

# Food Beyond the Surface

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**Rheumatology Care Consultants, PLLC**

Founder and Medical Director

**MDNutrics, LLC**

Affiliations

Abington Health Lansdale Hospital

# Nothing wrong with being closer to nature

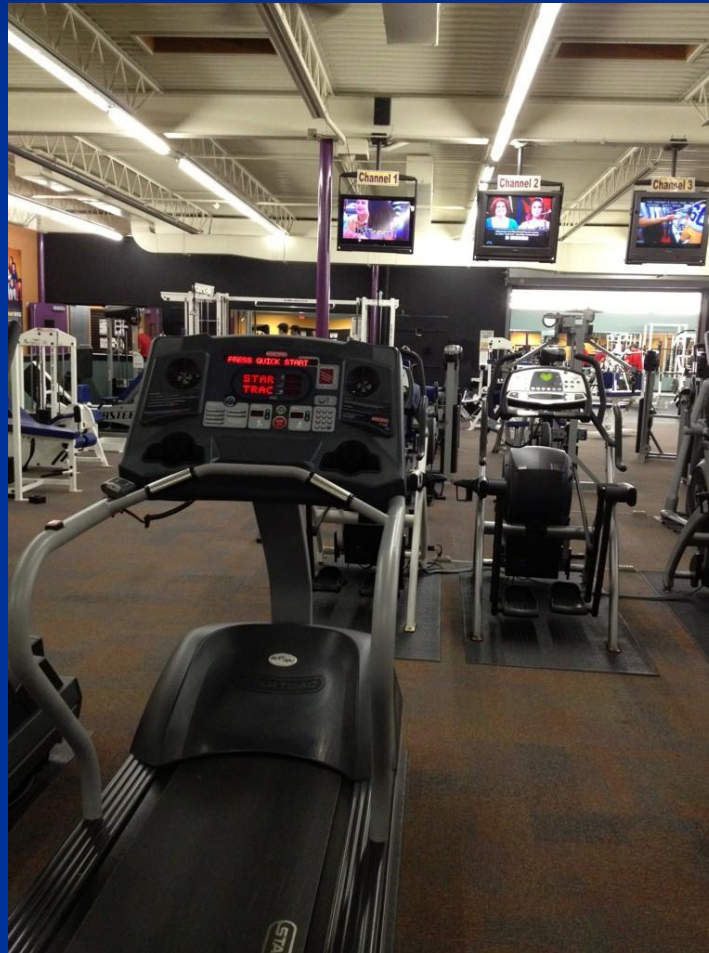


# Take charge of your health

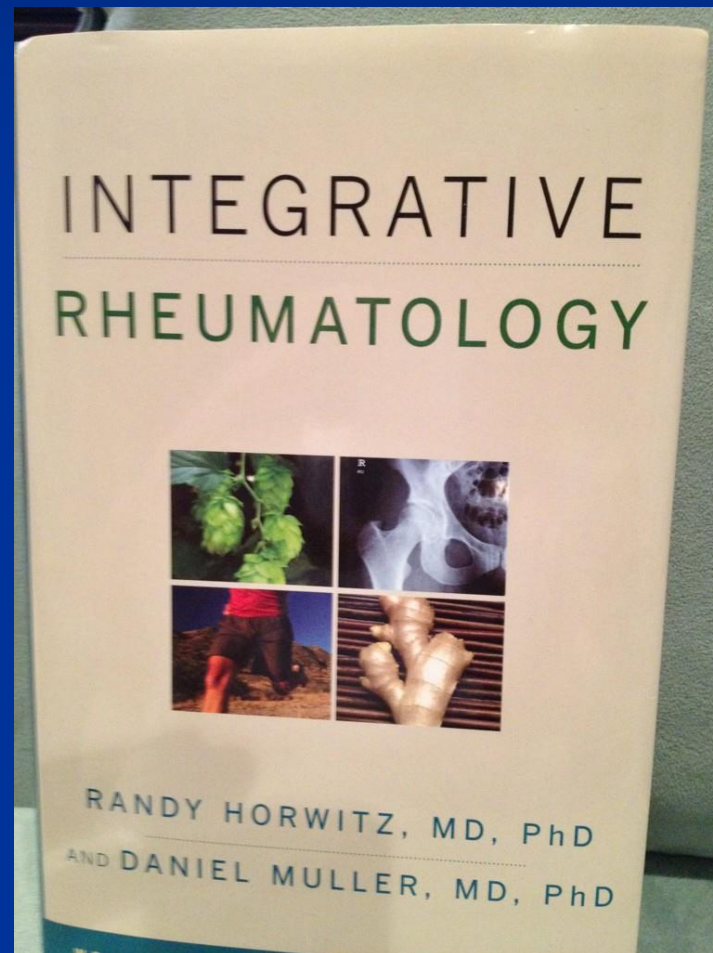
Obesity doesn't run in family. The main problem is nobody runs in family.



# Better choice



# Integrative Rheumatology



# Apple Picking



# “Integrative Rheumatologist”

- Passionate about helping patients beyond diagnosis and treating autoimmune diseases
- Focus of my practice is NOT to only to prescribe medication but help achieve healthy goals in life
- Achieving wellness through patient education, incorporating healthier lifestyle and nutrition
- Use of social media and internet

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Dr Farhan Tahir MD, FACR.. Timeline Now

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## Dr Farhan Tahir MD, FACR ; Integrative Rheumatologist

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Community Page about Rheumatology

Diplomate American Board of Internal Medicine and Rheumatology. An Integrative Rheumatologist who combines conventional medicine and nutrition for optimal wellness & lifestyle



56



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Dr Farhan Tahir MD, FACR ; Integrative Rheumatologist shared Global Healing Exchange's photo.

Natural medicines



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# Farhan Tahir MD, FACR

@iRheum

*Integrative Rheumatologist; Diplomate American Board of Internal Medicine and Rheumatology. Focus on Integrative Rheumatology and Anti-inflammatory Nutrition*

Doylestown, PA <http://www.facebook.com/ftahirmd>

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## Tweets

- Farhan Tahir MD, FACR** @iRheum 21 Sep  
Prolia, another choice for men suffering from [#osteoporosis](#). RT [@reuters](#): FDA approves Amgen's Prolia for new use [reut.rs/Vk5eDA](http://reut.rs/Vk5eDA)  
Expand
- LymeRFL** @LymeRFL 20 Sep  
[@iRheum](#) R there any of my friends out there that will RT to UR Followers about the FILM "Last Ounce of Courage" A must SEE Movie!!!  
 Retweeted by Farhan Tahir MD, FACR  
Expand
- Farhan Tahir MD, FACR** @iRheum 20 Sep  
[#Ankylosing](#) Spondylitis related bone changes are prevented by regular use of NSAIDS, but risks cannot be ignored too.  
[medpagetoday.com/Rheumatology/B...](http://medpagetoday.com/Rheumatology/B...)  
Expand
- Farhan Tahir MD, FACR** @iRheum 20 Sep  
[#Green](#) Tea well known for antioxidant properties. Research shows promising role in [#osteoporosis](#) & preventing bone loss  
[usatoday.com/news/nation/st...](http://usatoday.com/news/nation/st...)  
Expand
- Farhan Tahir MD, FACR** @iRheum 11 Sep  
Patients with [#OA](#) [#Fibromyalgia](#) and [#chronicpain](#) syndrome

# Social Connection

- [www.facebook.com/ftahirmd](http://www.facebook.com/ftahirmd)
- <http://twitter.com/irheum>
- [www.irheum.org](http://www.irheum.org)
- [www.mdnutrics.com](http://www.mdnutrics.com)
- [www.rheumatologycare.com](http://www.rheumatologycare.com)
- Email: [irheum@gmail.com](mailto:irheum@gmail.com)

# Food beyond surface

- Every food is not created equal
- Main attributes
  - Fullness and Satiety factor
  - Nutrition value
  - Calorie load
  - Glycemic Load
  - Inflammation factor
- High calorie food has unfair advantage
- Get smarter what you eat
- Look for better alternatives

# MDNutrics Mission

## [www.mdnutrics.com](http://www.mdnutrics.com)

- Nutrition for optimal health and wellness
- Personalized for specific health needs
- Less dependence on medications
- Food with highest attributes
  - High nutrition value
  - High satiety and fullness
  - Low glycemic index
  - Low in inflammation factor
  - Optimal ratio between carbs, fats and protein
- Motivate for healthy lifestyles



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ON ALL ORDERS!  
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### Banner Title 3

Elementum congue libero ut suscipit, Maecenas nec erat id eros ullamcorper luctus. Aliquam justo ante, viverra quis iaculis quis, interdum.

LEARN MORE

 **WHAT IS PHYSICIAN GRADE?**

 **SAVE NOW! SPECIAL PACKAGES**

 **VITAMIN GUIDE VIEW OUR SELECTION**

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## Why Physician Grade Vitamins Make a Difference

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# Tips “Smarter and Better” choices

- Ability to satisfy appetite “Fullness Factor”
- Carries adequate nutritional value” Nutrient Density Value”
- Avoid calorie packed food with less nutrition
- Identify “Glycemic load”
- Identify contribution to “Inflammation”
- Don’t forget value of hydration
- [www.nutritiondataself.com](http://www.nutritiondataself.com)

# Steps to “Smarter and Better”

- Goals: Weight loss, optimal health or health goal
- Daily Record: Keep track
- Determine calorie busters in your diet
- Make changes for better alternative
- Repeat and improve' every step counts
- Keep sight of your goal
- Be realistic and practical
- Don't try too hard

# Nutrition Data: Helpful Resource

**SELF NutritionData** know what you eat

enter food name in [A]

Tools ▾ Topics ▾ MyND ▾ Blogs ▾ SELF ▾ Help ▾

**Sign In**  
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**Free Newsletter**  
Get the latest in nutrition news, plus tips for staying healthy. [▶ See Archive](#)

**Did you know?**  
Eating broccoli can interfere with certain medications?

**Happy New Year!**  
Resolve to eat healthier in 2012»

**NUTRITION MANAGEMENT TOOLS**

**DIET & WEIGHT LOSS**  
What kind of diet is right for you?

**DIABETES**  
What's a low glycemic diet?

**HEART HEALTH**  
What's a heart healthy diet?

**HEALTHY DINNER TONIGHT**

RSS IN PARTNERSHIP WITH

# Learn to read labels

FEATURED FOOD FACT

## You can learn a lot from a label

On Nutrition Data, you'll find detailed nutrition information, plus unique analysis tools that tell you more about how foods affect your health and make it easier to choose healthy foods.

### Black Eyed Peas

Said to bring luck when eaten on New Year's Day, black-eyed peas are high in protein and fiber and low in fat.

#### Nutrition Facts

Serving Size 172 g

##### Amount Per Serving

**Calories** 200 Calories from Fat 8

% Daily Value\*

**Total Fat** 1g 1%

Saturated Fat 0g 1%

Trans Fat

**Cholesterol** 0mg 0%

**Sodium** 7mg 0%

**Total Carbohydrate** 36g 12%

Dietary Fiber 11g 45%

Sugars 6g

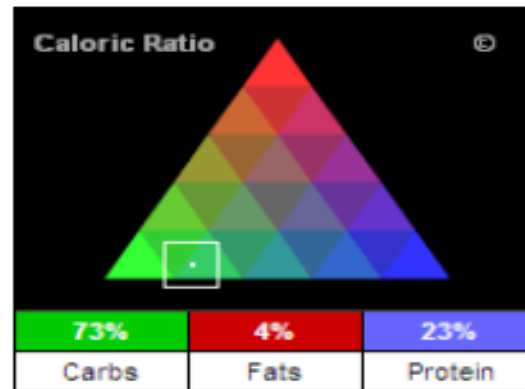
**Protein** 13g

Vitamin A 1% • Vitamin C 1%

Calcium 4% • Iron 24%

\*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

**nutritiondata.com**



What is this?

Estimated Glycemic Load

**13**

0 250

Typical target total is 100/day or less

What is this?

Inflammation Factor

**-18**

mildly inflammatory

- 0 +

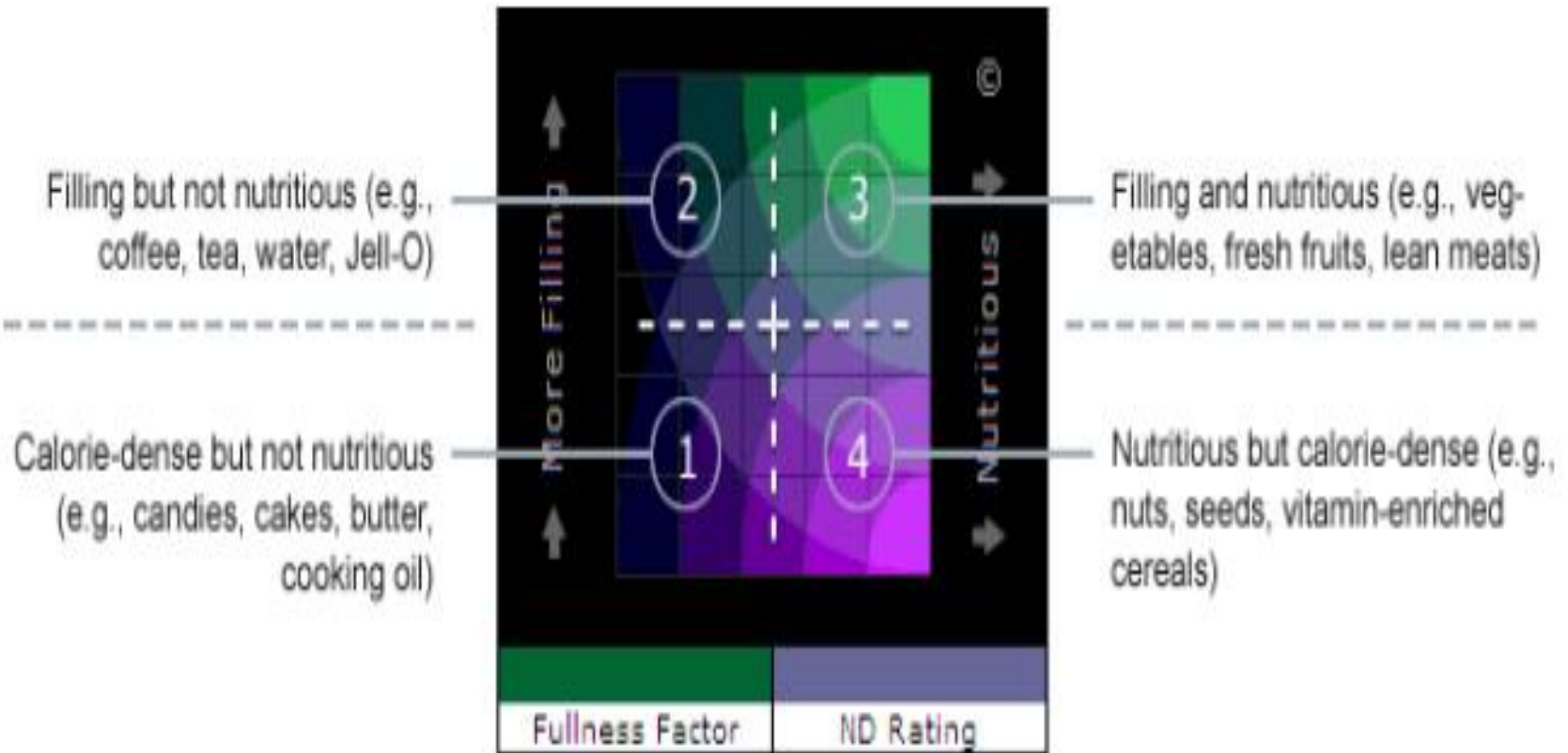
Typical target net is 50/day or higher

What is this?

# MDNutrics Mission

- Food for optimal health
- Focused on specific health needs
- Less dependence on medications
- food with highest nutrition value
- High satiety and fullness
- Low glycemic index
- Low in inflammation factor
- Balance between three main categories, carbs, fats and protein

# Nutritional Target Map™



# Fullness Factor

## Fullness Factors for Common Foods

Food	FF
Bean sprouts	4.6
Watermelon	4.5
Grapefruit	4.0
Carrots	3.8
Oranges	3.5
Fish, broiled	3.4
Chicken breast, roasted	3.3
Apples	3.3
Sirloin steak, broiled	3.2
Oatmeal	3.0
Popcorn	2.9
Baked potato	2.5
Lowfat yogurt	2.5
Banana	2.5
Macaroni and cheese	2.5
Brown rice	2.3
Spaghetti	2.2
White rice	2.1
Pizza	2.1
Peanuts	2.0
Ice cream	1.8
White bread	1.8
Raisins	1.6
Snickers Bar	1.5
Honey	1.4
Sugar (sucrose)	1.3
Glucose	1.3
Potato chips	1.2
Butter	0.5



More filling  
per Calorie

Less filling  
per Calorie



# Nutrition Fact Labels

## Nutrition Facts

Serving Size 125g

Amount Per Serving

**Calories** 65      Calories from Fat 2

**% Daily Value\***

**Total Fat** 0g      0%

Saturated Fat 0g      0%

Trans Fat

**Cholesterol** 0mg      0%

**Sodium** 1mg      0%

**Total Carbohydrate** 17g      6%

Dietary Fiber 3g      12%

Sugars 13g

**Protein** 0g

Vitamin A 1% • Vitamin C 10%

Calcium 1% • Iron 1%

\*Percent Daily Values are based on a 2,000 calorie diet.  
Your daily values may be higher or lower depending on your calorie needs.

[NutritionData.com](http://NutritionData.com)

If a 200-Calorie serving provides...

The food is considered to be...

less than 2% of the Daily Value → very low in that nutrient

less than 5% of the Daily Value → low in that nutrient

more than 20% of the Daily Value → high in that nutrient

more than 40% of the Daily Value → very high in that nutrient

[www.nutritiondataself.com](http://www.nutritiondataself.com)

# Nutrition Data's Opinion

## NutritionData's Opinion

 What is this?

Weight loss: ★★★★★

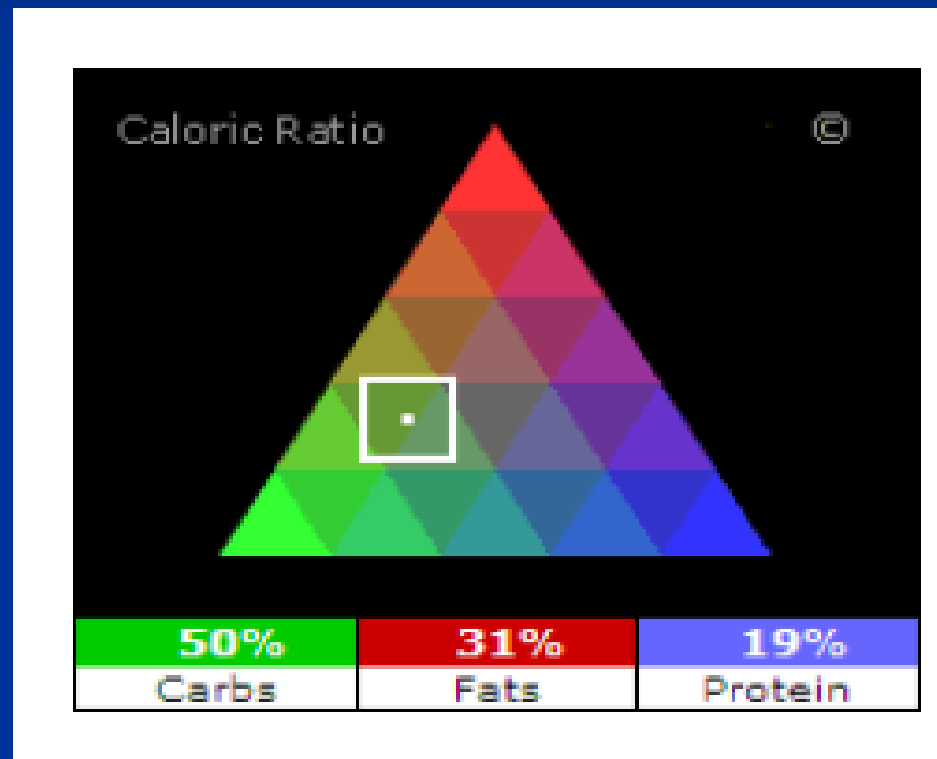
Optimum health: ★★★★★

Weight gain: ★★★★★

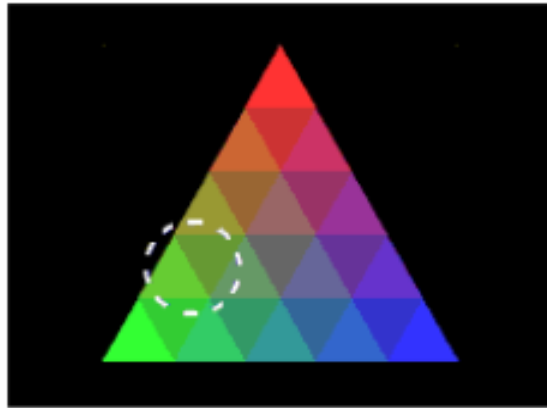
**The good:** This food is very low in Saturated Fat, Cholesterol and Sodium. It is also a good source of Folate, Iron and Potassium, and a very good source of Dietary Fiber, Vitamin C and Manganese.

**The Bad:** A large portion of the calories in this food come from sugars.

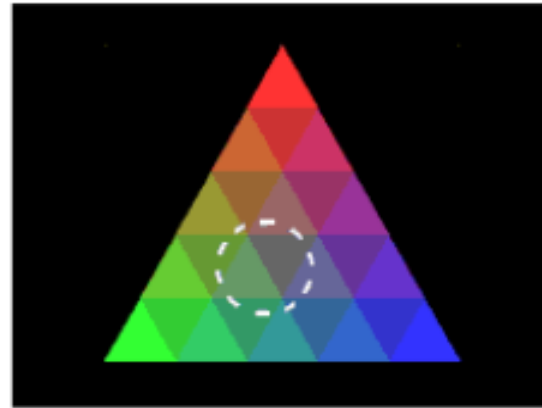
# Caloric Ratio Pyramid™



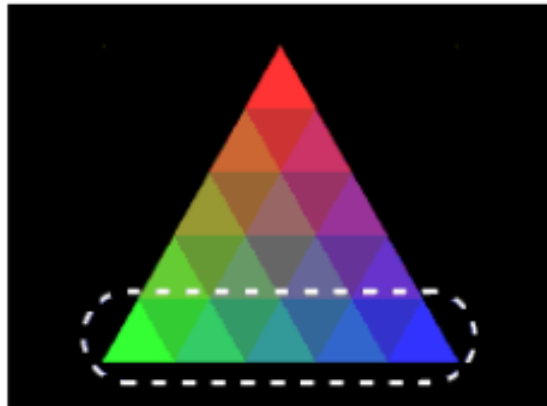
# Caloric Ratio Pyramid™



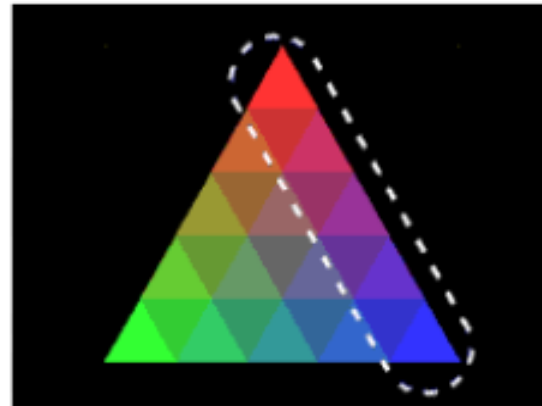
Traditional 60:30:10



Balanced 40:30:30 (e.g., Zone™ Diet)



Low-Fat



Low-Carb (e.g., Atkins™ Diet)

# Glycemic Index & Glycemic Load

GI and GL for Common Foods				
Food	GI	Serving Size	Net Carbs	GL
Peanuts	14	4 oz (113g)	15	2
Bean sprouts	25	1 cup (104g)	4	1
Grapefruit	25	1/2 large (166g)	11	3
Pizza	30	2 slices (260g)	42	13
Lowfat yogurt	33	1 cup (245g)	47	16
Apples	38	1 medium (138g)	16	6
Spaghetti	42	1 cup (140g)	38	16
Carrots	47	1 large (72g)	5	2
Oranges	48	1 medium (131g)	12	6
Bananas	52	1 large (136g)	27	14
Potato chips	54	4 oz (114g)	55	30
Snickers Bar	55	1 bar (113g)	64	35
Brown rice	55	1 cup (195g)	42	23
Honey	55	1 tbsp (21g)	17	9
Oatmeal	58	1 cup (234g)	21	12
Ice cream	61	1 cup (72g)	16	10
Macaroni and cheese	64	1 serving (166g)	47	30
Raisins	64	1 small box (43g)	32	20
White rice	64	1 cup (186g)	52	33
Sugar (sucrose)	68	1 tbsp (12g)	12	8
White bread	70	1 slice (30g)	14	10
Watermelon	72	1 cup (154g)	11	8
Popcorn	72	2 cups (16g)	10	7
Baked potato	85	1 medium (173g)	33	28
Glucose	100	(50g)	50	50

# Estimated Glycemic Index



The Estimated Glycemic Load was approximated by comparing this food's nutrient profile to that of similar foods for which glycemic values have been measured.



# InflammationFactor.com

Home of the IF Rating™ system

HOME

IF RATING SYSTEM

RESEARCH

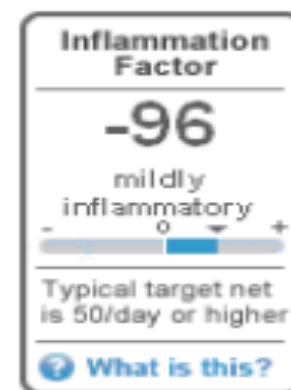
RECIPES

ABOUT THE AUTHOR



The IF Tracker iPhone app lets you search for foods, browse by category, analyze recipes, and track daily intake. Includes IF Ratings for 2,000 foods along with information on calories, fat, protein, and carbohydrates.

[Get IF Tracker for iPhone](#)



#### IF Positives

This food contains known anti-inflammatory nutrients, including monounsaturated fat, selenium, docosahexaenoic acid (DHA) and folate.

#### IF Negatives

This food contains known inflammatory nutrients, including arachidonic acid and saturated fat.

The IF Rating™ provides an estimate of this food's effect on inflammation.

# What is Inflammation?

- Inflammation is immune system's response to injury or infection
- Autoimmune disease are result of an unhealthy disordered immune system
- Inflammation results in pain, swelling, heat and redness of joints and tendons

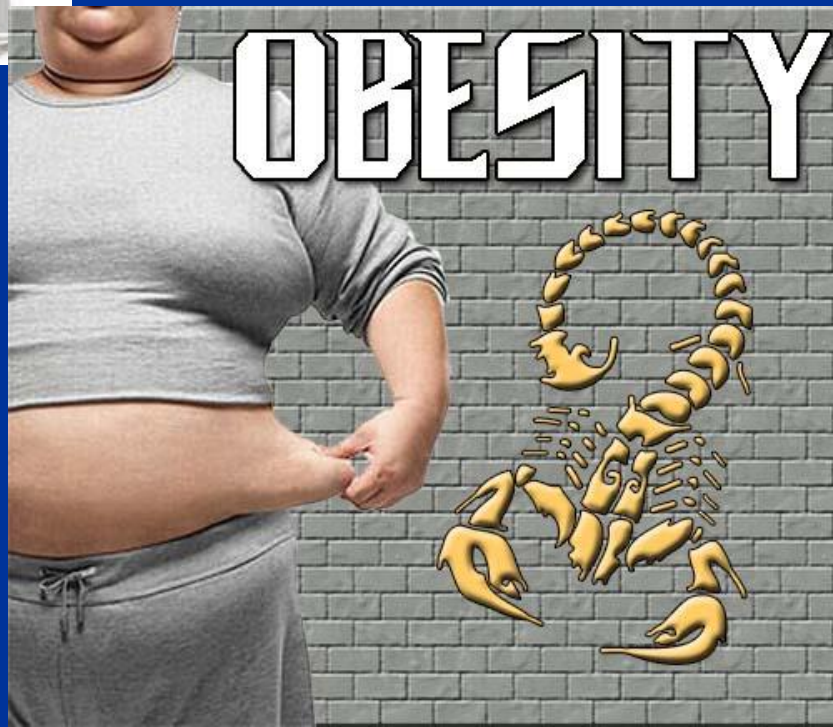
# The Secret Killer



# Role of inflammatory in arthritis

- Inflammation is a cascade of biological process which leads to harmful chemicals
- Cytokines like CRP, (IL)-1, IL-6, tumor necrosis factor (TNF)-alpha
- Cells produce reactive oxygen species (ROS) harmful to cartilage and joint structures leading to destruction

# Many faces of inflammation



# Chronic Inflammatory Diseases

- More than 40 distinct diseases
- Affects more than 24 million Americans
- Directly cause: Asthma, Cohn's disease, Rheumatoid arthritis, SLE, Celiac disease
- Indirect Cause: Coronary artery disease, atherosclerosis, obesity, diabetes, cancer

# Evolution of Nutrition

- Primitive humans; wild game or vegetarian
- Refining; loss of fiber and micronutrients
- Western diet
- 75% decline in fiber
- 5 fold increase in sugar
- 4 fold increase in fats
- More omega-6s and less omega-3s

# Overfed and Undernourished

- “Snack” and “fast” food: high fat, high sugar
- Increase weight, decreased essential nutrients
- 60% Americans: high waist/hip ratio (WHR) and BMI
- Diabetes, cancer, metabolic syndrome, heart and autoimmune diseases are linked to western diet

# Standard American Diet; S.A.D.



- High *red and processed animal meats, saturated fats, trans fats, sweets*, desserts, fried food and refined grains and low in fiber
- Low in low-glycemic carbohydrates, fruits, vegetables, fish and legumes
- 12 yr relative risk of colon cancer 1.46, 8 yr heart disease risk 64%, 1.3 RR of all cause mortality

# Nutrition and Autoimmunity

- Inflammation and immune dysfunction starts in the intestinal track
- Presence of antibodies of intestinal bacteria like *Proteus mirabilis* have been linked to RA
- Lower antigen load, intake of vegetables, fruits and dietary vitamin C reduce risk, e.g. Norwegian and Mediterranean diets

# High Glycemic Carbohydrates

- Negative impact on lipid and sugar metabolism
- Doubles reactive oxidative radicals production; increases peripheral vascular disease
- Depressed immunity and impairs white blood cell function
- Autoimmunity : Crohns disease, Rheumatoid arthritis

# Impact of Unhealthy Fats

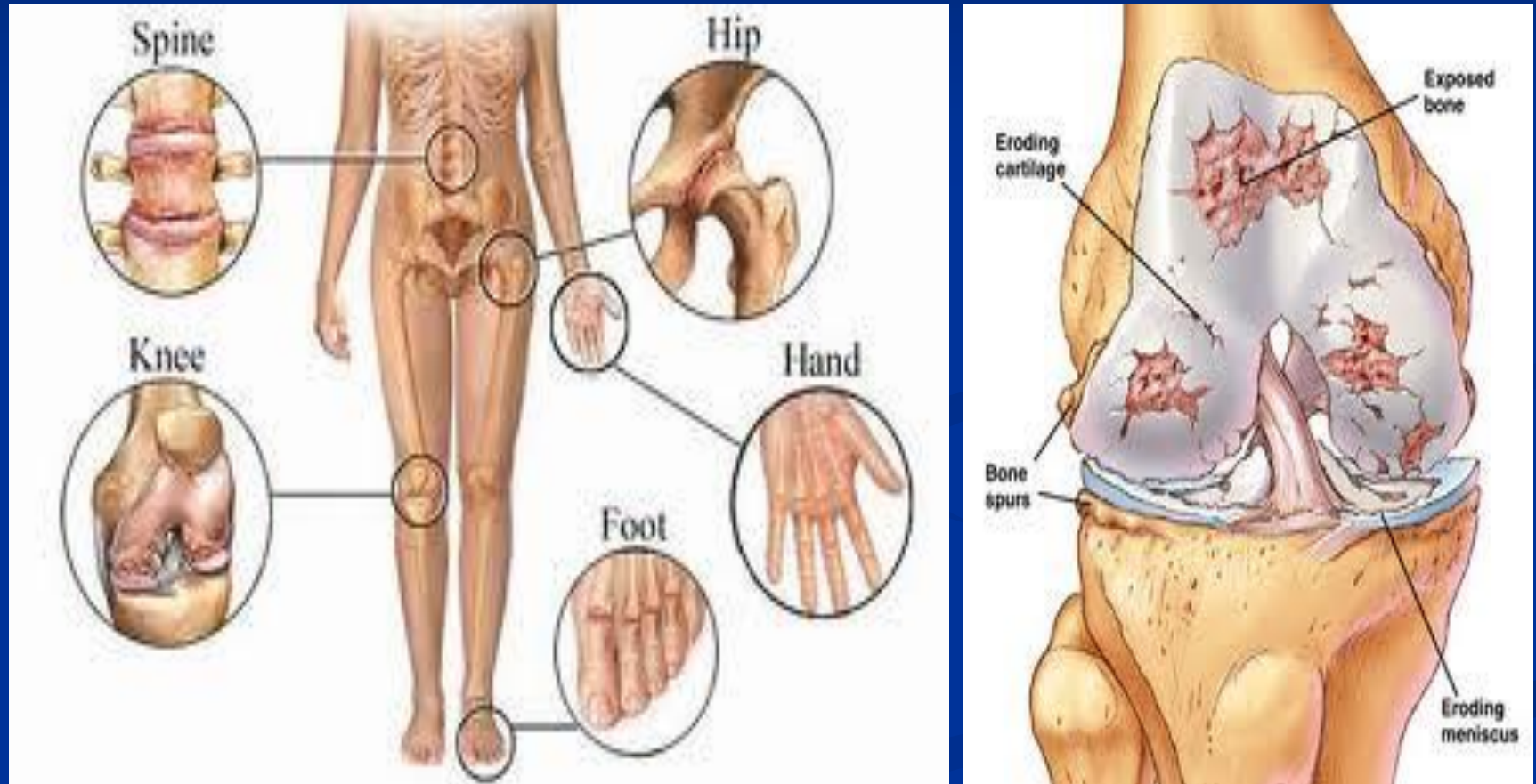
- Trans and saturated fats are associated with depressed immunity
- Doubles risk cataract
- Atherosclerosis
- Heart arrhythmias
- Cancers
- Decreases bone mineral density osteoporosis

# Rheumatoid arthritis



- RA is a common autoimmune arthritis
- 1 in 100 persons, affects women more than males
- Cause is combination of genetic makeup and environmental cause or infection
- Main stay of treatment is allopathic medications
- Use of anti inflammatory diet and complementary therapy can be of immense help

# Osteoarthritis



# Osteoarthritis and Nutrition

- Common form of arthritis
- Knees, hips, hands and spine
- Loss and damage of cartilage and joint structure
- Leads to loss of smooth gliding, pain and swelling, improves with rest
- Weight loss, conditioning exercises with anti inflammatory nutrition has great potential

# Role of diet in arthritis

- Anti inflammatory approach
- Anti oxidants
- Probiotics
- Food sensitivities, dairy products, wheat
- Herbal supplements

# Anti-inflammatory approach

## Diet and supplements

- Mediterranean diet; vegetables, whole grains, nuts
- Vitamin B6 and folic acid
- Omega-3 , EPA, DHA
- Anti oxidants
- Probiotics
- Herbal, Spices
- Bone supplements: Vitamin D, Calcium, Boron

# Polyunsaturated fatty acids

## Omega 3 Fatty acids

- EPA and DHA
- *Resolvin* : anti inflammatory agent
- RA, Lupus and Ankylosing spondylitis
- Pain, morning stiffness, painful and tender joints
- Average recommended dose , EPA 30mg/kg, DGA 50mg/kg or total 3.5g/day

# Omega 6 versus Omega 3

- In general, omega-6 fats tend to
  - promote inflammation
  - constriction of the blood vessels
  - formation of blood cell clots
- Omega-3 fats are
  - anti-inflammatory
  - relax the blood vessels
  - protect against blood cells aggregating
  - prevents clots

# Fat Guidelines

- Coconut oil, canola, or olive oil (extra virgin is best) for cooking
- Salad dressing with extra virgin olive oil, and red wine or balsamic vinegar
- Flax seeds and oil, sardines, ocean salmon, and walnuts
- Use a daily supplement of 1-4 grams of high EPA/DHA fish oils

# Decrease pro inflammatory foods

- Trans fats, arachadonic acid and sugar may promote inflammation
- Commercial meat and eggs are rich sources of arachidonic acid
- Omega-3 eggs and pasture-fed beef have lower amounts of arachidonic acid

# Fats for life



- Extra virgin olive oil
- Expeller-pressed organic canola oil
- Nuts, Walnut and hazelnut oils in salads
- Avocados
- Seeds - freshly ground flaxseed.
- Cold water fish
- Dark roasted sesame oil as a flavoring for soups and stir-fries
- Superior quality supplements

# Protein Guidelines

- Have protein with each meal
- Limit red meat
- Prefer free-range, grass-fed beef or lamb
- Avoid charring/browning proteins/meats
- Use free-range eggs; avoid browning the eggs
- Avoid lunch meats with sodium nitrate

# Protein Guidelines

- Walnuts ; good protein and omega-3 fats source
- Nuts and seeds (pumpkin, sunflower)
- Nut butters ; almond, cashew, macadamia
- Soy products good sources of protein
- Organic milk products I if not lactose intolerant
- Milk substitutes, use soy, rice, almond, or oat milk

# Add Color to your plate

- Lightly cooked dark leafy greens (spinach, collard greens, kale, Swiss chard)
- Cruciferous vegetables (broccoli, cabbage, brussels sprouts, kale, cauliflower)
- Carrots, beets, onions, peas, squashes, sea vegetables and washed raw salad greens



# Low glycemic carbohydrates

## Beans and Legumes



- Rich in folic acid, magnesium, potassium and fiber
- They are a low-glycemic-load food
- 1-2 servings per day (one serving is equal to  $\frac{1}{2}$  cup cooked beans or legumes)
- Beans like kidney, black, chickpeas, black-eyed peas and lentils
- Well-cooked either whole or like hummus

# Antioxidants

- Inflammation leads to reactive oxygen radicals
- Oxidative damage to the joint and cartilage destruction
- Antioxidants defend against this process
- Increased anti oxidants consumption may prevent or relieve pain in RA and OA
- Vitamin E & C
- Selenium, Quecertain, Resveratrol

# Top Anti oxidants

1 cup: Numbers refer to ORAC  
(Oxygen Radical Absorbance Capacity) values

- Wild blueberry, 13427
- Blueberry, 9019
- Cranberry, 8983
- Artichoke hearts, 7904
- Blackberry, cultivated, 7701
- Raspberry, 6058
- Strawberry, 5938
- Sweet cherry, 4873



# Fruit as a healthy snack



- Fruits are rich in flavonoids and carotenoids with both antioxidant and anti-inflammatory activity
- 3-4 servings per day
- Raspberries, blueberries, strawberries, pomegranates blackberries, cherries, all lower in glycemic load than most tropical fruits

# Vitamin E



- Animal studies showed less arthritis with antioxidants
- Framingham study showed an association of reduced risk of OA and vitamin E intake
- Pain controlling effects
- Mixed tocopherols, gamma type is most potent
- Daily dose 600-800IU

# Vitamin C



- Positive effects of vitamin C on health of immune system
- Reducing risk of Rheumatoid arthritis and OA
- A study of 640 patients showed three fold decrease in OA progression
- An Australian study found decrease incidence of OA
- A study stated high risk of RA with lowest intake

# Resveratrol (grape extract)

- Present in various fruits especially skin of grapes
- Potent antioxidant properties protects cells
- Has anti inflammatory and prevents cartilage cell death
- Several animal studies are proven helpful and many human studies are underway

# Vitamin D

- Regulation immune system
- Effect on the immune cells, joint lining and cartilage cells
- If low: 3x risk of progression of OA
- Associated with cartilage loss, increased risk of hip OA
- Low in patients RA, SLE and OA
- Associated Falls

# Vitamin D

- Iowa women health study found lower levels of vitamin D associated with higher risk of developing RA, more tender, swollen joints and HAQ scores
- Nurses health survey linked higher level of vitamin D with healthier lifestyles
- Dose: Vitamin D3- 2000-4000IU a day

# Probiotics

- Probiotics “friendly bacteria,”
- Natural balance of organisms (microflora) in the human gut
- Vital for a healthy immune system
- Naturally in yogurt
- *Lactobacillus acidophilus*
- *Bifidobacterium*

# Spice up your taste buds



## HEALTHY HERBS & SPICES

**Why:** Use these herbs and spices generously to season foods. Turmeric and ginger are powerful, natural anti-inflammatory agents

**Healthy choices:** Turmeric, curry powder (which contains turmeric), ginger and garlic (dried and fresh), chili peppers, basil, cinnamon, rosemary, thyme

# Herbal or Botanical approach

- Avocado/Soybean Unsaponifiables
- Ashwagandha
- Boswellia
- Bormelain
- Curcumin
- Cats claw
- Devil's claw
- Evening Primrose Oil
- Ginger
- Garlic
- Rose hip
- Thunder God Vine
- Willow

# Ginger



- Anti inflammatory herb can help with pain, swelling and stiffness in OA
- Study of 261 people, 63% experienced relief of knee pain (50% sugar pill)
- May have efficacy in RA by inhibiting inflammatory chemicals (prostaglandins)
- Dosage powdered root 500-1000mg/day or as tea
- Avoid if have history of gall bladder stones

# Turmeric (Curcumin)



- Clinical trial has shown efficacy similar to Nsaids
- Powdered root, 500mg-1000mg, 2-3x/day
- Avoid if risk of bleeding, GI intolerance and impaired fertility

# Boswellia



- Inhibits the synthesis of pro inflammatory chemicals
- It is suggested to have efficacy in OA
- A study of 30 patients with knee OA found improvements in pain and walking distance

# Avocado soybean oil

## extract



- Recent studies have showed that ASU has promising beneficial role in OA hips and knees
- It has effects on type 2 collagen synthesis
- 4 major clinical studies suggested benefit with 6 months of use
- No major adverse effects noted
- Dose: 300m/day for 3-6 months

# Thank You

- You can connect with me on social media
- Facebook: [www.facebook.com/ftahirmd](http://www.facebook.com/ftahirmd)
- [https://Twitter.com/irheum](https://twitter.com/irheum)
- [www.Linkedin.com/in/ftahirmd](http://www.Linkedin.com/in/ftahirmd)
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# References

- Libby P: Inflammatory mechanisms: the molecular basis of inflammation and disease. *Nutr Rev* 2007; 65(12 Pt 2): S140-6. ([PubMed](#))
- 2. Calder PC: Polyunsaturated fatty acids and inflammation. *Prostaglandins Leukot Essent Fatty Acids* 2006; 75(3): 197-202. ([PubMed](#))
- 3. Scott A, Khan KM, Roberts CR, Cook JL, Duronio V: What do we mean by the term "inflammation"? A contemporary basic science update for sports medicine. *Br J Sports Med* 2004; 38(3): 372-80. ([PubMed](#))
- (*Osteoarthritis Cartilage*. 1998;6[Suppl A]:14-21)
- (*Rheum Dis Clin North Am*. 1999;25:379-395)
- *Institute of functional Medicine.*