

Dental Nutritional Counseling

In-Office Evidence-Based Program

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In This Program, You Will Learn:

1. Why your dental office is the perfect platform to educate patients about nutrition
2. Current peer-reviewed research that demonstrates the effects of nutrition on dental decay and periodontal disease in human studies
3. My In-Office Nutritional Counseling Program
4. Marketing tools to get the message out

1. The Dental Office is the Perfect Platform

Today's prevalence of dental diseases is staggering. The facts may surprise you, but there are simple nutritional solutions that might amaze you. Your dental office is the perfect platform to inform patients of the steps to take nutritionally to improve the health of their mouths as well as the health of their bodies.

Prevalence of Gum Disease Today

In 2010, a published paper demonstrated that 93.9% of adults in the United States had some form of gingivitis.¹

In 2012, the Centers for Disease Control and Prevention (CDC) published their results in the *Journal of Dental Research*. The report was recently updated in 2015 in the *Journal of Periodontology*.² It showed the prevalence of periodontitis was estimated to be 47.2% for American adults (approximately 64.7 million people). For adults 65 years old and older, the prevalence jumped to 70.1%. These findings were the result of the most comprehensive periodontal evaluation performed ever in the US.

Prevalence of Tooth Decay Today

The CDC's National Center for Health Statistics reported from its most recent data approximately 91% of U.S. adults aged 20–64 had dental caries in permanent teeth.³ The prevalence increases to 93% for those above 65 years old.⁴

The World Health Organization has stated that dental decay is one of the most infectious, non-communicable diseases globally.^{5,6}

¹ <https://www.ncbi.nlm.nih.gov/pubmed/?term=20437720>

² <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4460825/>

³ <http://www.nidcr.nih.gov/DataStatistics/FindDataByTopic/DentalCaries/DentalCariesAdults20to64.htm>

⁴ <http://www.nidcr.nih.gov/DataStatistics/FindDataByTopic/DentalCaries/DentalCariesSeniors65older.htm>

⁵ <https://www.ncbi.nlm.nih.gov/pubmed/23720570>

⁶ http://apps.who.int/iris/bitstream/10665/149782/1/9789241549028_eng.pdf

Why are these diseases out of control?

Our primal ancestors rarely had dental diseases. In fact, primal societies living in various parts of the world today rarely have dental diseases. So, what happened to us in this modern world?

Processed foods increasingly have replaced real, organic foods. We eat foods made from processed sugars and processed grains at almost every meal. We also frequently drink beverages like soft drinks and sports drinks, which are extremely acidic. Sugars, grains, acidic drinks, and the chemicals that have been added to these foods have changed the biology of our mouth and our gut. These “foods” have encouraged pathogenic bacteria to overgrow and cause tooth decay and gum disease.

Unhealthy food choices

- **Free-sugars**⁷ are sugars that are added to foods plus sugars that are concentrated in the form of processed honey, syrups, and fruit juices. These allow unhealthy bacteria to grow in the gut as well as the mouth. These pathogenic bacteria can produce acid levels below pH 5.5 around the tooth surface, causing tooth demineralization. Free-sugars also encourage pathogenic bacteria to overgrow and create gum disease.^{8,9}
- **Grain products** have compounds (called phytates) that bind to nutrients in the saliva and tooth surface thereby increasing the potential for demineralization of the tooth surface.^{10,11} They also contain lectins and other proteins that can cause an increase in pathogenic bacteria in the gut, irritation to the gut lining, and chronic inflammation throughout the body. All these changes can compromise the body’s immune system and the health of the mouth.¹²
- **Sodas** are very acidic – well below a pH of 5.5 – and also feed cariogenic bacteria with free-sugars.¹³ Sugar-free sodas contain artificial sweeteners, which can irritate the gut and create pathogenic types of bacteria.¹⁴ Many “healthy drinks” that include added sugars would be just as unhealthy or acidic as traditional sodas.

⁷ <https://www.who.int/bulletin/volumes/92/11/14-031114.pdf>

⁸ https://cldr.quintessenz.de/cldr_2017_04_s0193.pdf

⁹ <https://www.ncbi.nlm.nih.gov/pubmed/29190114>

¹⁰ <https://www.ncbi.nlm.nih.gov/pubmed/7042578>

¹¹ <https://www.ncbi.nlm.nih.gov/pubmed/9062561>

¹² <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3705319/pdf/nutrients-05-00771.pdf>

¹³ <https://www.ncbi.nlm.nih.gov/pubmed/29063383>

¹⁴ <https://www.ncbi.nlm.nih.gov/pubmed/25231862>

Healthy food choices

There are specific foods that support a healthy mouth, which of course support a healthy body. These include foods high in:

- Omega-3 fatty acids (ex. healthy fish like salmon, herring, sardines, anchovies, shellfish)
- Vitamin C (ex. citrus, dark leafy greens, bell peppers, broccoli)
- Vitamin D (ex. cod liver oil, herring, rainbow trout, pastured eggs, wild caught sockeye salmon, shiitake mushrooms)
- Vitamin A (ex. liver, cod liver oil, king mackerel, salmon)
- Vitamin K2 (ex. natto, raw cheese, butter from grass-fed cows, egg yolks, dark chicken meat)
- Antioxidants (ex. dark chocolate, berries)
- Fiber (ex. fruits, vegetables)
- Magnesium (ex. dark chocolate, avocados, nuts, seeds)

Organic is important

Ideally, plant foods should be organic. Organic is important for two main reasons:

- The first reason: The residues of pesticides, herbicides, and other applied chemicals stay on the plant, and you eat them. These become toxic substances in your body and could cause unhealthy changes in your gut and your immune system, which ultimately would affect your mouth.
- The second reason: When a plant is not exposed to bugs and stressors in its environment, the plant's internal immune system will have no reason to strengthen. The result is that the plant is rendered weaker. The immune system of the plant (phytonutrients) is what makes the plant a healthy food source for us. So, plants that are exposed to chemicals to ward off bugs and other environmental stressors will be less nutritious than plants that are grown organically.

2. Three Medical Research Papers About Diet and Dental Disease

Here are summaries of three medical papers that show the direct relationship of diet and dental disease. They have been published recently in peer-reviewed journals. The importance of all three is that these studies are on humans and not animals. The facts contained in them can be applied to your patients immediately. The results of these studies may make an impact on your patients that could change their oral health and their overall wellbeing for the better.

Study #1

In 2009, Dr. Baumgartner reported a study that was set in an area of Switzerland.¹⁵

In this controlled experiment, ten individuals were not able to brush or floss for 30 days. Their diet consisted of primal foods endemic to their area in Switzerland about 5,700 years ago. No processed foods were available. These participants had to gather and forage for the majority of their food. At the beginning and at the end of the study, pocket depths and bleeding-on-probing around the teeth were measured, and cultures of bacteria were taken from the plaque and from the tongue.

This study was interesting because the researchers were surprised with the results. The study was designed to show how infection would increase without proper oral hygiene.

At the end of the study, there were a significant decrease in bleeding-on-probing and a significant decrease in pocket depths. Amounts of dental plaque increased greatly, but virulent bacteria did not increase in the plaque and on the tongue. Dental plaque and other oral microbes were in a state of homeostasis at the end of the four-week experiment.

Bottom line: A diet that completely removes over-processed foods reduces the signs and symptoms of gum disease. This type of diet allows the interactions of bacteria in dental plaque to become and stay balanced and healthy.

Study #2

Dr. Johan Woelber and researchers performed a randomized clinical trial, which they reported in 2016.¹⁶

Fifteen people were selected for this trial. Only those who had signs of gum disease and were eating a diet heavily based on processed carbohydrates were selected for the study. Ten individuals made up the experimental group, and five individuals made up the control group.

The experimental group had to change their diet. Their new diet consisted of foods low in processed carbohydrates, rich in omega-3 fatty acids, and abundant in vitamins C and D, antioxidants and fiber. The control group did not change their eating habits.

As far as oral hygiene was concerned, all fifteen participants were instructed not to clean between their teeth with dental floss or interdental brushes. However, they did not have to change the way they brushed their teeth with a normal toothbrush.

The study began after each group had two weeks to acclimate to these changes I mentioned above. Then, the four-week study began. The signs of gum disease (bleeding-on-probing, pocket depths, degree of gingival inflammation) in all participants of this scientific project were recorded at the start of the four-week study and at the end.

¹⁵ <https://www.ncbi.nlm.nih.gov/pubmed/19405829>

¹⁶ https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4962497/pdf/12903_2016_Article_257.pdf

At the conclusion of the trial, all disease parameters decreased significantly in the experimental group by approximately 50% from the starting point. In contrast, all inflammatory markers increased from the starting point in the control group.

Bottom line: A diet that eliminates free-sugars and processed grains and includes healthy foods can reduce the signs and symptoms of gum disease. Therefore, a healthy diet can maintain dental plaque in a healthy state.

Study #3

Dr. Sheiham reported on the pivotal role of free-sugars in dental decay.¹⁷

He and his associate published their paper in 2015, which evaluated many previous research studies. The authors concluded:

- Dental decay is diet mediated.
- Free-sugars are the primary and necessary factors to develop dental decay.
- Acid-producing bacteria and other factors facilitate the development of decay, but free-sugars are required.
- Processed food starches possess very low decay potential.

Free-sugars include all sugars added to foods in any way as I described earlier.

Bottom line: Dental caries is a diet-mediated disease. Free-sugars are the primary and necessary factor in the development in dental decay. These free-sugars feed decay-producing bacteria in healthy plaque, which in turn becomes unhealthy plaque. Free-sugars allow these specific bacteria to overgrow and produce excessive acids that demineralize the tooth surface.

3. Dental Nutritional Counseling Program

Removing unhealthy food choices and substituting healthier foods can reduce current dental disease and prevent future dental decay and gum disease. Your office could implement a nutritional counselling program, which could be run by one of your trained assistants or a dental hygienist.

In fact, the American Dental Association already has a dental code on the books that you can use for nutritional counseling to submit to insurance companies. The CDT Code is D1310: Nutritional counseling for control of dental disease. The description of this code is, ***“Counseling on food selection and dietary habits as a part of treatment and control of periodontal disease and caries.”***

¹⁷

<https://www.ncbi.nlm.nih.gov/pubmed/?term=Diet+and+Dental+Caries%3A+The+Pivotal+Role+of+Free+Sugars+Reemphasized>

A Patient Comes Into the Office - What To Do?

#1: Treat any immediate pain, infection, or dental emergency with the procedures you have determined to be appropriate.

#2: If the patient has heavy plaque or supragingival calculus that makes it difficult for you to do a thorough exam, schedule a debridement with the hygienist (D4355) so you can follow up with a thorough dental exam.

#3: After your thorough exam, schedule the proper “cleaning appointment”, and develop a treatment plan for necessary procedures. Discuss the **Dental Nutritional Counseling Program**. If the patient is interested, move to Step #4.

#4: Schedule the appropriate **Dental Nutritional Counseling** appointments (D1310).

- First nutritional counseling appointment (D1310): At this initial appointment, your trained staff member would discuss the program with the patient and present the **3-Day Food Journal** for the patient to complete. Then, schedule the second nutritional counseling appointment.
- Second nutritional counseling appointment (D1310): Review the patient’s completed **3-Day Food Journal**; identify the “free sugars”, “processed grains”, and “sodas” that are part of the patient’s eating habits. Then, recommend healthier food substitutes. Schedule additional nutritional counseling appointments (D1310) as needed. Consider intervals of every 3 months, every 6 months, or every year as required.

3-Day Food Journal

Here is the journal you will provide your patients at the first nutritional counseling appointment (D1310). There is an instruction page followed by three pages – a separate page for each full day of journaling.

At the second nutritional counseling appointment (D1310), your staff member will decipher the **3-Day Food Journal**. The hygienist or trained staff member will look for “free sugars”, “processed grains”, and “sodas” that are being consumed. The staff member will highlight these foods on the patient’s journal and will suggest healthier foods options to replace them.

Instructions for Patient

It is important to keep an accurate record of your usual food and beverage intake. Complete the following **3-Day Food Journal** for three consecutive days including one weekend day.

- Do not change your eating behavior at this time. The purpose of this food journal is to analyze your present eating habits.
- Record information as soon as possible after you have eaten.
- Identify whom you were eating with (spouse, family, friend, alone).
- Describe all foods and beverages consumed as accurately and in as much detail as possible including estimated amounts.
- Record the amount of each food or beverage consumed using standard measurements such as 8 ounces, 1 cup, 1 teaspoon, etc.
- Include any added items, for example: tea with 1 tsp. of honey, potato with 2 tsps. butter, etc.
- List all beverages and types, including water, coffee, tea, sports drinks, sodas/diet sodas, etc.
- Enter “additional comments” as necessary.

3-Day Food Journal - Day 1

Patient: _____

Date: _____ Day of Week: _____

Meal	Food and Beverages
<u>Breakfast</u> Time:	
<u>Snack</u> Time:	
<u>Lunch</u> Time:	
<u>Snack</u> Time:	
<u>Dinner</u> Time:	
<u>Snack</u> Time:	
Additional Comments	

3-Day Food Journal – Day 2

Patient: _____

Date: _____ Day of Week: _____

Meal	Food and Beverages
<u>Breakfast</u> Time:	
<u>Snack</u> Time:	
<u>Lunch</u> Time:	
<u>Snack</u> Time:	
<u>Dinner</u> Time:	
<u>Snack</u> Time:	
Additional Comments	

3-Day Food Journal – Day 3

Patient: _____

Date: _____ Day of Week: _____

Meal	Food and Beverages
<u>Breakfast</u> Time:	
<u>Snack</u> Time:	
<u>Lunch</u> Time:	
<u>Snack</u> Time:	
<u>Dinner</u> Time:	
<u>Snack</u> Time:	
Additional Comments	

How to Decipher the 3-Day Food Journal

First of all, you are not a trained nutritionist, and you will not be making nutritional recommendations to treat any disease other than dental disease, which as a dental office you are qualified to treat.

When you review your patient's **3-Day Food Journal**, you will be looking specifically for foods that are the primary causes of dental diseases. These unhealthy food choices include all processed grain products, all free sugars, and all sodas (sugar and sugar-free). These have been reviewed under "Unhealthy food choices" earlier in this paper.

You also will recommend foods that support a healthy mouth. These include the foods that were discussed earlier under "Healthy food choices".

Examples of processed grain products:

Breads, sandwiches, rolls, bagels, pasta, spaghetti, pretzels, cookies, cakes, donuts, crackers, pastries, breakfast cereals, pancakes, pizza, popcorn, rice cakes, etc.

Examples of free sugars:

White, brown, and raw sugars; all manufactured sweeteners, corn syrup, and high fructose corn syrup; naturally occurring sugars in syrups, fruit juices, and concentrates. Anything made with added sugars like candies, cough drops, etc.

Examples of sodas:

All bottled or canned sodas (sugar or sugar-free), sports drinks, bottled "health drinks" with added sugars, etc.

Your Goal

Your goal is to discuss these unhealthy food choices with your patients and to suggest substitutes that do not contain these harmful foods (processed grains, free sugars, and sodas). You should try to determine why your patients choose these foods. Are these foods the only ones that are available? Or, are they the only ones that satisfy a "craving"? Or, are they the only ones that their parents provide?

Can you help your patients to understand the damage these unhealthy food choices are creating, and can you help motivate your patients to make a change for their dental health?

Encourage your patients and emphasize that they may have setbacks. That is OK. You should be there to help them in the future. Help them understand that these unhealthy food choices are unhealthy for their guts and can affect all areas of their bodies.

Several nutritional counseling appointments may be necessary to accomplish these goals. Also, it would be beneficial that a **Dental Nutritional Counseling** appointment be scheduled yearly with a new **3-Day Food Journal** to be filled out prior to each annual counseling appointment.

Healthier Food Substitutions

The following “Grain Substitutes” and “Sugar Substitutes” guides will help you make suggestions to replace the free-sugars, processed grains, and sodas of all types. The **BOLD** type in the “Healthier Substitute” column are brands that can be purchased online and in various grocery stores.

Grain Substitutes	
Poor Food Choice	Healthier Substitute
Bread (sandwich bread, rolls)	“Paleo Bread” by JulianBakery.com, “Against The Grain” rolls, “BarelyBread.com” , Franz Gluten-Free Breads
Cereal (grains)	Organic quinoa
Chicken noodle soup	Bone broth plus chicken plus “Eden Foods Buckwheat Soba Pasta”
Cookies	“Caveman Cookies” (6 varieties)
Granola	“PaleoKrnch” by StevesPaleoGoods.com; Elan Paleo Mix (Nut-based Granola Cereal)
Hamburger on bun	Hamburger on roll by “Against The Grain”
Macaroni and cheese	“Organic Penne & Cheese Gluten Free & Dairy Free” by Road’s End Organics
Pizza	“Against The Grain” pizza, “Cappello’s Pizza” by Cappellos.com
Popcorn	Preheat oven to 425 degrees, cut up cauliflower into small pieces, combine with olive oil & salt, bake for an hour.
Pretzels	Celery, radishes, cucumbers, nuts, seeds
Protein bars	“Protein Bars” by JulianBakery.com
Sandwich wraps	Romaine lettuce leaves for wraps
Snacks	Raw nuts and seeds, dried figs, dates, fresh berries, organic beef/pork jerky with no added sugars, any vegetable that can be cut into pieces and put into a Zip Lock bag; “Just Beets” and “Crispy Crunchy Okra” by Trader Joe’s
Spaghetti, pasta	Spaghetti squash, “Eden Foods 100% Buckwheat Soba Pasta” ; Shirataki noodles (Miracle Noodles)

Sugar Substitutes	
Poor Food Choice	Healthier Substitute
Candy	(see “Snacks” below)
Fiber/Protein/Energy Bars	“Protein Bars” by JulianBakery.com
Fruit juices	Water, seltzer, smoothies
Ice cream	Blend fresh pureed whole fruit with full-fat unflavored yogurt, heavy cream, or coconut cream and freeze them
Ketchup	Organic tomato paste with added herbs and spices
Milk chocolate bar	85% Dark chocolate: “Alter Eco Dark Blackout” , “Theo Pure 85% Dark Chocolate”
Popsicles	Make smoothie with fresh whole fruits and some greens including all their healthy fiber. Pour the mixture into individual ice cube trays. Then insert a popsicle stick into each cube and freeze them.
Snacks (sugary)	Raw nuts and seeds, dried figs, dates, berries, organic beef/pork jerky with no added sugars, any vegetable or fruit that can be cut into pieces and put into a Zip Lock bag like apple slices, celery sticks, cucumbers slices, radish slices, jicama, or carrots. These could be dipped into organic peanut butter, organic almond butter, or organic coconut butter
Soda	Seltzer, water (may add fresh squeezed lemon or lime), various teas
Sweet treats	Raw fruit (unprocessed)
Table sugar	Organic whole-leaf stevia, Organic monk fruit (Luo Han Guo)
Trail mix	Raw nuts & seeds, organic raw cacao nibs, chopped figs and chopped dates

It is important to realize that parents set the stage for food choices. Providing healthy food choices to children earlier in life helps set the tone and instill healthy eating habits. “Substitution” is an approach after bad habits have been established. It is easier to set good habits at the start than to replace bad habits with good habits later on.

It will help your patients if you customize your recommendations. Here is a form you can fill out. Write the foods substitutes you are recommending in the appropriate categories of “Breakfast”, “Lunch”, “Dinner”, and “Snack”.

Healthier Food Recommendations

Patient: _____ Date: _____

Meal	Problem Foods	Healthier Food Choices
<u>Breakfast</u>		
<u>Snack</u>		
<u>Lunch</u>		
<u>Snack</u>		
<u>Dinner</u>		
<u>Snack</u>		
Additional Comments		

NOTE: It is very important to teach your patients to read the **Nutrition Facts** label and **Ingredients List** printed on all processed foods that will disclose any “added grain ingredients” and “added free sugar ingredients”.

4. Marketing Tools

Marketing is a personal expression of your office. There are many ways to promote the concepts of a healthy nutritional program and how your office is offering this approach. I have put together some thoughts that you may want to incorporate in your advertising campaign.

1. Flyers and posters (featuring colorful and curious graphics) can be placed in the reception room to help interest patients about the program. There are over 7,500 free images on “Nutrition” you can choose on this public domain website:

<https://pixabay.com/en/photos/?order=popular> You could include an image with this sample text: “**Dental Nutritional Counseling**. Ask us, WHY?”

Here are two images I downloaded from Pixabay.com (These pictures are public domain and are available for free from Pixabay.)



image source: <https://pixabay.com/en/baby-bite-boy-child-cute-eat-84686/>



image source: <https://pixabay.com/en/avocado-fruit-baby-food-diet-1476493/>

2. The following can be printed on patient statements as ticklers describing the in-office program. Also, these could be used as ads in print media or as audio recordings for radio spots:

- *“More than 9 out of 10 individuals in the US have gum disease, tooth decay, or both. Our office is offering a new program called **Dental Nutritional Counseling**. Find out how this new program can help you. Call our office or visit our website to learn more.”*
- *“Do your kids have tooth decay? Do you have tooth decay? Most families have been dealing with tooth decay for many years. We are proud to announce that we now offer a cutting-edge program for you and your kids to get tooth decay under control. Ask us how you can learn about our **Dental Nutritional Counseling**.”*
- *“Bleeding gums and tooth decay affect almost everyone. Are you one who suffers? Do you know someone who does? We now have a program for you to be proactive and stop gum disease and tooth decay once and for all. Ask us how you can learn about our **Dental Nutritional Counseling**.”*
- *“Does your breath smell? Do your gums bleed? Do you have tooth decay? Our office can offer a unique program to help you stop, reverse, and prevent dental diseases. Ask us how you can learn about our **Dental Nutritional Counseling**.”*

3. Articles can be inserted in your office’s website, or they can be offered to patients as additional information. Consider using segments I have written in this paper or the articles from medical journals I referenced in this paper.

4. You could send the following letter to medical doctors and their staff describing your in-office program:

Dr. XXX Office
Street
City, State, ZIP

Dear Dr. XXX:

Gum disease and tooth decay affect over 9 out of 10 people in the US. Dentistry has been dealing with these diseases forever. There is evidence-based research that identifies that certain foods and lifestyles affect the health of the mouth in various ways.

Our office is offering patients a program titled, **Dental Nutritional Counseling**. This is a program that teaches patients to be proactive with their nutrition and make changes to stop, reverse, and prevent gum disease and tooth decay in the future. One side effect will be an overall healthier body.

We are excited about the benefits of this program for your patients, too. Let us schedule a lunch-and-learn to show you the science behind the program and what we can accomplish. We can send you some printed information for you to review.

Looking forward to hearing from your office.

In health,

Your dental office

The dental office can have a positive influence on the nutrition of patients. This program helps to educate patients about healthier food choices for the mouth and for the overall body. The ADA has recognized that dental offices are the perfect platform to offer this service by creating a specific dental code for this purpose. Remember, the CDT Code is D1310: Nutritional counseling for control of dental disease. The description of this code is, ***“Counseling on food selection and dietary habits as a part of treatment and control of periodontal disease and caries.”***

Take your office to the next level by offering this evidenced-based nutrition program for your patients.