

# Inflammation and Diet-

Eating to cool or fuel your internal fire



Healthy Columbus Nutrition Webinar  
November, 2016 Ashley Harris, MS, RD, CSO



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## Outline

- + What is inflammation and why should I worry?
- + Inflammation and Diet
  - + Dangers of the Western Diet
  - + A Rainbow of Fruits and Vegetables
  - + The Right Fats
  - + Wholesome Whole Grains
  - + Spice it Up
- + Other things to consider....
  - + Grains & Gluten
  - + Auto-Immune Disorders
  - + Supplements



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## What is inflammation?



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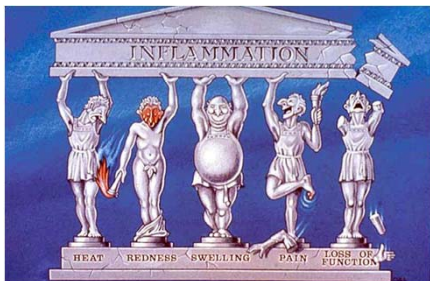
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## What is inflammation?



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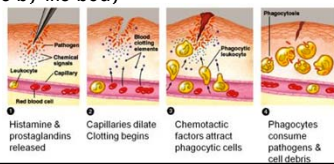
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## What is inflammation?

- ✦ The body's way of protecting itself against disease or injury
  - Vital to our survival
  - Usually goes away once body has healed = Acute
- ✦ When injured, cells produce chemicals (cytokines) which trigger a response by the body



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## Why should we worry?



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### Chronic Inflammation

- ✦ When inflammatory response is prolonged and does not shut off = **Chronic Inflammation**
  - Due to persistent threat (disease/injury) to cells and body
  - Inappropriate body response (usually seen with auto-immune disorders)
- ✦ Opposite effect of acute inflammation
  - Causes further tissue breakdown
  - Makes body susceptible to other health threat
- ✦ Thought to be the root cause of **MANY** of our chronic diseases seen today (cancer, heart disease, Alzheimer's disease, etc..)

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### Chronic Inflammation

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### Chronic Inflammation

- ✦ Hard to recognize
  - Usually has no symptoms
- ✦ Most common test for chronic inflammation is CRP (C-Reactive Protein) blood test
  - <1 = low risk
  - 1-2.9 = moderate risk
  - 3+ = high risk
  - 10+ = more testing may be needed to determine cause (more significant factors in play)

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## What can we do about it?



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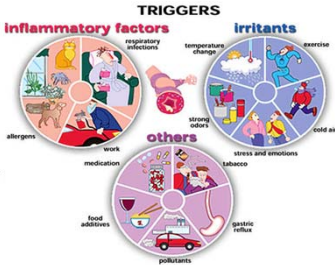
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## What can we do about it?

- ✦ Lifestyle change can have HUGE impact on chronic inflammation
- ✦ Eliminate sources creating inflammation
  - Manage any underlying medical causes (i.e. Crohn's disease)
  - Smoking/Alcohol
  - Obesity (fat cells produce PRO inflammatory chemical)
  - Poor diet
  - Stress

**TRIGGERS**



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## What can we do about it?

- ✦ Incorporate habits which reduce inflammation
  - Exercise
  - Stress management
  - ANTI-inflammatory diet



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## inflammation and Diet



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## Dangers of the Western Diet

- × Western Diet raise blood sugar and fat levels to a point that stresses the body
  - Body thinks under attack and produces an inflammatory response
  - Eating these foods frequently results in constant inflammation in the body
- × Most foods low in nutrients and high in unhealthy fats, sugar and sodium



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## Dangers of the Western Diet

- × Includes:
  - fast foods,
  - processed foods,
  - foods with refined sugars and grains,
  - foods high in saturated and trans fats,
  - excess calories



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### A Rainbow of Fruits and Vegetables

- × Full of vitamins, antioxidants, phytochemicals, other health-promoting compounds
  - **ALL reduce inflammation!!**
  - Each F/V has unique combination of these so important to **get variety!!**



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### A Rainbow of Fruits and Vegetables

- × Because health benefits/nutrients often associated with color, try to get in a rainbow EACH DAY!
  - See Healthy Columbus website for Eating the Rainbow video and resources



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### A Rainbow of Fruits and Vegetables

- × **RECOMMENDATION:** Aim for **5-9 servings of fruits and vegetables per day**
  - 1 small or medium fresh fruit (apple, orange, banana, peach, nectarine)
  - 1 cup cut melon
  - 17 grapes
  - ¼ cup berries (1 cup strawberries)
  - ½ cup cooked or raw vegetables
  - 1 cup leafy greens

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### A Rainbow of Fruits and Vegetables

- Some F/V have strong anti-inflammatory properties
  - Citrus fruits (oranges, grapefruits, lemons, limes, etc.)
  - Berries (blackberries, raspberries, strawberries, blueberries, etc.)
  - Cherries (especially tart cherries)
  - Foods rich in **Carotenoid** phytochemicals (red, orange, yellow, and dark leafy green foods)
  - Foods rich in **Quercetin** phytochemicals (apple skins, red onion)

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### The Right Fats

- Some fats are pro-inflammatory and should be limited or avoided
  - Trans fats – AVOID
  - Saturated fats – LIMIT
- Other fats are anti-inflammatory and should be included daily
  - Omega-3 polyunsaturated fats
  - Monounsaturated fats

**GOOD FATS**

vs.

**BAD FATS**

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Eat less	Eat in moderation	Eat more
<b>Saturated fats:</b> Butter, cheese, ice cream, whole milk, red meat, coconut oil, palm oil	<b>Polyunsaturated fats (rich in omega-6):</b> Safflower oil, sunflower oil, corn oil, mixed vegetable oil,	<b>Monounsaturated fats:</b> Olive oil, canola oil, almonds, pistachios, pecans, hazelnuts, macadamia nuts, avocado
<b>Trans fats:</b> Margarine, vegetable shortening, partially hydrogenated vegetable oil, deep fried foods, fast foods, commercial baked goods		<b>Polyunsaturated fats (rich in omega-3):</b> Fatty, cold-water fish (salmon, mackerel, sardines, anchovies, herring), fish oil supplements, flax seed, walnuts

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### The Right Fats

- × **RECOMMENDATION:** Aim for **5-7 servings of healthy fats per day**
  - 1 teaspoon unsaturated oil (olive/canola oil)
  - 2 teaspoons peanut butter
  - 2 Tablespoons nuts
  - 1 Tablespoon ground flax seed
  - ½ medium avocado



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### The Right Fats

- × Omega-3 fats have very potent anti-inflammatory properties
  - Comes primarily from EPA (eicosapentaenoic acid)
  - Cold water fish (see chart) or fish oil supplements best choice
    - Make sure get good brand of Fish Oil- can speak to MD or RD (Pure Pharma, Trader Joe's, examples of good ones)
  - Flaxseed and walnuts only have fraction of EPA
- × **RECOMMENDATION:** Try to eat **at least 1 serving (3 ounces) of an omega-3 rich fish every day**



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### Wholesome Whole Grains

- ✦ Eating whole grains associated with decreased inflammation
- ✦ Whole grains contain vitamins, minerals, phytochemicals, healthy fat and fiber
  - These are lost when grains are refined
- ✦ Popular whole grains include barley, bulger, buckwheat, flax, millet, oats, rice, wheat, quinoa...



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### Wholesome Whole Grains

- ✦ **RECOMMENDATION:** Eat **3-5 servings per day of whole grain products**
  - 1 slice whole grain bread
  - 1/2 whole wheat English muffin
  - 1/2 cup cooked grains (brown rice, oatmeal, bulger, quinoa)
  - 1 cup ready-to-eat whole grain breakfast cereal
  - 5-7 whole grain crackers



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### Spice it Up

- ✦ MANY herbs and spices contain anti-inflammatory properties
- ✦ Some such as ginger, cinnamon, chili and turmeric\* are inflammation fighting all stars
  - \*we do not the phytochemical in turmeric (curcumin) well but if you consume with black pepper increases absorption by up to 2000%!
- ✦ **RECOMMENDATION:** Try to **include as many herbs and spices as possible in diet**




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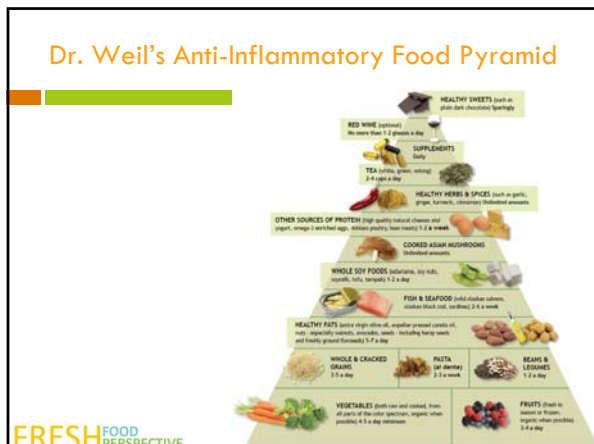
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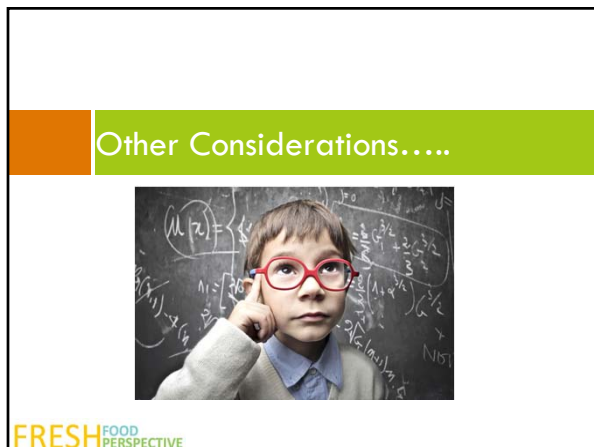
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### Grains

- × Some theories say increased grain consumption is cause of increase in chronic disease, especially ones associated with the brain (Alzheimer's)
  - Evidence at this point shows a DIRECT relationship between REFINED grains and inflammation
  - Conflicting for whole grains (MOST show INVERSE relationship between WG consumption and inflammation)
  - Impact of WG and overall carbohydrate intake may vary by individual and more research is needed
- × **RECOMMENDATION: Avoid refined grains.** If you choose to avoid whole grains focus on incorporating other healthy complex carbohydrates (i.w. sweet potatoes, fruit, etc.)

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## Gluten



- ✦ Evidence supports "gluten sensitivity" in some people, NOT all
  - This is because gluten proteins are not completely broken down by body and can be perceived as an invader and trigger an auto-immune response
  - Symptoms can be broad (brain fog, bloating/GI symptoms, joint pain, headaches, etc.)
  - No good tests at this point to determine gluten sensitivity (gluten intolerance)
- ✦ Some need to avoid gluten (i.e. Celiac Disease or gluten allergy, some auto-immune disorders)
- ✦ **RECOMMENDATION: Avoid gluten when medically warranted. If suspect gluten sensitivity, work with RD and trial Gluten Free diet to see if symptoms improve (and/or return on re-introduction into diet)**

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## Auto-Immune Disorders



- ✦ Some auto-immune diseases cause chronic inflammation in the body and may be worsened by diet choices
  - Helpful to work with RD to determine sensitivity, trial elimination diets and devise balanced meal plans
- ✦ Gluten free may be helpful for Rheumatoid Arthritis and Multiple Sclerosis
- ✦ Nightshades may trigger inflammation in people with arthritis, Rheumatoid arthritis or other AI disorders
  - Include tomatoes, eggplants, peppers, potatoes
- ✦ **RECOMMENDATION: If you have an AI disorder and suspect some foods may be triggering inflammation/pain/symptoms, work with RD to trial elimination diet to see if they improve. Nightshades and gluten DO NOT need to be avoided by most!**

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## Supplements



- ✦ Some have shown promise in helping reduce inflammation
  - EPA/Omega-3 (found in fish oil) and curcumin (phytochemical in turmeric) supplements being studied extensively
  - Others often recommended include Coenzyme Q10, vitamin D, selenium, antioxidants, etc.
- ✦ Like all supplements, need to ensure SAFETY for each supplement and individual (potential interactions, quality brands, etc)
  - Natural Medicines Comprehensive Database (determines safety, efficacy, potential interactions, dosage)
  - Consumer Labs (determines safe, reliable and affordable supplements)
- ✦ **RECOMMENDATION: Talk with your MD or RD to determine which supplements may be appropriate for you and to ensure safety.**

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Questions??



THANK YOU!!

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