

2022 CDA Presents  
Winning the War against Inflammation

Pam Smith, RDN

Stop the Clock Destination

- ✓ Identify Where You Want to Live Life
- ✓ GPS your Current Location
  - ✓ Assess how you feel
  - ✓ Know your numbers
  - ✓ Learn your genetics
  - ✓ Listen to your Gut – and grow well together
- ✓ Choose Your Best Route to Get from Here to There

Learn your Genetics: Heredity is vital – but not destiny

- ✓ Genes are key in determining how you age and the ailments and diseases you're most vulnerable to getting. Unchangeable, but you can impact their expression.

Top Ten Major Agers

1. Bad Genes and Short Telomeres
2. Chronic Inflammation
3. Oxidation and Inefficient Mitochondria
4. Declining Defenses
5. Toxins
6. Neurotransmitter Imbalance
7. Hormones Gone Haywire
8. Not Enough Nitric Oxide
9. UV Radiation
10. Disuse Atrophy

Signs of Inflammation:

- Mild to chronic pain in your knees, back, hips, and shoulders
- Muscle Weakness and Unexplained, Constant Fatigue
- Weight gain
- Getting sick often
- Irritable Bowel
- Headaches
- Memory Problems, Anxiety, Brain Issues
- Psoriasis and Skin Rashes
- Reduced Saliva and Dry Eye

## Winning the War against INFLAMMATION

*Chronic Inflammation contributes to illnesses that are chronic, costly and corrode our quality of life:*

- ✓ Cancer: If a healthy cell's DNA is damaged by free radicals, it may mutate -- setting the stage for a cancerous tumor or proliferation.
- ✓ Insulin Resistance, Heart disease and High blood pressure
- ✓ Alzheimer's and Premature Aging
- ✓ Arthritis
- ✓ *Periodontal Disease*

### Major Ager: Oxidation & Inefficient Mitochondria

- When mitochondria -- the parts of your cells that turn food into energy -- do their job, they produce oxygen-free radicals that cause dangerous inflammation.
- ✓ The buildup of free radicals contributes to the aging process and to the development of many age-related chronic inflammatory diseases
- ✓ In addition, the older we get, the more *free radicals* are released. Free radicals destroy inflamed tissue through oxidation.
- ✓ Free radicals stimulate inflammation; perpetuate the inflammatory cycle.

### Inflammation at Work

- ✓ It's your natural defense against disease-causing microbes -- your body's way of fighting infection, and it's a lifesaver.
- ✓ Once healing begins, inflammation ceases, body resumes normal functioning.
- ✓ But the immune response (Your Personal Border Patrol) sometimes doesn't shut down, and inflammation becomes chronic.
- ✓ The aging body is less able to turn off the immune response -- in addition to age related increases in Free Radical production
- ✓ Free radicals stimulate inflammation and perpetuate the inflammatory cycle.

### Periodontal Disease: The Chicken or the Egg? ...or Another Cycle?

Inflammation may contribute to periodontal disease risk and progression:

- ✓ Tissue is more susceptible to attack

...OR...Periodontal disease may contribute to inflammation and disease progression:

- ✓ Oral bacterial components enter the bloodstream triggering the liver to make C-reactive proteins.

### How do you know if you have chronic inflammation?

- ✓ "Biomarkers" in the blood are biological signs indicating the presence of inflammation and suggest increased disease risk.

- ✓ One of the most well-known is C-reactive protein (hs-CRP), which correlates with heart attack risk. Concerning when over 1.0; High when over 3.0

### Causes of Inflammation *Is it Genetic or Environmental?*

Inflammatory biomarkers increase with:

- ✓ Periodontal Disease and High blood pressure
- ✓ Smoking
- ✓ Excess body fat OR Chronic dieting
- ✓ Sleep deprivation
- ✓ Sedentary lifestyle
- ✓ Unprocessed Stress

### Inflammatory Eating

- ✓ Sporadic Eating/Nutrient Overload
- ✓ Excess Saturated Animal Fat
- ✓ Overloads of omega-6 vegetable oils
- ✓ Foods virtually unrecognizable to the Human Body:
  - High Fructose Corn Syrup
  - Synthesized Chemicals
  - Hydrogenated Fats/TRANS FAT!!!

### Wellness Busting Inflammatory Fats:

- ✓ Saturated Animal Fat: Negative effects on heart health
- ✓ Solid at room temperature
- ✓ Primarily found in animal fats – also in coconut and palm oil
- ✓ Associated with unhealthy changes in cell membranes
- ✓ Raises levels of “bad” cholesterol and lowers levels of “good” cholesterol
- ✓ Overloads of omega-6 vegetable oils from processed foods batter the brain and may cause persistent inflammation
- ✓ Not “feeding” the Gut microbiota ... resulting in systemic inflammation

### Anti-Inflammatory Diet ?

- ✓ Avoid Processed foods
- ✓ Avoid Added sugars
- ✓ Avoid Red and processed meats
- ✓ Avoid Refined Carbs

*And, start feeding your Microbiota!*

## Listen to your Gut aka your Second Genome

- To the extent that we are bearers of genetic information, more than 99 percent of it is microbial
- This “second genome,” exerts an influence on our health as great and possibly even greater than the genes we inherit from our parents.
- BUT... while your inherited genes are basically fixed, it may be possible to reshape, even cultivate, your second genome.

## Nourishing the Westernized Microbiome

- The “Westernized Microbiome is impoverished by:
  - Prolific use of antibiotics (in health care as well as the food system)
  - Our diet of processed food (which has generally been cleansed of all bacteria, the good and the bad)
  - Our low fiber, low prebiotic diet which starves off healthy microbiota
  - Environmental toxins
  - Less “microbial pressure” — i.e., exposure to bacteria — in everyday life.

## We are living in our Ancestor’s Bodies: *Same Bodies, Wrong Fuel*

- ✓ Thousands of generations of our ancestors survived on “original foods” before facing the “modern” diet.
- ✓ About 90 years ago (around 1930), it all changed – with processed foods...
- ✓ We are now eating foods that are virtually unrecognizable to a body that was designed for a different way of eating and living...

## Same Bodies; New Fuel

Ancestor’s		Modern
65%	Fruits, vegetables, nuts, legumes, honey	17%
35%	Lean game, wild fowl, eggs, fish/seafood	10%
--	Fatty Meat and poultry	18%
--	“New” Foods: Refined cereals/grains, sugar, separated fats, alcohol	55%

## Results?

- ✓ Chronically excessive intake of saturated fat, cholesterol, salt and refined carbs!
- ✓ Decreased intake of fiber, nutrients and phytochemicals.

## Healthy Eating 2022

- ✓ Foods make a health difference at the cellular level -- good and bad.
- ✓ Foods are full of pharmacological agents that serve as protectors against disease and promoters of wellness.

- ✓ The right foods and phytonutrients they contain, release energy and healing
- ✓ What we eat--or don't eat -- can have a profound effect on our energy, mood, appetite, cognitive functions, hormones and immune system

### Living Well, Aging Well takes Eating Well!

- ✓ Minimizing detrimental substances: saturated/trans fats; refined sugars & carb
- ✓ Optimizing a myriad of beneficial nutrients, including:
  - Super Foods: Nutraceuticals
  - Adequate whole food carbohydrate and B vitamins (esp. B6 & Riboflavin)
  - Protein and Calcium
  - Omega 3's
  - Vitamin D3 (cholecalciferol): not "just" a vitamin; it's a neuroregulatory steroidal hormone influencing 3,000 different genes in your body.
  - Synbiotics, Prebiotics and Probiotics

### Super Foods: Nutraceuticals

- ✓ Berries/Tart Cherries
- ✓ Green Leafy Vegetables
- ✓ Mushrooms
- ✓ Tomatoes
- ✓ Onions and Garlic
- ✓ Oats
- ✓ Quinoa
- ✓ Salmon
- ✓ Legumes (including peanuts and soy)
- ✓ Yogurt/Kefir
- ✓ Spices

### Probiotics 1.0: Greek Yogurt or Kefir

- ✓ Ancient, cultured foods rich in probiotics with great promise for living better longer!
- ✓ Excellent source of calcium and protein
- ✓ Thwarts Bad Breath
- ✓ Boost gastrointestinal health & immune function: decrease oxidative stress.

### How to begin?

- ✓ Nourishing MAC's: Microbiota Accessible Carb
- ✓ Protecting the Mucosa from Starving Microbes
- ✓ Go for Probiotics – and Prebiotics

## Eat lots of fiber – your Gut Loves It!

- ✓ Gut bacteria love fiber: Researchers at NYU have linked an increased intake of fiber from beans, fruits, and vegetables with a greater abundance of both Actinobacteria (which produce natural antibiotics) and *Clostridia*, a class of microorganisms that's been linked to decreased risk of colorectal cancer.

## Eat whole grains.

- ✓ Recent study: Healthy adults who consumed 60 g of whole grains every day experienced significant improvements in metabolism, immune function, and microbial diversity.
- ✓ Yes, fiber certainly played a role in those results, but the study authors suggest that whole grains might confer additional anti-inflammatory benefits.

## Whole Grains: Low glycemic and packed with nutraceuticals

- ✓ Whole grains retain more of their natural nutrients, particularly vitamin E, fiber, and B vitamins, than refined varieties.
- ✓ *Top picks: INTACT Whole Grains* -- Barley, oats, quinoa, wheat berries, spelt, farro, brown and wild rice, millet

## Probiotic-Rich Foods

- ✓ Dairy: Yogurt, Kefir, Buttermilk, Aged Cheeses (bleu, Gouda and cheddar) Crème Fraiche, Lassi
- ✓ Fruits /Vegetables: Brined pickles and olives, tangy chutneys, sauerkraut, kimchi, pickled beets, sauerbraten
- ✓ Soy: Miso, tempeh, natto, soy sauce, tamari
- ✓ Nondairy Beverage: Kombucha, Tepache

## Prebiotic-Rich Foods

- ✓ Veggies: Mushrooms, tomatoes, artichokes, alliums, greens, asparagus
- ✓ Fruits: Berries, cherries, bananas
- ✓ Whole Grains: Oatmeal, barley, flaxseed, wheat berries
- ✓ Legumes: Lentils, Dried Beans, Peanuts and Soynuts

## Distinct Differences in Fermented Foods vs. Probiotic Supplements

<u>Fermented Foods:</u>	<u>Probiotic Supplements:</u>
Pros: Externalized digestion	Convenience dosage
Metabolic products of microbes	No added calories
Lower glycemic index of foods	
Cons: Can't be cooked or canned (Need refrigeration)	Unregulated
Microbial composition/density unknown	Many products are mislabeled, contaminated, not viable

## Finding a Probiotic that's right for you

The microbiota is highly personalized – find a product that agrees with your system

## Eat Smart Fats

- ✓ Fats are calorie dense -- and consumption of certain fats ups the risk of disease.
- ✓ However, fat also plays a vital role in the body (particularly the brain) and in foods -- and are not to be avoided.
- ✓ But not all fat is created equal; it's vital to know which are vital, which are not.

## Beneficial Fats:

- ✓ DHA and EPA: Top gun Omega-3 Fat (fish)
- ✓ Linolenic Acid: short chain Omega 3 (flaxseed, green leafys, nuts)
- ✓ Monounsaturated Fats: Olive Oil, avocado, nuts

## Your Brain on Smart Fats:

- ✓ Brain's dry weight is 60 % fat, 25% of that is omega-3 derived fatty acids
- ✓ Omega-3s are essential for proper brain-cell function & balance of all the neurotransmitters that regulate mood, including dopamine/serotonin.
- ✓ Researched as a treatment for everything from depression and attention deficit disorder to bipolar disorder and schizophrenia

## Olive Oil

- ✓ Extra Virgin Olive oil is rich in heart-healthy monounsaturated fats and beneficial plant compounds -- increases the high-density (HDL) lipoprotein levels.
- ✓ EVOO offers beneficial levels of oleocanthal, mimics the effects of anti-inflammatory medications including aspirin and ibuprofen.

## Flaxseed and Chia

- ✓ Unique source of lignans (blocks cancer promotion) and the essential fatty acid: alpha-linolenic acid (ALA)
- ✓ Used to create byproducts that regulate metabolism, blood pressure and cholesterol levels, and immune & inflammatory response.
- ✓ Daily: Have 2 Tbs. freshly ground flaxseed or whole chia in liquid

## Seafood's Omega-3

- ✓ Thins the blood/inhibits blood clots/protects arteries from damage
- ✓ Protects from cognitive decline; Supports immune system
- ✓ Reduces triglycerides and LDL-cholesterol; raises HDL cholesterol
- ✓ Lowers blood pressure; protects against CHD and cancer
- ✓ Serves as anti-inflammatory agent and protects against degenerative changes

### Healthy Omega 3's Highest in Cold Water Fish/Seafood:

- ✓ Salmon, herring, rainbow trout, tuna, sardines, Artic char, striped bass, Alaskan Black Cod, hard shellfish
- ✓ Have at least 12 ounces a week!

### Smart Fats Fight Inflammation -- Recommendation: Eat 5-7 daily servings

- ✓ A serving of a healthy fat could be:
  - 1 teaspoon extra virgin oil or avocado oil
  - 1 tablespoon peanut butter
  - 2 tablespoon nuts, peanuts or soy nuts
  - 1 tablespoon ground flax seed, hemp or chia
  - 1/2 medium avocado

And, at least 12 ounces per week of an omega-3 rich fish or seafood per week

### Spice up your Health!

- ✓ Cinnamon: Insulin for the cells and Brain!
- ✓ Cumin: Super Antioxidant & Immune Booster
- ✓ Chiles and Cayenne: Up Fat-Burning & Immune Function
- ✓ Coriander: Eases anxiety & Aids Sleep
- ✓ Paprika: Anti-Inflammatory
- ✓ Ginger: Universal Medicine
- ✓ Turmeric (Curcumin): Super Hero! Anti-inflammatory, anti cancer; anti-Diabetes
- ✓ Black Pepper: Antioxidant and Antibacterial Digestive Aid
- ✓ MUSTARD: Anti-fungal and antiseptic; Boosts Muscle

### Strategic Eating Summary:

- ✓ Aim for variety.
- ✓ Include as much fresh food as possible
- ✓ Minimize your consumption of processed foods and fast food.
- ✓ Eat an abundance of fruits and vegetables, whole grains and legumes
- ✓ Use extra-virgin olive oil as a main cooking oil
- ✓ Go Fishing for Omega 3's!

### Conclusions – Chronic Inflammation is NOT normal – it's caused by:

- ✓ A diet high in saturated & trans-fat, and other chemical nonfoods.
- ✓ A diet low in fruits, vegetables, whole grains and smart fats.
- ✓ Too much food at the wrong time and too little movement!
- ✓ Lack of Sleep; Lack of Sunshine
- ✓ Stress without Recovery

*Eat your food as your medicine, otherwise you have to eat medicine as your food.*

Steven Jobs (Final Essay)