

PATHWAYS TO HEALTH – Through Risk Reduction & Antioxidant Arsenal

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“Good health is not merely the absence of disease. Good health assumes protection from disease in the future...You cannot buy your health; you must earn it through healthy living.”

Eat to Live by Joel Fuhrman, M.D.

www.americashealthrankings.org

“John, I’m not only interested in the health of your mouth but also concerned about your overall health. We know that disease in the mouth can adversely impact overall health. I’d like to support you in reducing your risk for disease. How does that sound to you?”

2000 AAP PARAMETER OF CARE

- Alter or eliminate microbial etiology and contributing risk factors

2009 CONSENSUS STATEMENT FROM EDITORS OF AMERICAN JOURNAL OF CARDIOLOGY AND AMERICAN ACADEMY OF PERIODONTOLOGY

- Weight reduction
- Increased physical activity
- Reduced saturated fats
- Alcohol in moderation
- Tobacco cessation

2013 CONSENSUS REPORT FROM EUROPEAN FEDERATION OF PERIODONTOLOGY AND AMERICAN ACADEMY OF PERIODONTOLOGY

- PD increases risk for ASVD
- Periodontal pathogens induce inflammation
- Intervention trials not conclusive to reduce risk
- Referral to MD for physical for patients with increased risk
- PT, Diet, Tobacco cessation and exercise key factors to reduce risk

>KNOW YOUR NUMBERS

- FASTING BLOOD GLUCOSE < 100 / HbA1C < 6%
- PRE-DIABETES BLOOD GLUCOSE 100 -125 / HbA1C 6.1 - 6.9%
- DIABETES BLOOD GLUCOSE > 126 / HbA1C > 7%
- HDL > 60
- LDL < 100
- TRYGLYCERIDES < 150
- TOTAL CHOLESTEROL < 200
- BMI normal -18.5 – 24.9
- BMI overweight – 25 – 29.9
- OBESITY \geq 30
- FEMALE WAIST CIRCUMFERENCE (High Risk) > 35 inches
- MALE WAIST CIRCUMFERENCE (High Risk) > 40 inches

CALCULATING BMI:

Formula: weight (lb) / [height (in)]² x 703

www.cdc.gov > **BMI Calculator**

Bale/Doneen Method of Heart Attack & Stroke Prevention

www.baledoneen.com

>IDENTIFY INCREASED RISKS WITH SALIVARY DIAGNOSTICS

Bale BF, Doneen AL, Vigerust DJ. High-risk periodontal pathogens contribute to the pathogenesis of atherosclerosis. *Postgraduate Medical Journal* Published Online First: 29 November 2016. doi: 10.1136/postgradmedj-2016-134279
Open Access online

Han YW. *Fusobacterium nucleatum*: a commensal-turned pathogen. *Current Opinion in Microbiology*. 2015, 23:141-147

ORAL DNA LABORATORIES www.oraldna.com

MyPerioPath[®] test

Pathogen identification and quantification through DNA polymerase chain reaction

Celsus One[®] test

8 Genetic markers related to the body's inflammatory response

“Patient Stratification for Preventive Care in Dentistry”

Giannobile WV, Braun TM, Caplis AK, Doucette-Stamm L, Duff GW, Kornman KS

Journal of Dental Research 2013

Genetic variation was the most common risk factor (30%) for heightened risk of periodontal disease; even more than smoking (18%) and diabetes (10%) combined.

>DAMPEN INFLAMMATION WITH BIOFILM MANAGEMENT

Treat Biofilm Infections Now. Don't Wait for the Calculus!

BIOFILM MANAGEMENT THROUGH SUBGINGIVAL AIR POLISHING – PARADIGM SHIFT

Obliterate biofilm first with low-abrasive powder

Debridement of tooth & pocket

Laser/Adjunctive agents, as indicated

www.Hu-friedy.com/biofilm - AirFlow® research, devices, benefits, news & articles
www.acteon.com

SMART BIOFILM MANAGEMENT DAILY

www.sonicare.com

www.waterpik.com

www.tepe.com

www.cocofloss.com

>ALTER RISK WITH INCREASED OMEGA 3

Elevated CRP stronger predictor of heart attack than elevated cholesterol

Periodontal disease and body mass increase CRP levels

CRP	CARDIOVASCULAR RISK
<1mg/L	Low risk
1-3mg/L	Moderate risk
>3mg/L	High risk

Omega-6 / Omega-3 Imbalance

Most American diets are between 10:1 to 30:1 ratio of Omega-6 to Omega-3

Imbalance Promotes Disease

- Inverse relationship between Omega 3 intake and CRP levels
- Increased Omega-3 Exerts Suppressive Effect Against
- Inverse relationship between Omega 3 intake and CRP levels

3:1 RATIO (3) Omega 6 to (1) Omega 3

Prostaglandins

A dozen different ones exist. Pg2 increases with inflammation, endometriosis & in labor

Omega-6 fatty acids can increase Pg2 production

Omega-3 fatty acids can inhibit Pg2.

>ALTER RISK BY DECREASING PRO-INFLAMMATORY DIETARY CHOICES

Increased consumption of sugar corresponds with increased risk of weight gain, diabetes, heart disease, NAFLD, and gout.

Average consumption of added sugar 300 calories/day i.e. 80g per day

American Heart Association Recommendations:

Women 6 tsp or 24 g daily sugar limit

Men 9 tsp or 36 g daily sugar

Pro-inflammatory Foods:

Added Sugar

Processed Meats

Trans Fats

www.fooducate.com

www.myfitnesspal.com

www.nutritionaction.com Nutrition Action Newsletter

>ALTER RISK WITH TOBACCO CESSATION

Tobacco Cessation 1-800-QUIT-NOW

www.smokefree.gov

70% of current adult smokers say they want to quit

A Cochrane Review study done in 2007 found that nicotine replacement therapies such as the patch, gum or inhaler increased the chances of quitting by 50% to 70%

Motivational Interviewing in Health Care by Rollnick, Miller & Butler

www.webMD.com > 14 Tips for the First Hard Days

>ALTER RISK WITH ANTIOXIDANTS & BOTANICALS TO LOWER INFLAMMATION

ANTIOXIDANTS

A molecule that prevents or delays oxidation and offsets or neutralizes free radicals

www.superfoodly.com - ORAC values

BIOPHOTONIC SCANNER FOR ANTIOXIDANT LEVELS

www.Pharmanex.com

- Free Radicals - Can damage or alter cellular DNA
- Oxidative Stress - An **imbalance** between free radicals & the body's ability to neutralize the damage
- Imbalance due to overabundance of free radicals or inadequate amount of natural antioxidant defenses

Oxidative Stress/Antioxidants & Periodontal Diseases

- Plasma and GCF in periodontal patients had a lower mean total antioxidant capacity, compared with that of control subjects
- Periodontal disease (PD) is associated with lower antioxidant capacity in saliva
- Patients with the worst PD had greatest oxidative injury as measured by ROS in the saliva
- Oxidative tissue damage, induced by ROS, is involved in the pathogenesis of periodontal disease.
- Increased serum antioxidant concentrations are associated with reduced risk of periodontal disease

Oxidative Stress Implicated in Oral Conditions

Periodontal disease	Oral Cancer
Peri-Implantitis	Head & Neck Cancer
Lichen Planus	Xerostomia
Pre-Malignant Lesions	Dental Caries

www.Dentalantioxidants.com

Botanicals/Antioxidants to reduce oral inflammation

- Periosciences topical antioxidants – Gel, mouth rinse and toothpaste. Synergistic effect of antioxidants and essential oils. Anti-inflammatory, anti-bacterial, reduces oxidative stress www.periosciences.com
- PeriActive® Mouthrinse – Synergistic effect of botanicals and antioxidants to reduce pain, swelling & inflammation www.izunoralcare.com
- PerioPatch® Adhesive Patch - to reduce inflammation and improve wound healing, reduce gingival recession www.izunoralcare.com
- Stelllife VEGA or care system – Synergistic effect of botanicals to reduce inflammation, reduce pain and promote healing www.stellalifehealing.com

The results of this in vitro study indicate that diluted EO displayed no detectable detrimental effects on human gingival and PDL fibroblasts, whereas diluted CHX reduced both cell migration and long-term survival

Journal of Periodontology 2013

NUTRITION JOURNAL 2010:

- Plant-based diet protects against chronic oxidative stress-related diseases
- Antioxidants work on their own & induce mechanisms related longevity & cell maintenance and DNA repair

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- Antioxidants can work synergistically therefore wide variety in diet is desirable
- Regardless of antioxidant level, bioavailability determines effectiveness & ultimate clinical relevance
- Antioxidant values vary depending on growing conditions, seasonal changes, differences in manufacturing processes

<https://www.drweil.com/diet-nutrition/anti-inflammatory-diet-pyramid/dr-weils-anti-inflammatory-food-pyramid/> - interactive anti-inflammatory food pyramid

2017 Dirty Dozen List of most pesticide residue:

- | | |
|----------------------------|---------------------------------------|
| ○ Strawberries/Blueberries | ○ Spinach |
| ○ Apples | ○ Tomatoes |
| ○ Nectarines | ○ Sweet Bell Peppers |
| ○ Peaches | ○ Cherry tomatoes |
| ○ Celery | ○ Cucumbers |
| ○ Grapes | ○ (Kale/Collard Greens & Hot Peppers) |
| ○ Cherries | |

2017 Clean 15 List of least likely to have pesticide residue:

- | | |
|--------------|---------------|
| ○ Avocado | ○ Papayas |
| ○ Sweet corn | ○ Kiwis |
| ○ Pineapple | ○ Eggplant |
| ○ Cabbage | ○ Honeydew |
| ○ Sweet peas | ○ Melons |
| ○ Onions | ○ Grapefruit |
| ○ Asparagus | ○ Cauliflower |
| ○ Mangos | |

Adjunctive Supplements Improve Periodontal Outcomes

- % BOP and % plaque lower @ 8 months w/ Fruit & Vegetable daily supplementation
- Juice Plus
Journal of Clinical Periodontology 2011

Protandim

- Activates Nrf2 a protein messenger in cells
- Up-regulates cells to reduce oxidative stress
- Down-regulates pro-inflammatory cells
- 40% reduction in oxidative stress as measured by TBARS in individuals following only 30 days usage

www.protandim.com

>ALTER RISK WITH LIFESTYLE CHOICES

Physical Activity

- 150 minutes (minimally) moderate intensity aerobic activity, or equivalent

- Muscle strengthening twice weekly
- www.heart.org/MyLifeCheck - Click on My Heart Score to assess CVD risk

Table 9: Ways to burn 150 calories

Following are some activities you can do to burn 150 calories. If you do two of these activities every day of the week, you'll burn a little over 2,000 calories per week. These figures are based on a body weight of 150 pounds. If you weigh less than 150 pounds, it'll take you longer to burn the same amount of calories. The opposite is true if you weigh more than 150 pounds.

ACTIVITY	TIME
Biking, 6 mph	38 minutes
Biking, 12 mph	22 minutes
Jogging, 5.5 mph	12 minutes
Running, 10 mph	7 minutes
Walking, 2 mph	38 minutes
Walking, 3 mph	28 minutes
Walking, 4.5 mph	20 minutes
Tennis, singles	23 minutes
Gardening	30–45 minutes
Washing windows or floor	60 minutes
Water aerobics	35 minutes
Swimming, 25 yards/minute	33 minutes
Swimming, 50 yards/minute	18 minutes
Raking leaves	35 minutes
Shooting baskets	35 minutes

Used with permission from Harvard Health Publications

REDUCING THE RISK OF CVD Based upon data reported in the Harvard Health Review
“Managing Your Cholesterol” 2014

- Lowering total Cholesterol by 10% can decrease your heart attack risk by 20% -30% (Example total cholesterol of 230 lowered to 207)
- Walking at least 2 hours a week can cut your chances of dying early from CVD by up to 53%
- If you smoke, quitting reduces your risk of a heart attack by half within a year
- Maintaining a healthy body weight reduces your risk of heart disease by 45%
- Eating about 1,200 mg less of sodium a day can reduce the need for BP treatment by half. It can also decrease deaths from stroke by 22% and those from heart disease by 16%

A HEALTHIER YOU – RESOURCES – handout at www.Karendavis.net

Eat to Live by Joel Fuhrman, MD – develop anti-inflammatory eating habits

Square One - Healing Cancer by Chris Wark – avoid cancer-promoting foods / increase cancer-fighting foods

PATHWAYS TO HEALTH– TAKE AWAYS:

- Know your own health indices
- Use salivary diagnostics to assess risk & treat infections
- Aggressively treat biofilm infections in the mouth
- Reduce prostaglandin & CRP levels through increased Omega 3 and decreased Omega 6 intake
- Eliminate trans fats, limit saturated fats & increase plant-based foods in daily diet
- Slash sugar consumption
- Stop all tobacco use!
- Incorporate topical antioxidants to reduce inflammation and oxidative stress in the oral cavity
- Consider supplements to lower oxidative stress systemically
- Increase physical activity weekly – set goals & be accountable
- Strive for 7 or 8 hours of quality rest nightly