Oral Systemic Dynamics:  
50 Shades of Inflammation?

PNDC

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“If I had known I was going to live this long,  
I would have taken better care of myself.”  
~Eubie Blake

“Your body is the ground and metaphor of your life,  
the expression of your existence.”  
~ Gabrielle Roth

“What is always speaking silently is the body.”  
~Norman Brown
WHAT ARE SOME OF MY REASONS FOR BEING or GETTING IN THE BEST PHYSICAL CONDITION OF MY LIFE:

1

2

3

4

5

6

7

8

9

10
ARTICLE:

Great Guts – Live Life Well

Want to stay ahead of the curve and set yourself apart from pack? This process starts with incorporating the latest information from the world of science into your office. What else is new beside CBCT’s and digital impressions? Let’s talk about the human micro-biome. What’s that you’re asking? Gut flora.

There are trillions of them. Most dental people know of S.mutans and P.gingivalis but that is only two of the 1,000’s of single celled organisms that add up to 100 trillion in total. And they out number your human cells 10 to 1. Yes you are not alone.

This field is still very new. It’s only been since 2012 when the National Institute of Health completed the first part of the Human Microbiome Project (1). What’s it got to do with you…the practicing dentist? Well we are oral physicians and are the experts of one of the largest repositories of flora….the oral cavity. The GI tract or specifically the gut has 60-70% of the total flora in the body. The gut plays a major role in the immune system – 70% of the cellular parts of the whole immune system are made here (2). Ever wonder why some people don’t heal well after an extraction or implant placement? It could be more than simply smoking or poor flossing technique if they suffer, from reflux, constipation, irritable bowel, diverticulitis, etc.
When good bacteria are abundant they contribute in a major way to the immune system. The immune system is more than simply putting out the fires of infections but concerns the day to day repair and maintenance that keeps us healthy and strong. Probiotics help stimulate the immune cells: T-cell, B-cells, macrophages and natural killer cells. Our well-intentioned prescription for a broad spectrum antibiotic takes care of the abscess in the short term but our body’s flora take a hit for up to six months after - hence the new guidelines by the Canadian Dental Association on prophylactic antibiotics. “There is no reliable evidence that antibiotic prophylaxis prior to dental procedures prevents prosthetic joint infections” (3). NOTE: Of course people need to speak to their surgeons to ensure their recommendations are taken into consideration.

Another reason for the new way of looking at antibiotic prescriptions is growing antimicrobial resistance. Global health care organizations like the WHO (World Health Oragnization) are relaying the message that the overuse and misuse of antibiotics makes us susceptible to a whole dearth of diseases that we thought would not come back (4). Scientists are saying that if our arsenal of antibiotics doesn’t expand, drug resistance infections might kill more people worldwide than cancer by 2050 (5). All the more reason to consider carefully the necessity of prescribing an antibiotic for that emergency patient with a toothache.

Bacteria are very successful organisms. Microbes have been on the earth the last three billion years while animal life only 800 million years. The microbes in our
body collectively weight only 4 pounds but with roughly 1000 species they have more than 3 million genes (6). Their seniority on the planet makes them very versatile and their influence is powerful. Only recently they are thought to influence health as powerful as your genes stated Dr Mazemanian PhD professor of microbiology California Institute of Technology.

Do you want a novel approach to halitosis? Probiotics (naturally occurring in vegetables and healthy fibrous foods) and in capsule (dietary supplement) form support overall oral health. Good bacteria added to the diet in food or capsule form can bring more balance or harmony to the mouth and prevent the proliferation of hydrogen sulfide (linked to halitosis)(7). One study from Turkey demonstrated the group eating yogurt with Bifidobacterium had lower amounts of cavity-causing bacteria than the control group (7)

There is increasing scientific evidence suggesting that when there is an imbalance of harmful and beneficial of organisms, it supports the development of several serious chronic diseases: type 2 diabetes (8), cancer (9) and Inflammatory bowel disease (10). Another reason to maintain balance to your resident microbiome.

Dentists know the value of saliva in its many roles: mastication, immune system (IgA), smooth speech etc. With regards to mastication and nutrient absorption, did you know that there are only 30 human enzymes but over 6000 enzymes from our bacteria (11)? Imbalances in our bacteria mean that enzyme numbers get reduced. Nutrient absorption would be altered and over time, growth and repair of the human body would be negatively impacted.
This would be a suitable addition to the discussion with patients who are suffering from dry mouth and report that their chewing has been adversely impacted. Knowing bacterial enzymes outnumber human enzymes two hundred to one, you could bring some hope or relief to their worry. As long as their gut flora is diverse and healthy, they are still going to be able to digest food. Going on an antibiotic at the same time for another condition however might disrupt their normal flora and impact their enzymatic action.

This is not meant to be an exhaustive piece on the subject but just an introduction to a new area of science that is coming to light. Looking at the bigger picture before you prescribe antibiotics and asking more expanded lifestyle questions about eating habits, exercise (known to boost healthy gut flora (12)) and sleeping patterns. One of the reasons I love being a dentist is that people come to us for their oral health concerns, but by helping patients with their oral care we are able to positively impact their entire health.

Scientific American May 2015
Campbell SC “Exercise is a novel promoter of intestinal health and microbial diversity” Exercise Sports Science Rev Vol 45, No1 41-417 2017
CDA Canadian Dental Association and AMMI Association of Medical Microbiological and Infectious Disease Canada 2017.
CDA Essentials “Antimicrobial Stewardship in dentistry – no time to waste” Issue 1 2017
Discover Magazine Jan/Feb 2016 “Stamping Out Superbugs”


Steinberg B & Calre Fleshman M. Probitics: the Good Bacteria. Institute of Natural Resources © 2015

Cani et al. “Metabolic endotoxemia initiates obesity and insulin resistance” Diabetes 56(7): 1761-1771. 2007

Kostic AD et al. “Genomic analysis identifies association of Fusobacterium with colorectal carcinoma” Genome Res 2012. 22(2): 292-298

Strober W. “Impact of the gut microbiome on mucosal inflammation.” Trends Immunology 2013. 34(9): 423-430

Spector Tim PhD. “Diet Myth” 2015

NEW PATIENT EXAM LIFESTYLE QUESTIONS:

WHY?

- Rx meds:
- Water intake
- Supplements
Eat healthy
Sleep
Exercise
• Stress levels
• MD/DO physical
• Allied health visits
NUTRITIONAL BALANCE EVALUATION
Assessment of Current Nutritional Choices and Health

Nutritional balance can best be described as the ability to make intelligent and beneficial dietary choices. Listed below are statements that refer to nutritional balance. Using the scale, respond to each question by circling the number that best describes your current lifestyle. When you are finished, add your scores for a total out of 80.

<table>
<thead>
<tr>
<th>Description</th>
<th>Great</th>
<th>Good</th>
<th>Fair</th>
<th>Needs Attention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount of energy every day</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>I enjoy eating a diet with lots of variety</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>I eat at least 3-5 servings of vegetables daily</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>I eat a variety of vegetables (many different colors)</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>I eat at least 3 to 5 servings of fruit each day</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>I never feel bloated after eating</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>I attempt to eat whole grain products and avoid refined (white flour) grain products</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>I am careful to eat appropriate serving sizes of grain products (1/2 cup brown rice is one serving)</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>I eat dessert treats 2-4x a week (ice cream, éclairs)</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>I eat 2 – 3 servings of meat and alternatives each day</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>I eat beans and legumes</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>I eat wild seafood / fish at least once a week</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>I choose healthy snacks and avoid snacks that have low nutritional value</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>I drink at least 6 glasses of water daily</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>I take supplements (ie. multi-vitamin) as needed to balance my diet and fill in the gaps of where I am deficient</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>I read labels on all my processed food cans, wrappers</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>My body weight is perfect for my height</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>I have no acne or skin eruptions</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>I need coffee to get through the day</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>I have no digestive issues</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

TOTAL:

70 – 80 – Outstanding!
60 – 69 – Great!
45 – 59 – Just okay
20 – 44 – Needs immediate attention

www.DrUche.com  1-416-558-1774  fitlove@rogers.com
Articles for reference for the Mouth Body Connection:


YOUR TRILLION LITTLE FRIENDS


Trillions of organisms live in our intestines and their metabolic activities affect intestinal health and modulate chronic disease

Evidence from animal studies show exercise modulates microbial communities in a positive way.

Campbell Sara et al., “Exercise is a novel promoter of intestinal health and microbial diversity” American College of Sports Medicine October 2016

Exercise produces a more diverse microbiota and decreases pathogenic bacteria and boosts good bacteria.

HIIT was shown to improve insulin sensitivity and positively affect microbiota communities

YOUR EATING HABITS AND YOUR MICROBIOTA

The more diverse your diet and the more vegetables and fruits you eat the healthier your microbiota will be

Reference:
Tim Spector PhD, The Diet Myth, Weidenfeld and Nicolson 2015

Robynne Chutkann MD Microbiome Solution © 2015
OPTIMAL PREBIOTIC & PROBIOTIC SOURCES:

Fruits

Vegetables

Whole Grains

Fermented foods: sauerkraut, pickles, kimchi (from fermented cabbage), miso (paste made from soybeans, tempeh (made from rich whole soybeans), kombucha (tangy beverage from fermented tea).

DAIRY:

Yogurt

Kefir

Cheese

Reference:
Sternberg B PhD, Fleishman Clare MS, RD., Probiotics: the Good Bacteria. Institute of Natural Resources March 2015
<table>
<thead>
<tr>
<th><strong>A LOOK AT OUR GROCERY LIST</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Broccoli, cauliflower</strong></td>
</tr>
<tr>
<td><strong>Cherries</strong></td>
</tr>
<tr>
<td><strong>Celery</strong></td>
</tr>
<tr>
<td><strong>Cucumber</strong></td>
</tr>
<tr>
<td><strong>Goat Cheese vs cheddar</strong></td>
</tr>
<tr>
<td><strong>Wild Salmon (not farmed)</strong></td>
</tr>
<tr>
<td><strong>Organic / free range eggs</strong></td>
</tr>
<tr>
<td><strong>Bok Choy</strong></td>
</tr>
<tr>
<td><strong>Stevia sweetener</strong></td>
</tr>
<tr>
<td><strong>Kidney beans</strong></td>
</tr>
<tr>
<td><strong>Whole Grain Brown Rice</strong></td>
</tr>
<tr>
<td><strong>Steel cut oatmeal</strong></td>
</tr>
<tr>
<td><strong>Tomatoes</strong></td>
</tr>
<tr>
<td><strong>Asparagus</strong></td>
</tr>
<tr>
<td><strong>Organic Brown Rice Milk</strong></td>
</tr>
<tr>
<td><strong>Sea Salt vs regular table salt</strong></td>
</tr>
<tr>
<td><strong>Brown rice pasta</strong></td>
</tr>
<tr>
<td><strong>Organic wines (if you drink)</strong></td>
</tr>
<tr>
<td><strong>Raw cashews, walnuts, almonds</strong></td>
</tr>
<tr>
<td><strong>Tilapia, halibut, Mahi tuna</strong></td>
</tr>
<tr>
<td><strong>Squash (many varieties)</strong></td>
</tr>
</tbody>
</table>
Write a short question, tear this page off & please bring it up to Uche at the end of the session or email (fitlove@rogers.com) directly for a personal answer

WHAT IS YOUR #1 BURNING NUMBER HEALTH / Lifestyle QUESTION?

PRINT YOUR NAME CLEARLY HERE:

EMAIL ADDRESS (Please print clearly):


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