afraid of something, do you remember how your body felt? Was your heart beating quickly, palms sweaty, stomach in a knot? Those and other symptoms of being afraid are all unpleasant feelings. So, if someone who is already afraid forces themselves to go have dental treatment and re-experiences those same bad feelings during the appointment, then what they will remember afterward is those same unpleasant feelings. It doesn't matter how friendly the dentist is or how pain free and pleasant the treatment is. What you remember is the feeling of being afraid, thus reinforcing the idea that there is something to be afraid of.

In fact, dental fear begins at the subconscious level. People have what we call an "automatic fear response." Jane says "I feel like something just takes over and I begin to sweat and my stomach tightens up. I don't really have any control over it." Since this automatic fear response is subconscious, you can't make it go away using logic or reason. Telling Jane that "there is nothing to be afraid of" won't help. In fact it might make things worse because it could sound like you are saying there is something wrong with her. So, how do we change this pattern of fear and reinforcement? Let's find out.

GETTING TO CALM AND SAFE

As we said earlier, it's possible, even for those people who are the most fearful, to reduce their fear and to learn to have dental treatment in a way that feels calm and safe. The basic idea is really very simple. In order to counteract past bad experiences you need to have new positive experiences which lead to the development of improved feelings and attitudes. The more bad experiences you have had or the longer they have gone on, the more good experiences you need before you will have different reactions to the same situation. Dental health professionals know that your mouth is a very personal place and trust is a big part of allowing us to partner in your care.

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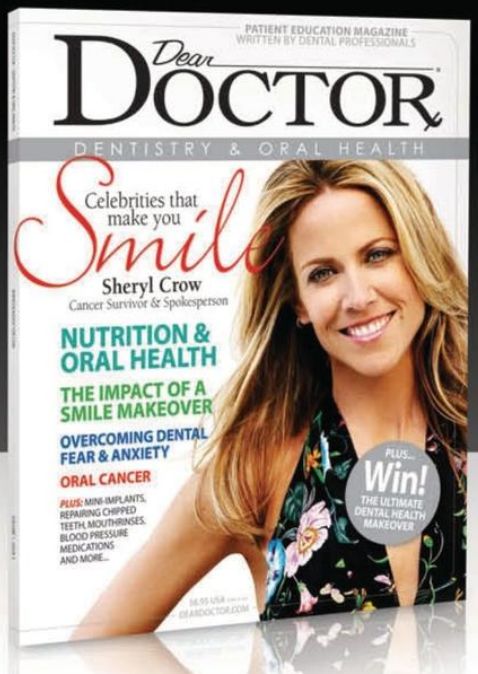

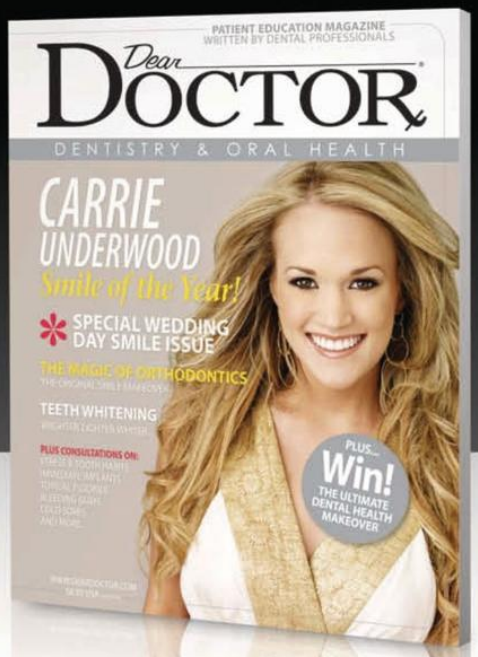

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Patient Profile

Jane is 33 years old. She hasn't had any dental treatment in 10 years. She is worried that she has dental problems and should have them taken care of. She has even made some dental appointments in the past decade. She cancelled or just didn't show up to most of them. Twice she did go and have an examination, but didn't go back to have any treatment performed. She changes the channel on the TV if a show has any dental treatment in it and she won't go to movies that show anything about dentistry. Her smile embarrasses her and has led to poor self-esteem. Jane feels bad about herself. She wants to change both the way she feels and reacts to dental treatment but she doesn't know how.

If you are very fearful, how do you have a "good experience" with dental care?

> Tell your dentist you are afraid, even when setting up an appointment and make sure the dentist is prepared to listen. If you can't talk about it you can't get over it.

I am very careful to listen to what Jane says and try to understand her "story". I ask Jane to tell me about her fear of dental treatment. "I'm glad you asked" she says. "I always felt that dentists didn't really want to know".

> The dentist must listen carefully to you in an accepting and non-judgmental way.

I avoid telling Jane that things will be different, that there is nothing to worry about, or that there is anything wrong with her being afraid. I also avoid any explanations about dental disease or dental procedures until I'm sure that Jane knows that I understand her fear and am committed to working with her to help her overcome it. I know that the best way for me to convey that I care is to listen, not to provide explanations. Jane should feel confident that she is not being judged.

Of course, some people are better at this than others. If you are afraid, find a dentist who listens to you and who cares about working with you to get over your fear. Some dentists have made themselves quite expert in this area. If you start your work with a psychologist, make a transition from working with the psychologist to working with a dentist who understands and can follow the principles involved in reducing dental fear.

> When working to reduce fear, only do things that you can do with mild or no anxiety.

I reassure Jane that she is in control of the situation at all times. I need Jane to tell me exactly what she is afraid of since it's different for everyone. It's critical that I understand what brings on her particular fear reactions. We will start by having Jane try to do those things that she feels she can do fairly easily. The idea is for her to have the goal of being able to leave each visit saying "that was OK; I could certainly do that again if I needed to."

> Set up an agreement so you can take whatever time you need to get over your fear and not be rushed to do things you are not ready to do.

Let's stop to emphasize the last point, since this can be a significant shift in expectations. In order to help someone get over their fear of dental procedures, the goal for each visit is for you to have a good experience rather than getting a particular procedure finished. Remember, if you push yourself to do something you are really afraid of, you will remember how unpleasant your fear is and reinforce the fear rather than diminish it.

> If you are afraid, work with your dentist and make a specific plan to reduce your fear. Don't just concentrate on "fixing your teeth!"

It's critical that both the dentist and patient agree that becoming comfortable with dental procedures is something that they are going to work on. Understand that you and your dentist must consider your internal anxiety feelings by working at a pace where you will be more comfortable and trusting. Set up an agreement with your dentist to talk about the time and fees associated with treatment so you can comfortably overcome your fear and not be rushed to do things you are not ready to do. This may result in a procedure taking a little longer than usual to complete or spreading out appointments over the course of time.

You can comfortably overcome your fear

Imagine a relationship with your dentist where you feel you have the time you need to go at your own pace, the listening relationship that you need to feel safe, and the sense of control you need to reduce any automatic anxiety responses. It might take some faith in the beginning to realize that this is possible, but you really do have the opportunity to have a "Lifetime of Dental Health."

ABOUT THE AUTHOR

Paul Glassman DDS, MA, MBA

Dr. Paul Glassman is Professor and Associate Dean for Information & Educational Technology; Director of the Advanced Education Program in General Dentistry at the University of the Pacific, Arthur A. Dugoni, School of Dentistry in San Francisco. He is Past President of the Special Care Dentistry Association. He is Co-Director of the Pacific Center for Special Care at Pacific and Co-Director of the California Statewide Task Force on Oral Health for People with Special Needs. Dr. Glassman has had many years of dental practice experience treating complex patients and has published and lectured extensively in the areas of Hospital Dentistry, Dentistry for Patients with Special Needs, Dentistry for Individuals with Medical Disabilities, Dentistry for Patients with Dental Fear, and Geriatric Dentistry.

Mouthrinses

They do work – if you match the right mouthrinse to your dental need.

A Consultation with Gwen Essex, RDH, MS

Mouthrinses?

From: Matt (Vermont)

To: Consultations@deardoctor.com

Subject: Mouthrinses?

Dear Doctor,
I often walk through the drugstore and see shelves loaded with so many different kinds of mouthwashes and wondered – do any of these really work?

Dear Matt,

When considering whether or not a mouthrinse "works" it is important to first consider what you hope to accomplish by using it. There are a staggering number of mouthrinses available; in a broad sense it is useful to classify mouthrinses as either therapeutic or cosmetic.

Cosmetic rinses may impart a pleasant taste or mentholated smell, but whether they "work" or not depends only on if you enjoy the experience. The effects of cosmetic rinses are temporary; they do not contribute to improving oral health. Having said that, it is important to acknowledge that just because something is purely cosmetic does not mean that it isn't of value. There is certainly nothing wrong with masking unpleasant breath as long as that is all you expect it to do.

You can be assured that using the right mouthrinse can make a positive impact on your dental health.

Therapeutic mouthrinses are those that do improve your oral health in some way. These can be classified as anti-cariogenic (preventing decay), or anti-bacterial.

Let's first consider the over the counter, (OTC) anti-cariogenic mouthrinses available for purchase at the drugstore. By and large these are fluoride rinses that provide .05% sodium fluoride. When considering the effectiveness of mouthrinses these sodium fluoride rinses are super stars. There are many research studies that have shown that by consistently using a sodium fluoride rinse in combination with good oral hygiene the likelihood of developing new cavities is significantly reduced. There are few people (over the age of six) who would not receive some benefit from the daily use of a fluoride rinse.

The best source of information tailored specifically for you and your mouth is your dentist and dental hygienist.

Popularly known non-prescription (OTC) anti-bacterial mouthrinses contain a variety of active ingredients including triclosan, sanguinaria extract, zinc, or essential oils such as menthol and others. Each of these ingredients does help to reduce the bacteria in plaque to some degree, which can lead to the reduction of gingivitis (inflammation of the gums) and bad breath when used in combination with brushing and flossing.

Chlorhexidine, a prescription only mouthrinse, is the ingredient that has been most widely used and studied. It is effective for the control of both gingivitis and tooth decay. Chlorhexidine prevents bacteria from sticking to the teeth and therefore plaque formation. It has been used for decades as a post-oral surgery rinse, or when it is otherwise not possible to carry out effective personal plaque control. Chlorhexidine does have a tendency to stain teeth in some people, although it is removable by ultrasonic scaling and/or polishing.

More recently chlorhexidine mouthrinses have been used in combination with (OTC) fluoride rinses to reduce high rates of decay.

Hopefully this helps sort through the numerous bottles of attractive colored liquids called mouthrinses at your drug store. However, the best source of information tailored specifically for you and your mouth is your dentist and dental hygienist. At your next visit ask if you would benefit from the addition of a mouthrinse to your oral hygiene routine.

Sincerely,
Gwen Essex, RDH, MS

ABOUT THE AUTHOR

Gwen Essex, RDH, MS

Ms. Essex is an Associate Clinical Professor at the UCSF School of Dentistry. While teaching is her main focus, she does maintain a practice within the Faculty Practice at UCSF, and is currently completing her dissertation for an EdD in learning and instruction.

Dear Doctor is proud to recognize the invaluable contribution of dental hygienists to the profession and practice of dentistry.

We are pleased to recognize this contribution in our "Dental Hygiene" department. We welcome articles and consultations in this area from dental hygienists to further our mission – educating our patients. Patients who have questions about dental hygiene and oral health are invited to submit questions to *Dear Doctor.* Please email us at questions@deardoctor.com or submit your questions via our website at deardoctor.com.

Early Orthodontic Evaluation

An early childhood orthodontic evaluation can yield excellent results

A Consultation with Dr. Rodney S. Lee

Early Orthodontic Evaluation?

From: Pam (California)

To: Consultations@deardoctor.com

Subject: Early Orthodontic Evaluation?

Dear Doctor,
My son is only 7 years old and I can already see that his teeth are coming in very crooked. Is he too young for braces?

Dear Pam,

Even if he is too young for braces, it is not too early for an orthodontic evaluation. Some children, as early as 5 or 6 years of age, may benefit from an evaluation.

This evaluation is best performed by an orthodontist; orthodontics is a specialty of dentistry concerned with the study and treatment of malocclusion (literally, "bad bite") and includes the study of facial growth and development. An orthodontist can determine whether preventative or interceptive treatment may be indicated.

Malocclusions (bad bites) often become noticeable between the ages of 6 and 12, as the child's permanent (adult) teeth erupt. Children may experience crowding of teeth, too much space between teeth, protruding teeth, extra or missing teeth and sometimes jaw growth problems. Other malocclusions are acquired - such as those caused by thumb or finger-sucking, mouth breathing, dental disease, abnormal swallowing, poor dental hygiene, the early or late loss of baby teeth – and develop over time.

Orthodontic treatment often begins between the ages of 7 and 14. Treatment that begins while a child is growing, often referred to as "interceptive orthodontics", helps produce optimal results. To achieve optimal treatment, children should have an orthodontic evaluation no later than age 7. By then, they have a mix of primary (baby) teeth and permanent (adult) teeth. Your child's dentist can spot problems with emerging teeth and jaw growth early on, while the primary teeth are present. That's why regular dental examinations are important.

Orthodontic treatment that begins while a child is growing, often referred to as "interceptive orthodontics," helps produce optimal results.

The AAO recommends that children get a check-up with an orthodontist by age 7.

Orthodontists are trained to spot subtle problems with jaw growth and emerging teeth while some baby teeth are still present. Early detection of orthodontic problems in young children may make it easier to correct those problems in the long run. Waiting until all of the permanent (adult) teeth have come in, or until facial growth is nearly complete, may make correction of some problems more difficult and even impossible. For these reasons, the AAO (American Association of Orthodontists) recommends that all children get a check-up with an orthodontist no later than age 7.

So you're right on the money! Go and see your neighborhood dentist for the name of an orthodontist in your community.

Sincerely,
Rodney S. Lee, DDS

Questions to ask your dentist

- Is there enough space for my child's permanent teeth to come in without creating crowded teeth?
- Is there anything I can do to prevent my child from needing orthodontics?

ABOUT THE AUTHOR

Rodney S. Lee, DDS
Dr. Rodney S. Lee is a graduate of the University of California, San Francisco, School of Dentistry. He also received his Certificate in Orthodontics at UCSF. Currently, Dr. Lee is a Clinical Professor in the Division of Orthodontics at UCSF. He maintains a private practice and is a Diplomate of the American Board of Orthodontics. He lectures extensively on orthodontics and multidisciplinary dentistry.

Cracked Tooth Syndrome

Early detection and treatment may save a cracked tooth

A Consultation with Dr. Louis Rossman

Cracked Tooth Syndrome?

From: Debbie (Florida)

To: Consultations@deardoctor.com

Subject: Cracked Tooth Syndrome?

Dear Doctor,
I can't believe it! I've broken not one, but two teeth over a period of a few months – and, boy was it painful. My dentist told me I had "cracked tooth syndrome," which I'd never heard of before. Could you tell me more?

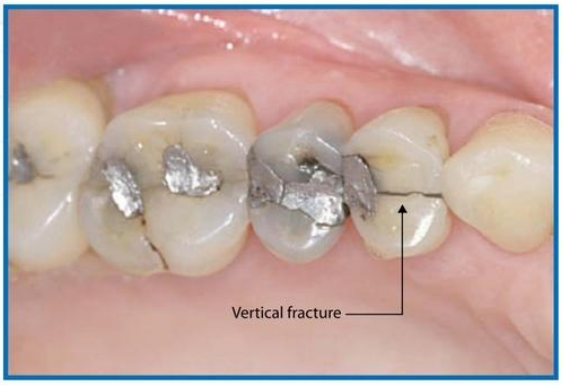

Figure 1: An example of a vertical fracture of a bicuspid as a result of a patient chewing on a hard object.

Dear Debbie,

Cracked tooth syndrome definitely exists: it's a real problem that's often quite difficult to diagnose. The term "syndrome" refers to the association of several clinical signs (discovered by a doctor) and symptoms (reported by a patient), which often occur together. Because the signs and symptoms vary in cracked tooth syndrome, diagnosis - actually pinpointing the problem tooth (or teeth) – can be difficult.

The entire condition can be summed up in three successive phases: craze lines, cracks and fractures. Craze lines are miniscule cracks in just the outer enamel of a tooth. Although not an immediate danger to the tooth, craze lines can lead to true cracks in the enamel that actually penetrate into the dentin (the body of the tooth).

This in turn can lead to a very serious condition called a fracture where the crack may extend deep into the root of the tooth. Generally speaking, the deeper the crack extends, the worse the symptoms. The most serious condition is a fracture that exposes the pulp, the actual living tissue within the tooth – this must be treated as soon as possible if there is to be any chance of saving the tooth.

Early diagnosis is critical – if your dentist can detect a crack while it's small, treatment can usually save a tooth.

Cracked tooth syndrome affects individual teeth [Figure 1]. Just because you have cracked two teeth does not indicate that others will be affected. Teeth are fracturing today in record numbers and are now reputed to be the third leading cause of tooth loss. This increase is due to several factors including longer life spans (older, brittle teeth tend to crack more) and higher stress levels that may lead to increased teeth clenching and grinding.

Early diagnosis is critical – if your dentist can detect a crack while it's small, treatment can usually save a tooth.

Cracks or impending fractures in teeth are usually too small to be seen on radiographs (x-rays), so dentists must use other methods: a small sharp instrument known as an explorer to feel for cracks in a tooth; biting on a bite stick or rubber pad to replicate symptoms; and fiber-optic lighting with special dye stains.

Sometimes crack detection requires high magnification instruments. Most endodontists (root canal specialists) use microscopes as a routine part of their practice and are very good at detecting cracks and fractures. Endodontists can also assess whether a crack has involved the living tissue within a tooth – the pulp which contains the nerve of the tooth, and whether root canal treatment is needed to relieve the pain and symptoms.

The earlier a crack is detected and the more superficial it is, the simpler it will be to repair it.

When it comes to symptoms, here's where it becomes more complicated; symptoms will vary depending on the location of the crack in a tooth and what other structures are involved. If a crack involves the outside of the tooth (periodontal structures, gums, periodontal ligament and bone) a different set of symptoms will occur than if a crack involves the inside of the tooth (the pulp chamber containing the nerve).

A sharp, intense pain of short duration during chewing and upon release of food usually indicates a crack in a "vital" tooth, in which the nerve has not been affected. If a crack reaches the nerve it will become an avenue for infection. The pulp tissue housing the nerve then becomes inflamed and sensitive to temperature changes.

Cracks in teeth without a living pulp give vague symptoms and the origin of the pain is often difficult to locate until the tissues around the teeth are affected. If a crack involves the periodontal structures (the gum, periodontal ligament and bone), symptoms may include tenderness around the tooth, easily identifying what tooth is hurting.

When a crack increases and becomes a true fracture, the symptoms intensify. If located in the crown of the tooth, a piece of the tooth may cleave off and be quite sensitive to temperature change and sweet foods. If the crack is located in the root, the patient will experience pain of increasing intensity and feel it particularly if infection sets in.

So, the earlier a crack is detected and the more superficial it is, the simpler it will be to repair it. Treatment is always based on a proper diagnosis. It could be as simple as replacing the lost tooth structure, or covering the crack or fracture with appropriate restorative materials. If the nerve is involved, it might mean root canal treatment and protection of the tooth with a crown (cap). Another suggestion your dentist may have is for you to consider wearing an occlusal (bite) guard to protect your teeth from clenching and/or grinding (bruxism) which may very well be occurring subconsciously. At worst, if the tooth is not salvageable it will mean tooth loss and replacement.

This is an overview of a complex problem. I hope it helps. If you have any further similar symptoms see your dentist or endodontist as soon as possible. It may mean saving a tooth.

Sincerely,
Louis Rossman, DMD

ABOUT THE AUTHOR

Louis E. Rossman, DMD, FACD

Dr. Louis Rossman is a Diplomate of the American Board of Endodontics, a Clinical Professor of Endodontics at The University of Pennsylvania School of Dental Medicine and a Fellow in the American College of Dentists. Dr. Rossman is the President-Elect of the American Association of Endodontists. He is a past President and Director of the American Board of Endodontics, Chairman Emeritus of the I.B. Bender Division of Endodontics at Albert Einstein Medical Center in Philadelphia and serves as an Overseer to the School of Dental Medicine at the University of Pennsylvania. He has lectured extensively in the United States, Europe, the Middle East and the Far East. He has published numerous articles and has written chapters in several textbooks. He maintains a full time clinical practice of Endodontics.

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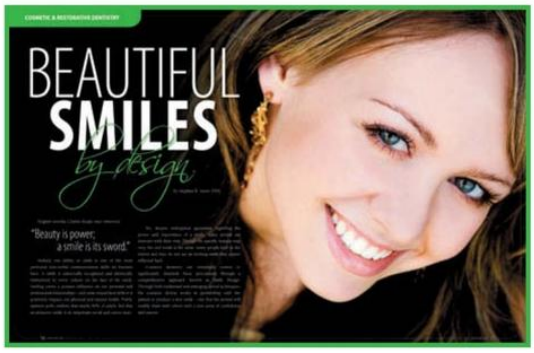

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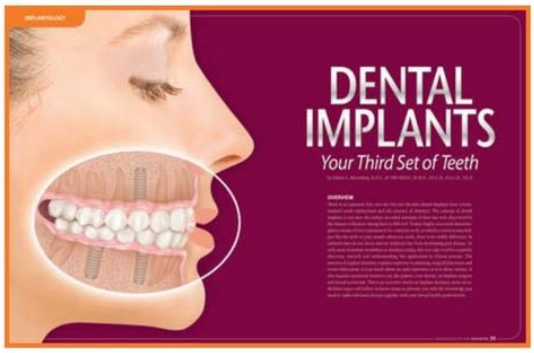

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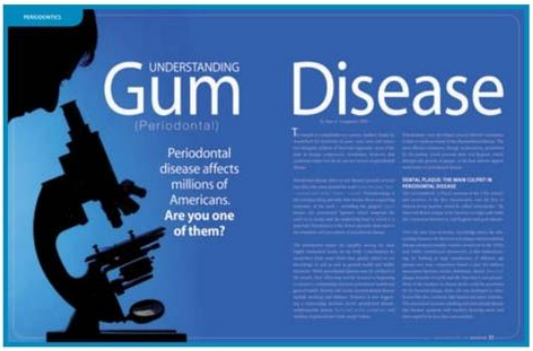

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