

**The Complete  
Guide to Natural  
Toothache  
Remedies and  
Re-mineralization**



*Scott Rauvers*

*Fifth Edition*

**Actions to Take Immediately  
if you Have a Toothache**

**PAGE 171**

**Traditional Chinese  
Medicine Toothache Relief  
Methods**

**PAGE 179**



This book is dedicated to those who seek unnecessary root canals, so they may avoid unnecessary pain and expense in the future

Published by the Institute for Solar Studies

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## Sixth Revision Winter 2020

*The latest 2020 revision of this edition includes the latest successful published studies on natural periodontal and gingivitis treatments, all organized into convenient easy to find chapters*

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## A SPECIAL THANK YOU

Thank you the reader for being a part of those positively transforming the world of dentistry. This book is dedicated to those seeking how to tap into the power of nutritional wisdom to create healthy teeth and gums.

The sole purpose of this book is to empower those seeking alternatives to the dentist's drill and to help create a feeling of self-confidence and comfort, knowing you hold the power to prevent cavities, re-mineralize your teeth and create lasting strong and healthy gums.

Use the wisdom in this book to: Avoid Unnecessary Root Canals, Learn to re-grow New Layers of Dentin on Exposed Enamel, Reverse Gum Disease, Heal Tooth Abscesses, Re-store your Hormones to Healthy Levels and visit a dentist only when absolutely necessary. This book can save you thousands of dollars and avoid wasted time on unnecessary dental procedures.

Scott is also the founder of The Institute For Solar Studies On Behavior and Human Health, which studies noninvasive methods of healing, giving people alternatives to painful and sometimes unnecessary surgery. Scott's latest book released in the Spring of 2015 appropriately titled: The Complete Guide to Natural Toothache Remedies and Re-mineralization, gives readers painless alternatives to root canals, herbal methods to relieve toothache and herbal remedies and mouth washes for sore, receding or

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infected gums. In his latest book Scott includes his own experiences of how these non-invasive methods have helped him and the many readers of his website avoid visiting the dentist altogether. This book is a golden gem if you live or spend time in locations you don't have access to a dentist or want to visit them unless absolutely necessary.



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The Complete Guide to Natural Toothache  
Remedies and Re-mineralization

*From the author*

I have not needed to visit a dentist for the past 10 years. I share all the very best tips and information anyone needs to avoid unnecessary root canals and the know-how of how to reverse cavities naturally. This book includes full scientific references of the most successful methods that reverse cavities, heal gum disease and the best methods to maintain excellent oral health.



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***Note about the extracts and essential oils mentioned in this book -***

**These are potent extracts. They must always be diluted (*usually in water*) before use.**



## Introduction

**H**aven't you ever wished you could have all the very best Ayurvedic, European and Traditional Chinese herbal remedies and scientifically proven tooth and gum healing remedies all in a convenient book?

You are holding in your hands the result of 5+ years of research and writing, the best natural remedies for healing toothache, gum disease and tooth abscesses. This dream is now a reality. You won't find any other book that covers such a broad range of healing methods including herbal mouth rinses and proven techniques to keep your teeth and gums free of pain and decay.

Best of all you no longer have to believe what your authoritarian dentist tells you. Unlike some books that fail to cite references backing up their claims, this book lists full references and the original scientifically published papers behind each claim made, allowing you, the reader to look up and confirm the validity of the information in this book for yourself.

This book lists some of the best herbal alternatives to Chlorhexidine you will find anywhere. Use the herbs in this book to control halitosis, dental cavities, bleeding gums and mouth ulcers. It is the sole aim of this text to show that plant extracts or phytochemicals that reduce the development of dental plaque and associated bio-films can lead to better dental health. By keeping this book in your self-health library you will always have the necessary knowledge and information at your fingertips to use the right plant extract(s) necessary for inhibiting the growth of oral pathogens, thus greatly reducing your chance of developing unnecessary cavities.

### **Why Good Dental Hygiene Contributes to Good Health**

Many substances that exhibit potent lifespan extension effects are also powerful cavity prevention substances. For example,

below is a short list of the substances covered in this book that help prevent cavities as well as extend lifespan.

**Black Tea Extract** - Boosts Superoxide Dismutase Levels (*Peng C. Dec 2009*). Black Tea and Grape Seed are SIRT1 activators. Black Tea contains the powerful anti-aging substance Thioflavin T, which is a potent inhibitor of amyloids that cause Alzheimer's (*Grelle G et al. Dec 2011*).

**Thioflavin T** - Has been shown to extend lifespan up to 78%spanning three strains of *Caenorhabditis* species. This is due to the amyloid dye. (*Amyloid-binding compounds maintain protein homeostasis during ageing and extend lifespan. Alavez S et al. Apr 2011*), (*Regulation of Aging and Age-Related Disease by DAF-16 and Heat-Shock Factor Aolin Hsu et al. May 2003*), (*Article - A chemical that stains Alzheimer's-associated proteins may help cells to cope with toxic trash. Ewen Callaway. Nature Mar 2011*).

**Resveratrol and Black Tea Polyphenol Combination** - Synergistically Suppress Mouse Skin Tumors. Jasmine George, et al. Aug 2011). Resveratrol, found in abundance in red wine, extends lifespan. (*Lifespan and healthspan extension by resveratrol. Bhullar KS and Hubbard BP. June 2015*).

**Peptides** - Used in cavity Vaccines, extend lifespan (*A deuterohemin peptide extends lifespan and increases stress resistance in Caenorhabditis elegans. Guan S et al. Jul 2010*). (*Drosophila insulin-like peptide dilp1 increases lifespan and glucagon-like Akh expression epistatic to dilp2. Post S et al. Feb 2019*), (*Dental Caries Vaccine. A Possible Option? Shanmugam KT et al. pr 2013*).

**Dark Chocolate to Help Prevent Diabetics**  
A research study suggested that daily consumption of flavanols from dark chocolate may act as a preventive tool for the nutritional management of people with diabetes.

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However, the study recommended caution as commercial cocoa products or chocolates contain low amounts of flavanols and may be rich in sugar and calories, which may aggravate glycaemic control in patients with diabetes (*Effects of Cocoa Antioxidants in Type 2 Diabetes Mellitus Sonia Ramos, et al. Oct 2017*).

### **How Mercury Damages the Body**

There are many people who have concerns about having mercury used as a part of their fillings. The mercury used in dental fillings is composed of dental amalgam.

### **What is Dental Amalgam?**

Dental amalgam is composed of a 50/50 mixture of liquid mercury which is mixed with a powdered metal alloy of silver, copper and tin. When it is mixed, it starts to form a pliable putty-like substance that will eventually harden.

In December 2010, the U.S. Food and Drug Administration warned against the use of using amalgam in vulnerable populations (*the very old, very young and the pregnant*). Pediatric Neurologist Dr. Suresh Kotagal testified at the FDA hearing "*there is no place for mercury in children.*" (2) (1)

### **Developed Countries that have Banned the Use of Mercury Fillings**

The European Union recently passed a resolution for all nations under the European Union to "start restricting or prohibiting the use of amalgams as dental fillings." (2) (2a)

In 1987 the Public Health Office of Germany recommended against using amalgam in pregnant women, children and people with kidney disease. On July 1st, 1995 Sweden ceased allowing amalgam to be used in patients under the age of twenty and banned it altogether in 1997.

In 1996, the Canadian Department of Health directed its dentists to cease using amalgam fillings altogether in children, pregnant women and people with impaired kidney function(3).

Early exposure to even low doses of mercury in women who are pregnant and breastfeeding have shown it causes an increased risk in having children with a lower intelligence (4). This is because amalgam crosses the placenta and accumulates in unborn babies.

### **Welcome to the new Paradigm of Oral Healing**

Dental cavities affect between 60 and 90% of children in developing countries (*Petersen PE. The World Oral Health Report 2003: Continuous improvement of oral health in the 21st century- -the approach of the WHO Global Oral Health Programme. Community Dent Oral Epidemiol. 2003;31 (Suppl 1):3–23*). Poor oral health can also contribute to rheumatoid arthritis and osteoporosis (*Rautemaa R, Lauhio A, Cullinan MP, Seymour GJ. Oral infections and systemic disease—an emerging problem in medicine. Clinical Microbiology and Infection. 2007;13(11):1041–1047*).

In developing countries, treating dental diseases is an expensive process. For example cavity treatment costs an average of \$3,513 (U.S. Dollars) per 1,000 children. In many cases this cost is much more than the total health care budget for children living in low-income countries.

### **The Emerging Acceptance of using Natural Products for Dental Health**

Applying natural products such as herbal extracts and the like for controlling cavities and oral disease is now becoming a mainstream alternative to synthetic antimicrobials and invasive dental treatments. This is because of the increased availability of such products as well as an increased awareness and understanding from many well published studies showing that herbal alternatives are effective, exhibit limited side effects and exhibit little or no pain when used. Best of all they are ecologically friendly to the environment.

China and India have used herbal medicines for treatment of oral infections and to treat periodontal disease for over 2,000 years. We now have innovative strategies that are accessible, efficient, robust and feasible when treating oral

diseases and maintaining dental health.

To date, over 80% of the global population currently relies upon traditional plant-based medications for treating a variety of human health problems. Currently, there have been over 9,000 native plant species, identified and recorded for their curative properties. Approximately 1,500 of these plants are already in use for their aroma and flavor.

It has been estimated that the total worth of herbal products on the global market today is about 62 billion U.S. dollars. This amount is predicted to rise to 5 trillion USD by the year 2050 (*Bhattacharya R., Reddy K. R. C., Mishra A. K. Export strategy of Ayurvedic products from India. International Journal of Ayurvedic Medicine. 2014;5(1):125-128*).

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Akhtar M. S., Degaga B., Azam T. Antimicrobial activity of essential oils extracted from medicinal plants against the pathogenic microorganisms: a review. *Biological Sciences and Pharmaceutical Research*. 2014;2(1):1–7.

Arumugam G., Swamy M. K., Sinniah U. R. *Plectranthus amboinicus* (Lour.) Spreng: botanical, phytochemical, pharmacological and nutritional significance. *Molecules*. 2016;21(4):p. 369. doi: 10.3390/molecules21040369.

## Why Plant Based Remedies are outperforming their Commercial Counterparts

In some cases artificial antimicrobial agents and antibiotics have been demonstrating antimicrobial resistance. Once rare oral infections are rising again perhaps due to the overuse of

antimicrobials or due to the incorrect use of them. Natural phytochemicals from plants do not exhibit anti-biotic resistance and are worthy substitutes to synthetic and artificial substances used to treat oral infections.

For example, bacterial resistance to many leading antibiotics used to treat oral infections (*erythromycin, penicillins and cephalosporins, tetracycline derivatives and metronidazole*) has already been well documented (***Bidault P, Chandad F, Grenier D. Risk of bacterial resistance associated with systemic antibiotic therapy in periodontology. Journal of the Canadian Dental Association. 2007;73(8):721–725.***

In the case of antibacterial agents used to treat or prevent oral diseases, such as chlorhexidine, cetylpyridinium chloride and amine fluorides, there have been reports that these substances can in some cases cause the staining of teeth. There are also reports that they exhibit toxicity, with some of these products being linked to oral cancer (***Traditional Medicinal Plant Extracts and Natural Products with Activity against Oral Bacteria: Potential Application in the Prevention and Treatment of Oral Diseases. Enzo A. Palombo. Jan 2011.***

### **Side Effects of Using Chlorhexidine**

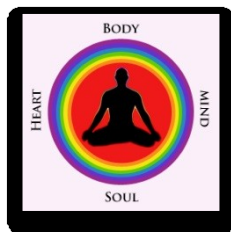
Chlorhexidine is considered to be the "gold standard" disinfectant used in dental research and studies (***Jones, 1997; Arweiler et al., 2001***), being widely used in periodontics. It was also very effective at preventing the formation of plaque (***Addy, 1986***). It has however several side effects (***Keijser et al., 2003; Gurgan et al., 2006***) which may result in poor rinsing by some people (***Addy and Moran, 1985; Cortellini et al., 2008; Van Strydonck et al., 2012***).

### **Further Reading**

Use of Ayurveda in promoting dental health and preventing dental caries. Telles S et al. April 2009.

## Why You Can Enjoy Better Dental Health Utilizing the Holistic Approach

Conventional dental treatments avoid the holistic approach altogether because it is not standard curriculum for students studying dentistry. This gem of a book has already sorted through all the confusion and misinformation, choosing only the best tried and proven holistic methods that work. The end result is a simple reference that can be accessed at your convenience. This is a book you'll want to hand down to your grandkids generation after generation. The beauty of this book is all 3 mainstream holistic treatments, Ayurvedic, Traditional Chinese and traditional Folk remedies are all brought together in one convenient easy to use reference.



This book includes the pioneering research done by Dr. Weston Price and Melvin Page, presenting the facts and methods proven to work, obtained from their research and scientific studies.

Prevention of cavities and treatment is so much more less painful and much less expensive than waiting until extensive tooth decay causes unsightly damaged teeth. Bad eating habits and digestion increases your chance of cavities, from unwanted plaque build-up on your teeth. If you have adequate amounts of stomach acid to digest the food you are eating, your plaque build-up will be substantially reduced.

Simple and quick protocols are presented in a clear straightforward manner for preventing cavities and re-mineralizing teeth. The beneficial side effects of using these proven holistic methods includes increased vitality and vibrancy due to restored hormone levels and the fresh intake of vitamins and minerals.

You may be surprised to learn that many of the most effective foods and spices that relieve toothache may already be in your kitchen cupboard. Clove for example is a powerful natural pain killer for toothache, and hydrogen peroxide mixed

with water between 3% and 4% concentration is a powerful way to kill bad bacteria in the mouth that causes toothache.

## FAST FACT

**Healthy teeth and gums reduces one's chance of contracting pneumonia**

*(Aspiration pneumonia: dental and oral risk factors in an older veteran population. Terpenning MS et al. 2001)*

### Further

Dental caries: a treatable infection. Springfield: Charles C Thomas Publisher. Loesche WJ. 1982.

### Reading

Antibacterial effect of taurolidine (2%) on established dental plaque biofilm. Arweiler NB, Auschill TM, Sculean A. Clin Oral Investig. 2012;16(2):499–504.

### Why Your Dentist Won't Share These Secrets with You

Many of these methods to highly educated people seem unorthodox and “messy”. The fact is the further technology in medicine

advances, the more science will reach the conclusion that nature provides the core principal ingredients needed for





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healing. I highly respect the Dental industry as they are very professional and can do amazing things with teeth and gums. They are miracle workers at taking care of the short term problem. However, when it comes to long term dental health such as prevention, which includes the diet, I believe that many of them ignore this area altogether, as Dental School never taught them the long term prevention techniques and foods that prevent cavities or the proper foods and procedures that re-mineralize teeth. This information is then passed on down to their patients, making the insurance companies very happy. Also cavities are healed with machines and mechanical devices and some companies making these machines do a pretty good business from selling them to dentists. Personally, I prefer the holistic organic methods any day.

An interesting note, as you may have seen so far, or will see later in this book, is that foods and herbs that contribute to perfect dental health also have significant anti-aging and cancer prevention traits. Maltitol, for example, which re-mineralizes teeth, has been shown to be one of the most powerful foods for fly longevity experiments. Fruit Fly experiments showed 100 percent of the fruit flies surviving 18 days when fed Maltitol (4a).

Longevity nutrition is hardly something clinically industrialized medicine today wants to promote. Re-calcification of severe cavities is not only possible, but becoming more commonplace as more and more of this knowledge is revealed. Awareness of these non-painful methods will continue to grow, as people become more aware that using unnecessary resources only continues to destroy our planet and its health.

### **A Special Message for Dentists**

From my experience over the years of talking to you, the dentist, in person, I have found many of you open to the methods that I have mentioned in this book. However, when it comes to long term dental health, I believe that many of you are uneducated, as Dental School never taught you the long term prevention foods, techniques, and methods that help prevent

cavities, or can suppress a toothache or are even aware of the natural methods proven to re-mineralize cavities. I believe a lot of this confusion comes from the insurance companies, who are happy keeping your patients in the dark about alternative methods of dental health and prevention.

### **When you should see a Dentist**

A continuing toothache is the sign of something much more serious. So you should get to a dentist as soon as possible. However before you do, use the tips and techniques shown in Chapter 11 titled "**Actions to Take Immediately if you Have a Toothache**" Chapter 16 **PAGE 171** or "**Traditional Chinese Medicine Methods to Take if you Have Toothache**" **ON PAGE 179** and you may just save a trip to the dentist. Pay particular attention to the section on abscesses as there are some great methods to help immediately reduce the pain from them.

### **A Brief History of Modern Dentistry**

The first dentist was Hesy-Re from ancient Egypt. The time period between 1650 and 1800 saw French Physician, Pierre Fauchard emerge as "***The Father of Modern Dentistry***". Further efforts by Chapin Harris and Horace Hayden in 1840 saw the establishment of the very first dental school, **The Baltimore College of Dental Surgery** (*Oral sciences: History and future research. Divya Mehrotra. Aug 2014*).

### **Introducing the New World of Green Dentistry**

Many decades ago Dr. Winston Price healed numerous people of cavities using specific minerals and substances. Back then the mechanism responsible for such healing was unknown. As of 2019, numerous researchers have found the actual reasons why he was able to reverse cavities. This book includes those studies, giving an overall picture of how cavities can be reversed, prevented, including the avoidance of root canals. This publication includes scientific references and studies, all made into an easy-to-understand format so anyone can learn to

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avoid the dentist at all costs, and only visit the dentist if absolutely necessary. Many detailed studies and scientific breakthroughs regarding dental health have occurred just within the last three years, including an upcoming cavity vaccine.

In this book you will find many plant extracts and substances that are good for the teeth and gums and in some cases may even reverse cavities. The important thing to remember that any substance exhibits a dose dependent reaction in the body. This is because some substances react in a person's body according to their state of health, their diet and whether the extract is fresh or old. Also some extracts are naturally more potent than others, so you may need to use less or more respectively. The best rule of thumb to follow is to "test" an extract as a mouth rise or as an oral cavity prevention agent for a number of times over a period of days and when you feel you have obtained the correct amount, then continue on using that dosage for as long as you feel comfortable. It is also important to note that the more potent a substance is, the less is needed and in some cases the span of time required to use it should be less.

### **The Process of Demineralization. Understanding How Cavities Form**

Cavities form in the tooth as a result of a number of different factors. The Fluoride, Calcium and Phosphate ions in your saliva constantly undergo a rebuilding and destructive relationship in regards to tooth remineralization and demineralization. The culprit responsible for causing cavities is acidogenic and aciduric **Gram-positive bacteria**. The strains known as mutans streptococci (*Streptococcus mutans* and *S. sobrinus*), lactobacilli and actinomycetes are the main culprits. These bad bacteria metabolize sucrose into organic acids (*lactic acid*) which in turn dissolves the calcium phosphate in your teeth. This in turn causes decalcification and eventual tooth decay and loss. Hence, cavities exist as a supragingival condition, in which early intervention can halt or even in some cases reverse their occurrence.

## **How Dental Plaque Causes Cavities**

As the secretion of saliva in our mouth becomes stimulated, glycoproteins and a complex of calcium phosphate start forming (*salivary precipitin*) which eventually turns into dental plaque. This high solubility of calcium phosphate in the mouth's salivary proteins (*which is between 8 and 10 times higher than calcium phosphate in the teeth*), begins acting as a sacrificial mineral which dissolves tooth mineral (*reducing demineralization*). This chemical reaction is similar to zinc anodes that are placed at the bottom of boats so that salt water is attracted to the zinc in order to reduce the amount of rust that forms on a boat. As tooth demineralization takes place, the release of calcium precedes the release of phosphate from the tooth's enamel, dentin, and cementum. This is why using calcium rather than phosphate to help relieve rapid tooth demineralization works best.

## **How an Imbalanced PH Saliva Level Causes Cavities**

Because acidity is the prime mechanism for cavities, PH saliva levels are a contributing factor for causing cavities. Improper PH levels contribute to chemical erosion within the teeth, accelerating tooth erosion. One example of rapid demineralization is excess consumption of soft drinks. The acids in these drinks follow specific routes of direct acidic attack and their destructive pathways are now well documented in the scientific literature. In simple summary, a lower PH (*acidic*) gradually dissolves tooth enamel at a faster pace and much more severely than would a higher PH acid drink (*alkaline*). This is irrespective of the type of acid that exists in a soft drink.

## **Reference**

Demineralization–remineralization dynamics in teeth and bone. Ensanya Ali Abou Neel et al. Sept 2016.

## **Summary**

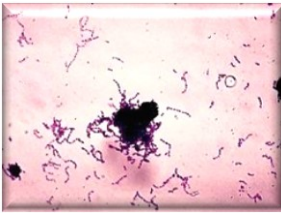
Demineralization occurs when minerals are removed via ions

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from tooth enamel, cementum, dentin and bone. When these mineral ions are restored again it is known as remineralization.

**Streptococcus mutans. The Enemy of all Healthy Teeth**

Cavities, commonly called caries in the dental profession, are caused by cariogenic bacteria such as Streptococcus mutans and Staphylococcus aureus (*pictured in the 2 images on the next page*). These bacteria convert dietary sugars into acids that rapidly dissolve the minerals in your teeth. Killing these types of cariogenic bacteria is the most effective way to prevent tooth decay.



*Plant Extracts Scientifically Proven to Inhibit the  
growth of oral streptococci*

*Abies canadensis (Pinaceae)*

*Albizia julibrissin (Fabaceae)*

*Chelidonium majus  
(Papaveraceae)*

*Ginkgo biloba (Ginkgoaceae)*

*Juniperus virginiana  
(Cupressaceae)*

*Pinus virginiana (Pinaceae)*

*Rosmarinus officinalis  
(Lamiaceae)*

*Sassafras albidum (Lauraceae)*

*Tanacetum vulgare  
(Asteraceae)*

*Thuja plicata (Cupressaceae)*

*Erythrina variegata  
(Leguminosae)*

*Sophora exigua  
(Leguminosae)*

## Reference

Tichy J, Novak J. Extraction, assay, and analysis of antimicrobials from plants with activity against dental pathogens (*Streptococcus* sp.) *Journal of Alternative and Complementary Medicine*. 1998;4(1):39–45.

## A New Anti-cavity Vaccine is on the Horizon

Chinese research scientists combined *S. mutans* with proteins in order to create a vaccine that wards off bacteria responsible for cavities. The vaccine is similar in principle to developing a flu shot. Tests conducted on mice found that mice without cavities exhibited a 64.2% prevention rate in cavities. Mice with cavities exhibited an astounding 53.9% healing rate. The vaccine needs to be tested in humans to test for inflammatory responses, particularly in the liver, kidney, cardiovascular system and lungs (*Second-generation Flagellin-rPAc Fusion Protein, KFD2-rPAc, Shows High Protective Efficacy against Dental Caries with Low Potential Side Effects. Jingyi Yang et al. Sept 2017*).

## Further

## Reading

A DNA Vaccine Encoding a Cell-surface Protein Antigen of *Streptococcus mutans* Protects Gnotobiotic Rats from Caries. Show all authors. M.W. Fan<sup>1</sup> et al. Nov 2002.

Serum and salivary antibody responses in rats orally immunized with *Streptococcus mutans* carbohydrate protein conjugate associated with liposomes. Wachsmann D et al. May 1986.

Flagellin-PAc Fusion Protein is a High-efficacy Anti-caries Mucosal Vaccine Y. Sun. et al. Aug 2012.

Salivary IgA enhancement strategy for development of a nasal-spray anti-caries mucosal vaccine. HuiMin Ya. May 2013

Prospects in Caries Vaccine Development. D.J. Smith. Oct 2011.

A therapeutic anti-*Streptococcus mutans* monoclonal antibody

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used in human passive protection trials influences the adaptive immune response. Robinette, R. A. et al. June 2011.

Comparison of an adherence domain and a structural region of *Streptococcus mutans* antigen I/II in protective immunity against dental caries in rats after intranasal immunization. 1998.



## Chapter 1 - Natural Herbs and Extracts for Periodontal Disease



**W**elcome to the 2020 edition. This new edition includes not just the latest studies on tooth health and cavity remineralization techniques, but also new findings on the remarkable healing power of essential oil mouth rinses and an investigation into how coffee prevents cavities. This edition also includes a more detailed process of natural tooth remineralization and other interesting facts about how natural tooth recovery can be accomplished by anyone with the right knowledge. Let us first start with the basics of what causes a person's tooth to fall out. The main cause of tooth loss is periodontal disease, which causes discomfort and compromises the esthetics of a person's appearance. Recently published studies show that an association exists between chronic low-grade periodontal disease and systemic health problems. These problems include an increased risk of cardiovascular disease, diabetes mellitus, preterm low birth weight and chronic obstructive pulmonary disease (*Manjunath BC, Praveen K, Chandrashekar BR, Rani RM, Bhalla A. Periodontal infections: A risk factor for various systemic diseases. Natl Med J India. 2011;24:214–9.*)

When we are born, our oral cavity is effectively sterile and free of bad bacteria. As we begin to learn to eat, bacteria begin **breaking down fermentable carbohydrates such sucrose, glucose and fructose**. This causes an acidic environment to form in our saliva which in turn leads to demineralization of the teeth and eventually cavities. This is why using non-fermentable sugars can actually inhibit cavities. For example, studies have found that using **non-fermentable sugars** in the chewing gum xylitol inhibited the effects of *S. mutans*. This was demonstrated in an in-depth research study that concluded



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that xylitol exhibited anticariogenic effects due to its ability to inhibit the growth of *S. mutans*, all while not affecting healthy streptococci that are a part of normal healthy oral flora (**Sahni PS, Gillespie MJ, Botto RW, Otsuka AS. *In vitro* testing of xylitol as an anticariogenic agent. *General dentistry.* 2002;50(4):340–343**).

## References

Caufield PW, Griffen AL. Dental caries. An infectious and transmissible disease. *Pediatr Clin North Am.* 2004;47(5):1001–1019.

Douglass J, Douglass A, Slik H. A practical guide to infant oral health. *Am Fam Physician.* 2004;70(11):2113–2120.

## What exactly is Periodontal Disease?

Periodontal disease is indicated by bone loss in and around the tooth socket(s). Periodontal disease is a gradual process where bacteria in plaque slowly contaminate the gums and the bones which hold the teeth in their socket(s). Poor periodontal health is the leading cause of tooth loss which affects up to 20% of the worldwide adult population (**Enzo A. Palombo. *Jan 2011***).

Advanced cases of periodontal disease cause regions at or below the gingival crevice to gradually become infected, eventually leading to inflammation in the surrounding connective tissue of the tooth. These inflammatory responses eventually manifest as gingivitis, which manifests as bleeding of gum tissues) or in periodontal disease, which is an inflammatory response that causes a loss of the collagen attached to the tooth, eventually leading to the loss of bone connecting the tooth (**Loesche W. *Dental caries and periodontitis: contrasting two infections that have medical implications. *Infectious Disease Clinics of North America.* 2007;21(2):471–502***). Research studies have found that a strong association exists between severe periodontal diseases and diabetes.

## References

Petersen PE, Bourgeois D, Ogawa H, Estupinan-Day S, Ndiaye C. The global burden of oral diseases and risks to oral health. *Bulletin of the World Health Organization*. 2005;83(9):661–669.

Petersen PE. The World Oral Health Report 2003: continuous improvement of oral health in the 21st century—the approach of the WHO Global Oral Health Programme. *Community Dentistry and Oral Epidemiology*. 2003;31:3–24.

Petersen PE. The burden of oral disease: challenges to improving oral health in the 21st century. *Bulletin of the World Health Organization*. 2005;83(1):p. 3.

Periodontal diseases have been linked to the anaerobic Gram-negative bacteria (*Porphyromonas gingivalis*, *Prevotella*, *Actinobacillus* and *Fusobacterium*).

Traditional Medicinal Plant Extracts and Natural Products with Activity against Oral Bacteria: Potential Application in the Prevention and Treatment of Oral Diseases. Enzo A. Palombo. Jan 2011.

In cases of mild to moderate periodontal disease, irrigating solutions, mouth rinses and sustained release devices are used to distribute antimicrobial agents throughout the teeth and gums which help control and treat periodontal disease.

## Herbs for Relief of Periodontal Disease

The best herbs for Periodontal Disease include: Goldenseal, Ginkgo, Spilanthes, Echinacea, Oregon Grape or Barberry. Garlic and Vitamin E also help reduce infection. Minerals and Vitamins for after periodontal therapy

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A research study found that taking vitamins A, B, C, E with omega-3 fatty acids enhanced healing after non-surgical periodontal therapy.

### Reference

Higher intakes of fruits and vegetables, beta-carotene, Vitamin C, a-tocopherol, EPA, and DHA are positively associated with periodontal healing after nonsurgical periodontal therapy in nonsmokers but not in smokers. Dodington D.W. et al. (2015).

### Natural Treatments for Severe Periodontal Disease

In cases of severe periodontal disease, green tea extract has been used, especially in individuals diagnosed with diabetes.

### Reference

Gadagi J.S., Chava V.K., Reddy V.R. Green tea extract as a local drug therapy on periodontitis patients with diabetes mellitus: a randomized case-control study. *J Indian Soc Periodontol.* 2013;17(2):198-203.

### How to use Propolis for Severe Periodontal Disease

Research studies have found that Propolis exhibits strong antimicrobial activity, and that its effectiveness was similar to the antiseptic mouth rinse chlorhexidine. It was also found to exhibit better performance than sage or clove extracts in a study which looked at the ability of these substances and their ability to inhibit the growth of microbes in the saliva of subjects diagnosed with chronic periodontitis (*Feres M, Figueiredo LC, Barreto IM, Coelho MH, Araujo MW, Cortelli SC. In vitro antimicrobial activity of plant extracts and propolis in saliva samples of healthy and periodontally-involved subjects. Journal of the International Academy of Periodontology. 2005;7(3):90-96.*

**Carbopol-based herbal gel** - Containing the bark of *Mimusops elengi*, *Acacia arabica* and *Punica granatum*. Topical application upon the teeth of this gel was comparable to chlorhexidine gel in the management of chronic periodontitis.

**Reference**

Phogat M., Rana T., Prasad N., Baiju C.S. Comparative evaluation of subgingivally delivered xanthan-based chlorhexidine gel and herbal extract gel in the treatment of chronic periodontitis. *J Indian Soc Periodontol.* 2014;18(2):172–177.

**1% curcumin gel** - Used to treat chronic periodontitis.

**Reference**

Bhatia M., Urolagin S.S., Pentyala K.B., Urolagin S.B., Menaka K.B., Shreedevi Bhoi S. Novel therapeutic approach for the treatment of periodontitis by curcumin. *J Clin Diagn Res.* 2014;8(12):ZC65–ZC69.

**Periocare® Gum Massage powder** - Contains *Eugenia caryophyllata*, *Glycyrrhiza glabra*, *Cinnamon zeylanicum*, *Piper nigrum* and *Rubia cordifolia*. Effective for treating periodontal disease.

**Reference**

Suchetha A., Bharwani A.G. Efficacy of a commercially available multi-herbal formulation in periodontal therapy. *J Indian Soc Periodontol.* 2013;17(2):193–197.

**Treating Periodontal Disease with 470nm Blue Light**

A gel containing curcumin was applied for 5 minutes. During this time the gums and teeth were irradiated using a blue halogen curing light with the wavelength 470 nm and intensity of 620 mW/cm<sup>2</sup>. After 5 minutes an improvement in periodontitis was observed.

### Reference

Sreedhar A., Sarkar I., Rajan P. Comparative evaluation of the efficacy of curcumin gel with and without photo activation as an adjunct to scaling and root planning in the treatment of chronic periodontitis: a split mouth clinical and microbiological study. *J Nat Sci Biol Med.* 2015;6 (Suppl 1):S102–S109.

**10 mg/g C. longa extract** - Reduced inflammation caused by periodontal diseases.

### Reference

Sharma V., Kalsi D.S. Effects of topical application of curcuma longa extract in the treatment of early periodontal diseases *Indian. J Dent Sci.* 2016;8(3):118–123.

### Naringin

Naringin, found in abundance in grapefruit, inhibits the growth of periodontal pathogens. This is interesting because later on in this book I show how Naringin can be used to flush out sugar toxins from the body (*Tsui VWK, Wong RWK, Rabie A-BM. The inhibitory effects of naringin on the growth of periodontal pathogens in vitro. Phytotherapy Research. 2008;22(3):401–406.*

### Turmeric for Periodontal Health

A research study concluded that Turmeric (*which is abundant in Curcumin*) plays a major role in the treatment of oral cancer and periodontal disease. The study also suggested that Turmeric can be used as a mouthwash, a pit and fissure sealant and as a sub-gingival irrigant in different preparations used in dentistry.

### Reference

Role of curcumin in systemic and oral health: An overview  
Monika Nagpal and Shaveta Sood. Jan 2013.

### Further

### Reading

Comparative evaluation of turmeric and chlorhexidine gluconate mouthwash in prevention of plaque formation and

gingivitis: a clinical and microbiological study. Waghmare PF, Chaudhari U, Karhadkar VM, Jamkhande AS. *J Contemp Dent Pract.* 2011;12(4):221–23.

### **Natural Herbs Scientifically Proven to Treat Periodontitis**

**Drosera peltata** - Plumbagin is the main component of this extract. Drosera is commonly used to treat cavities due to its ability to exhibit a broad range of antimicrobial activity against *S. mutans* and *S. sobrinus* (*Didry N, Dubreuil L, Trotin F, Pinkas M. Antimicrobial activity of aerial parts of Drosera peltata Smith on oral bacteria. Journal of Ethnopharmacology. 1998;60(1):91–96.*

**Helichrysum italicum** - A Mediterranean plant. An extract of this was used to kill bad oral bacteria.

<b>Additional Herbs used to Treat Periodontitis</b>	
Acacia catechu	Mikania laevigata
Aloe vera	Mikania glomerate
Azadirachta indica	Coptidis rhizome
Glycyrrhiza glabra	Piper cubeba
Cinnamomum zeylanicum	Azadirachta indica
Allium sativum	Syzygium Aromaticum
Propolis	Tea tree oil

### **Reference**

Shama N.S., Prasanna K.R., Joshna A., Lakshmi Srinivas T. Effect of herbs on periodontitis – a serious gum infection. *Int J Pharmacol Res.* 2014;4(1):17–22.

## Chapter 2 - Natural Plant remedies for rebuilding and maintaining strong healthy teeth

**What is Gingivitis?**  
Gingivitis is a bacteria found in the oral cavity, where it is responsible for periodontal diseases. It is also found in the respiratory tract and colon.

### Scientifically proven natural herbs and mouth rinses for treating Gingivitis

**Salvadora persica**  
When *Salvadora persica* extract was made into a mouthwash, it significantly reduced gingival bleeding and reduced the presence of cariogenic bacteria (*Khalessi AM, Pack ARC, Thomson WM, Tompkins GR. An in vivo study of the plaque control efficacy of Persica: a commercially available herbal mouthwash containing extracts of Salvadora persica . International Dental Journal. 2004;54(5):279–283*).

**10 mg curcuma longa extract** - Effective for treating inflammation caused by gingivitis.

#### Reference

Varghese M.K., Nagaratna D.V., Scariya L. Curcumin and metronidazole in periodontal therapy. *Int J Res Ayurveda Pharm.* 2014;5(6):680–684.

**10% non-absorbable neem chip** - This clinical trial found it effective in treating gingivitis.

#### Reference

Vennila K., Elanchezhiyan S., Ilavarasu S. Efficacy of 10% whole *Azadirachta indica* (*neem*) chip as an adjunct to scaling

and root planning in chronic periodontitis: a clinical and microbiological study. *Indian J Dent Res.* 2016;27(1):15–21.

### **HiOra FNx01 Mouthrinse**

Reduced plaque and gingivitis scores and reduced gingival bleeding.

### **Reference**

Aspalli Shivanand, Sudhir Shetty V., Devarathnamma M.V., Nagappa G., Archana D., Parab Prachi. Evaluation of antiplaque and antigingivitis effect of herbal mouthwash in treatment of plaque induced gingivitis: a randomized, clinical trial. *J Indian Soc Periodontol.* 2014;18(1):48–52.

A commercial mouthrinse that has been for sale for over 100 years consisting of thymol, eucalyptol, menthol and methyl salicylate (oil of wintergreen) was scientifically studied for its ability to reduce plaque. The study found that it reduced plaque up to 34% and gingivitis up to 35% (*Prevention in Clinical Oral Health Care. By David P. Cappelli, DMD, MPH, PhD, Connie Chenevert Mobley, PhD, RD. 2008*).

Now that you have a general idea of how to heal painful or unhealthy teeth, let's next look at foods that will help keep them strong and healthy.

### **Using Gallic Acid for Powerful Cavity Repair**

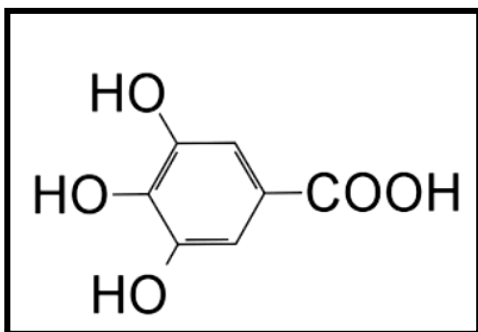
Studies have found that gallic acid remineralized tooth enamel (*Effect of gallic acid on the wear behavior of early carious enamel. Gao SS et al. Jun 2009*).

An in-depth research study used 40 human premolar specimens that contained early caries. Over the period of 12 days the premolar specimens were treated with 4000 ppm gallic acid. The study concluded that gallic acid significantly improved the hardness of the tooth enamel via re-mineralization. The molecular structure for gallic acid is shown in the following picture.



## Reference

Effect of gallic acid on the wear behavior of early carious enamel. S. S. Gao et al. June 2009.



According to phenol-explorer.eu, gallic acid is found in abundance in the following foods: Walnut Liquor, Chicory, Red Wine, Black Tea and Sage. Extremely high

amounts are present in Sage and Clove.

I strongly recommend where possible to purchase Organic Black Tea. It may be harder to find and a little more expensive, but you will really feel the results.

## The Natural remineralization Power of Galla Chinensis

The Chinese herb *Galla chinensis* contains an abundance of gallic acid and studies have found it effective in remineralization of teeth (*Effect of enamel organic matrix on the potential of Galla chinensis to promote the remineralization of initial enamel carious lesions in vitro.* Linglin Zhang et al. Jun 2009), (*Galla chinensis Compounds Rematerialize Enamel Caries Lesions in a Rat Model.* Zhang TT et al. 2016). (*Effect of Galla chinensis on the in vitro remineralization of advanced enamel lesions.* Cheng L and ten Cate JM. Mar 2010).

## Further Reading

White tea (Effect of Green and White Tea Pretreatment on Remineralization of Demineralized Dentin by CPP-ACFP-An Invitro Microhardness Analysis. Poornima Jose et al. Apr 2016).

Felszeghy S, Holló K, Módis L, Lammi MJ. Type X collagen in human enamel development: A possible role in mineralization. *Acta Odontol Scand.* 2000;58:171 6.

Cheng L, Li J, Hao Y, Zhou X. Effect of compounds of *Galla Chinensis* on remineralization of enamel surface in vitro. *Arch Oral Biol.* 2010;55:435 40.

Burwell AK, Litkowski L, Greenspan D. Calcium sodium phosphosilicate: Remineralization potential. *Adv Dent Res.* 2009;21:83 6.

Cheng L, Li J, Hao Y, Zhou X. Effect of compounds of *Galla Chinensis* on remineralization of enamel surface in vitro. *Arch Oral Biol.* 2010;55:435 40.

Reynolds EC. Calcium phosphate-based remineralization systems: Scientific evidence? *Aust Dent J.* 2008;53:268 73.

Burwell AK, Litkowski LJ, Greenspan DC. Calcium sodium phosphosilicate (**NovaMin**): Remineralization potential. *Adv Dent Res.* 2009;21:35 9.

The most common foods for healthy teeth are:

- \* Plain organic yogurt (*Abundant in Calcium*)
- \* Cod liver oil (*Vitamins A & D*)
- \* Organic Raw Parsley
- \* Sage Powder
- \* Pumpkin seeds
- \* Sesame seeds
- \* Dried Kale (*Abundant in Vitamin K*)
- \* Spirulina. (*Abundant in Vitamin A and highly bio-available minerals*)

## Chapter 3 - Great Tasting Sweets that are also good for Your Teeth

It can be easy to assume that foods that prevent / heal cavities have to taste bad or bland. This is a false belief. For example, warm sunshine creates vitamin D in our bodies, one of the best vitamins that ward off cavities and strengthen teeth and studies have found that dark chocolate plays a role in the prevention of cavities.

Many of us were brought up to believe that sweet foods are bad for our teeth. This is true for some foods, however did you know that there are some foods that taste sweet and are good for your teeth? This short chapter is devoted to foods that not only taste good, but also keep the teeth free of cavities, or in some cases reverse cavities and avoid a root canal altogether. I wish I had these when I had my root canal in Eugene Oregon in early 2000.

### Ice



### Cream

A study using ice-cream to deliver probiotics to 40 adolescents (*Bifidobacterium lactis* Bb-12 and *Lactobacillus acidophilus* La-5) discovered significant reductions in their salivary MS scores after consumption of the probiotic ice cream (*The Use of Probiotic Strains in Caries*

*Prevention: A Systematic Review. Maria Grazia Cagetti. July 2013).*

**A Lollipop that Prevents Cavities**  
Licorice root (**Glycyrrhizol A**) is a sweet tasting herb that contains substances that exhibit strong antimicrobial activity against cariogenic bacteria. A research study created a method

for producing a sugar-free lollipop containing licorice root, aiming to effectively kill cariogenic bacteria such as *Streptococcus mutans*. The study found that licorice lollipops exhibited antimicrobial activity and that it was stable in lollipop form. Two pilot studies on human volunteers were conducted which found that brief applications of these lollipops (*twice a day for 10 days total*) led to a significant reduction of oral causing cariogenic bacteria in the oral cavity among most of the human subjects tested (*Development and evaluation of a safe and effective sugar-free herbal lollipop that kills cavity-causing bacteria. Chu-hong Hu.et al. Jan 2011*).

## **Dark Chocolate (*Cocoa*) for the Prevention of Cavities**

### **Why Cacao Chocolate may help prevent Cavities**

Plant based stimulant beverages such as chocolate; tea and coffee have demonstrated moderate to strong anti-cavity potential.

### **Reference**

Ferrazzano GF, Amato I, Ingenito A, Natale AD, Pollio A. Anti-cariogenic effects of polyphenols from plant stimulant beverages (**cocoa, coffee, tea**) *Fitoterapia*. 2009;80:255–22.

### **Cacao**

### **Bean**

### **Husk**

Experiments showed that an extract of cacao bean husk significantly reduced the growth rate (**69–72% reduction**) of *S. mutans* and inhibited insoluble glucan synthesis as well as reduced the adhesion of *S. mutans* and *S. sobrinus* to glass surfaces (*Ooshima T, Osaka Y, Sasaki H, et al. Caries inhibitory activity of cacao bean husk extract in in-vitro and animal experiments. Archives of Oral Biology. 2000;45(8):639–645*).

### **Reference**

Aerial parts of *Mikania laevigata* and *M. glomerata* (Yatsuda

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R, Rosalen PL, Cury JA, et al. Effects of Mikania genus plants on growth and cell adherence of mutans streptococci. *Journal of Ethnopharmacology*. 2005;97(2):183–189).

The following information comes from a meta-data analysis study titled: **Anti-cariogenic effects of polyphenols from plant stimulant beverages (cocoa, coffee, tea)**, which was conducted by Ferrazzano GF and published in May 2009. Recent studies have found that cocoa, coffee and tea are abundant in polyphenols which play a role in the prevention of cariogenic processes (*cavity formation*). This is due to their antibacterial action. The main substances responsible for the protection against cavities in dark chocolate are Cocoa polyphenol pentamers, which have been scientifically proven to significantly reduce acid production and biofilm formation produced by the cavity forming bacteria *Streptococcus mutans* and *S. sanguinis*.

**Dark Chocolate reduces Cavities by 73 per cent**



Studies on hamsters in which 20% of their sugar containing control diet was replaced by sweetened chocolate, had a reduction in their caries by up to 35 per cent

when fed milk chocolate and up to 73 per cent when fed dark chocolate (*Inhibition of hamster caries by substance in chocolate. A Strålfors. Sept 1967*).

## Roasted Coffee for Strong and Healthy Teeth



Roasted Coffee and Green Tea contain the substances caffeine, chlorogenic acid and trigonelline which interfere with the cavity causing bacteria *Streptococcus mutans'* ability to cause cavities

(*Anti-cariogenic effects of*

*polyphenols from plant stimulant beverages (cocoa, coffee, tea)* Ferrazzano GF et al. May 2009).

## A Dark Chocolate Rich Diet for the Prevention of Periodontitis

Studies conducted by Tomofuji et al. examined the effects of a cocoa-enriched diet (**10% of total food intake**) on gingival oxidative stress upon rats that had periodontitis. His study concluded that a cocoa rich diet diminished periodontitis-induced oxidative stress, thus possibly suppressing the progression of periodontitis. The study further observed that the rats did not exhibit gingival infection compared to the control group. The study recommended further studies to define the optimum dose of dark chocolate in the diet for healthy teeth and gums as well as new experiments to develop inflammatory processes to reduce chronic periodontitis in humans.

## Some Chocolates and Cocos may REDUCE the risk for Cavities and Periodontal Disease

Studies by Mao et al. found that **consuming some cocoas and chocolates could reduce the risk for dental caries** and periodontal disease. Their hypothesis was that purified cocoa flavanol oligomers inhibits the bacteria responsible for cavities via immunomodulatory effects in the production of various cytokines as well as the abundance of procyanidins. Especially noted was the presence of the cytokine IgA which has been

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shown to exhibit protective effects in periodontal diseases. The study concluded that dark chocolate could be therapeutic for those suffering from periodontal disease.

**Further**

**Reading**

The effect of cocoa ash on caries in the rat: comparison of ashed cocoa with a mineral mixture. Kinkel HJ et al. May 1960.

The role of cacao extract in reduction of the number of mutans streptococci colonies in the saliva of 12-14 year-old-children. Fajriani et al. Apr 2016.

Inhibition of hamster caries by cocoa. Caries inhibition of water and alcohol extracts of cocoa. Strålfors A. Mar 1966.

Effect on hamster caries by dialysed, detanned or carbon-treated water-extract of cocoa. Strålfors A. Jun 1966.

Nutrition Facts	
Valeur nutritive	
Per 3 squares (30 g) / pour 3 carrés (30 g)	
Amount	% Daily Value
Teneur	% valeur quotidienne
Calories / Calories 180	
Fat / Lipides 16 g	25 %
Saturated / saturés 10 g	
+ Trans / trans 0 g	50 %
Cholesterol / Cholestérol 0 mg	
Sodium / Sodium 10 mg	0 %
Carbohydrate / Glucides 9 g	3 %
Fibre / Fibres 4 g	16 %
Sugars / Sucres 2 g	
Protein / Protéines 6 g	
Vitamin A / Vitamine A	2 %
Vitamin C / Vitamine C	0 %
Calcium / Calcium	2 %
Iron / Fer	15 %

**Dark Chocolate contains Less Sugar**

The next time you are in the supermarket, look at the nutrition facts label of a 90% Cacao Chocolate Bar. You will find it has much less sugar than a standard chocolate bar, which can contain on average up to 15 grams of sugar. 90% dark chocolate contains on average of between 2 and 8 grams of sugar.

**Cocoa improves the health of people with Diabetes as well as extends lifespan**

While this book was coming to a close, I came across some very recent studies showing that dark chocolate is good for you, and in some cases can help improve the lives of people with diabetes.

**Further Reading**

High-cocoa polyphenol-rich chocolate improves blood pressure in patients with diabetes and hypertension. Ali Rostami et al. Jan 2015.

Use of dark chocolate for diabetic patients: a review of the literature and current evidence. Syed Raza Shah et al. Sept 2017.

Antidiabetic actions of cocoa flavanols. Martin MÁ et al. Aug 2016.

COCOA (Theobroma cacao) Polyphenol-Rich Extract Increases the Chronological Lifespan of *Saccharomyces cerevisiae*. Baiges I et al. 2016.

Cocoa Polyphenols and Their Potential Benefits for Human Health I. Andújar et al. Oct 2012.



## Chapter 4 – Additional Great Tasting Foods that Help Prevent Cavies

### Why Coffee may help prevent Cavities

Research studies conducted by Italian scientists showed that coffee prevented the adhesion of *S. mutans* to tooth enamel. This is a significant finding because it shows that coffee has anti-biofilm properties.

### Reference

Namboodiripad PC, Kori S. Can coffee prevent caries? J Conserv Dent. 2009;12:17–21.

### The Natural Cavity Prevention Properties of Chicory

Chicory is a common coffee substitute and the popular brand of coffee called Nescafe contains between 30% and 40% chicory (**Rama Sharma et al. May 2014**). Chicory has been shown to eliminate excess water accumulated in the body (*the term known as removal of damp in TCM Medicine*) (**Rama Sharma et al. May 2014**). This makes it a unique anti-aging substance because herbs and substances that help keep the teeth strong and healthy also remove dampness from the body. Damp removing herbs are some of the most powerful herbs that extend lifespan, which I have clearly outlined in my series of anti-aging books over the last decade.

A research study set out to discover if pure chicory would reduce the ability of bad bacteria to cling to teeth (*dental bio-film properties*). The study discovered that 100% pure chicory significantly reduced the ability for bad oral bacteria to cling to surfaces over a period of 4 hours; showing strong anti-adherence effects on glass slides. The researchers concluded that pure Chicory showed significant antibacterial effects

against *S. mutans*. The study also concluded that coffee also significantly reduced the adherence of *S. mutans* to glass surfaces.

Also in the study, the 100% chicory showed a significant reduction in *S. mutans* whereas 100% coffee did not exhibit the same effects. The studies in the scientific literature about coffee's ability to prevent cavities may be attributed to the brands of coffee tested, what was added to the coffee before being consumed and how much chicory or other cavity preventive substances were added to the coffee during the manufacturing process. For example, an *in vivo* study performed by Namboodiripad et al. in 2009 demonstrated that coffee exhibited anticaries action. However, the addition of creamers and sweeteners to the coffee reduced the anticaries and antibacterial properties of the coffee (*Namboodiripad PC, Srividya K. Can coffee prevent caries?-An in-vitro study. Internet J Dent Sci. 2009;7(2).*

In conclusion, the researchers stated that both coffee and chicory powder showed anticariogenic properties, but in their own unique ways. Whereas chicory exerted antibacterial effects against *S. mutans*, the coffee significantly reduced the adherence of *S. mutans* to glass surfaces.

## Reference

Antimicrobial and anti-adherence activity of various combinations of coffee-chicory solutions on *Streptococcus mutans*: An *in-vitro* study. Rama Sharma et al. May 2014.

## Lozenges for Oral Health

Another study used lozenges to deliver probiotics (*Lactobacillus brevis* CD2) to 191 children. The children sucked on the lozenges at six week intervals. The study found a statistically significant reduction in cariogenic oral bacteria at the end of the study (*The Use of Probiotic Strains in Caries Prevention: A Systematic Review, that was conducted by Maria Grazia Cagetti, and published in July of 2013*).

### **Why Does Honey Help Prevent Cavities?**

Honey has been found to contain fluoride, calcium, phosphorous and other colloidal honey components (*Nutraceutical values of natural honey and its contribution to human health and wealth. Abdulwahid Ajibola et al. June 2012*). Honey has been shown to exhibit high levels of natural antibacterial activity. Because of this, it has shown potential to reduce the risk of cavities (*Molan PC. The potential of honey to promote oral wellness. Gen Den. 2001;49:584–589*).

Extensive in-depth studies by Molan and colleagues discovered that honey helps prevent periodontics, dental plaque and gingivitis (*English HK, Pack AR, Molan PC. The effects of manuka honey on plaque and gingivitis: a pilot study. J Int Acad Periodontol. 2004;6:63–67*).

Other studies have found that **honey is less cariogenic than sucrose** and in one electron microscopy study, honey consumption was found to be safer and less damaging to oral health than drinking fruit juice

### **References**

Decaix C. Comparative study of sucrose and honey. Chir Dent Fr. 1976;46:59–60.

Steinberg D, Kaine G, Gedalia I. Antibacterial effect of propolis and honey on oral bacteria. Am J Dent. 1996;9:236–239.

Sela MO, Shapira L, Grizim I, Lewinstein I, Steinberg D, Gedalia I, Grobler SR. Effects of honey consumption on enamel microhardness in normal versus xerostomic patients. J Oral Rehabil. 1998;25:630–634. doi: 10.1046/j.1365-2842.1998.00274.x.

Edgar WM, Jenkins GN. Solubility-reducing agents in honey and partly-refined crystalline sugar. Br Dent J. 1974;136:7–14.

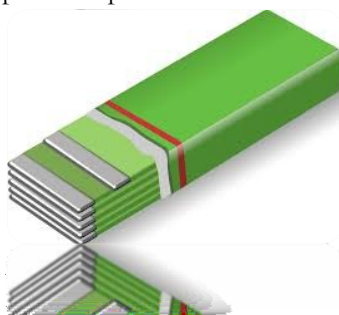
doi: 10.1038/sj.bdj.4803124

Honey applied topically minimizes the severity of oral mucositis in patients that had oral cancer. Honey also expedites healing and reduces the occurrence of oral fungal infections as well as reduces the incidence of cavities due to its ability to inhibit colonization by *S. mutans*. Also studies have found that Manuka honey restricts the growth of *S. mutans* (***Beneficial effects of specific natural substances on oral health. Sameer Shaikh, MDS and S. Manoj Kumar, Dec 2017***).

## A list of Chewing Gums for Strong and Healthy Teeth

### Meswak Extract Chewing Gum

This chewing gum was found to promote periodontal health due to its ability to reverse plaque, bleeding and gingival in the gums (***Salvadora persica L. (Meswak) in dental hygiene. Hilal Ahmad and K Rajagopal. July 2014***).



### Persica Chewing Gum

This gum exhibits strong effects on gingival bleeding and gingival inflammation (***Salvadora persica L (Meswak) in dental hygiene. Hilal Ahmad and K Rajagopal. July 2014***).

### Probiotic Chewing Gum

The probiotic *Lactobacillus reuteri* was administered via chewing gum two times daily for 2 weeks. After 2 weeks, the study discovered that plaque in the group taking the probiotic fell significantly. The study concluded that *Lactobacillus reuteri* was highly effective in reducing both plaque and gingivitis in patients with moderate to severe gingivitis (***Probiotics in periodontal health and disease that was conducted by Anirban Chatterjee et al. and published in January of 2011, (Decreased***

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*gum bleeding and reduced gingivitis by the probiotic Lactobacillus reuteri. Krasse P et al. 2006), (Short-term effect of chewing gums containing probiotic Lactobacillus reuteri on the levels of inflammatory mediators in gingival crevicular fluid. Svante Twetman et al. Jul 2009).*

Scott Rauvers

Thank you for reading one of the very best books on how to prevent cavities and root canals. Be sure to look for it in your local bookstore. This edition is also available on Nook and Kindle for your convenience.

Thank you again and happy reading!!

Scott Rauvers

*Author*