

Healing Groups for People Living with Chronic Pain

Nutrition 101

Foods to Add



Or, You Are What You Eat

Don't Be a Twinkie



Can what you eat affect pain?



The Diet Affects:

- Wound healing (raw materials)
- Inflammation – allergies, fats, antioxidants
- Neurotransmitter synthesis – amino acids, excitotoxins
- Energy Production – muscles need energy to relax
- Gut Flora – which affects all of the above
- Obesity – Adipose tissue is inflammatory



Obesity and Inflammation

- Adipose tissue (fat) makes inflammatory mediators –
 - This may be part of why it is associated with diabetes and heart attacks as well as chronic pain
- Obese people have more joint pain
 - hands as well as weight-bearing joints.

- J Clin Invest. 2003 December 15; 112(12): 1821–1830. **Chronic inflammation in fat plays a crucial role in the development of obesity-related insulin resistance.** Haiyan Xu, Glenn T.

○ **Elevated Levels of Interleukin 6 Are Reduced in Serum and Subcutaneous Adipose Tissue of Obese Women after Weight Loss** The Journal of Clinical Endocrinology & Metabolism Vol. 85, No. 9 3338-3342

○ Many others



The Research Supports: Vegetarian or Vegan Diet

- A 3-week vegetarian diet in FMS patients
 - Decrease pain scores – in 19 of 30 participants
 - Decrease blood test markers of inflammation
 - BMC Complement Altern Med. 2001; 1: 7
- Plant Foods Hum Nutr. 1993 Jan;43(1):55-61
- Scandinavian Journal of Rheumatology Volume 29, Number 5 / October 27, 2000
- Bangladesh Med Res Counc Bull. 2000 Aug;26(2):41-7.
- Toxicology. 2000 Nov 30;155(1-3):45-53.



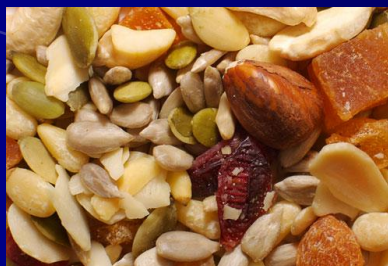
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**“I stay healthy by following a strict
vegetarian diet — nothing but
coffee and cigarettes!”**





o What foods to eat :

- o fresh fruits, salads, raw vegetables, carrot juice, nuts, seeds, whole grain products, tubers, flax seed oil, extra virgin olive oil

o What foods to avoid:

- o alcohol, caffeine, foods containing refined sugar, corn syrup, refined and/or hydrogenated oil, refined flour, dairy, eggs, and all meat



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**“Each serving contains 17 grams of Who Cares,
22 grams of Mind Your Own Business and 54
grams of Shut Up And Let Me Enjoy My Food!”**



Making Changes in What We Eat

- Stages of Change: Big lifestyle changes like a change in the diet require preparation, emotional as well as logistical
- Generally easier to add “good” foods than to eliminate the “bad” ones we crave



Basic Prerequisites

- o Water
- o Assuring Adequate Digestion
- o When to Eat





**“Drink lots of water if I want to lose weight?
My dog drinks from the toilet all day and he weighs a ton!”**

Water

- o **Quantity:** 2 liters fluid per day minimum, more if you drink alcohol or caffeine (this can be herbal tea, juice, etc. as well as water)
 - o Volume depletion decreases muscle perfusion, which allows lactic acid buildup
 - o In athletics, individuals who are volume depleted perceive work to be more strenuous at any given load
 - o 6 cups of coffee per day decreased body water by 1.1 L, or 2.7% in one study *Ann Nutr Metab* 1997; 41(1):29-36

- o **Quality - If you aren't drinking filtered water, your body becomes the filter.**

- o Scientists are finding in ground water—along with industrial pollutants—minute amounts of pesticides, estradiol, acetaminophen, herbicides, codeine and caffeine.
- o Water pollution attributable to US agriculture, including runoff of soil, pesticides and manure is greater than all municipal and industrial sources combined.
- o Lead and other toxic minerals can enter drinking water AFTER it leaves treatment plant (lead-soldered copper pipes, PVC pipes – dioxin).



Digestion

- Chewing
- Stomach acid – beware acid blocker medications
 - Supplement enzymes if these cannot be avoided
- Bile
- Digestive Enzymes
- Absorption – leaky gut/mucosal injuries



When to Eat

- o Do Not Skip Meals, especially breakfast
 - o Fasting increases cortisol
- o Do not eat the majority of your calories in the evening



Raw Materials For Healing

- o Protein
- o Phytonutrients: Fruits and Veggies
- o Carbs (Carbohydrates) and Fiber
- o Good Fats (more on this later)



Raw Materials For Healing

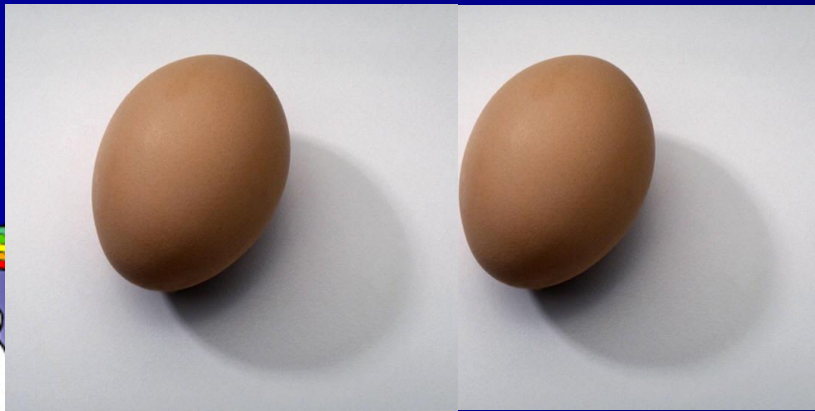
- o Protein – minimum 0.6 g/kg/d (50 g for a 180 lb person), more if you have injuries that need to heal

Table 1. Protein in Common Foods, Grams per Serving

| Food and serving size | Protein | Fat |
|---|---------|------|
| Chicken, light meat, no skin 3 ounces, cooked | 26.3 | 3.0 |
| Pork roast, 3 ounces, cooked | 23.9 | 8.9 |
| Chicken, dark meat, 3 ounces, cooked | 23.3 | 9.3 |
| Beef, round steak, 3 ounces, cooked | 22.6 | 4.9 |
| Cheddar cheese, 3 ounces | 21.1 | 28.2 |
| Cottage cheese, low fat, 1/2 cup | 15.6 | 2.2 |
| Milk, skim, 1 cup | 8.4 | 0.4 |
| Egg, 1 whole | 6.3 | 5.3 |
| Peanut butter, 2 tablespoons | 7.9 | 16.0 |
| Baked beans, 1/2 cup | 6.6 | 1.3 |
| Sunflower seeds, 1/4 cup | 6.2 | 15.9 |
| Pecans, 1/4 cup | 2.3 | 20.2 |
| Oatmeal, 3/4 cup | 4.6 | 1.8 |
| Rice, 1/2 cup | 2.8 | 0.3 |
| Whole wheat bread, 1 slice | 2.6 | 1.5 |
| White bread, 1 slice | 2.5 | 0.9 |
| Apple, 1 whole | 0.3 | 0.5 |
| Green beans, 1/2 cup | 0.9 | 0.1 |
| Broccoli, 1/2 cup | 2.3 | 0.1 |



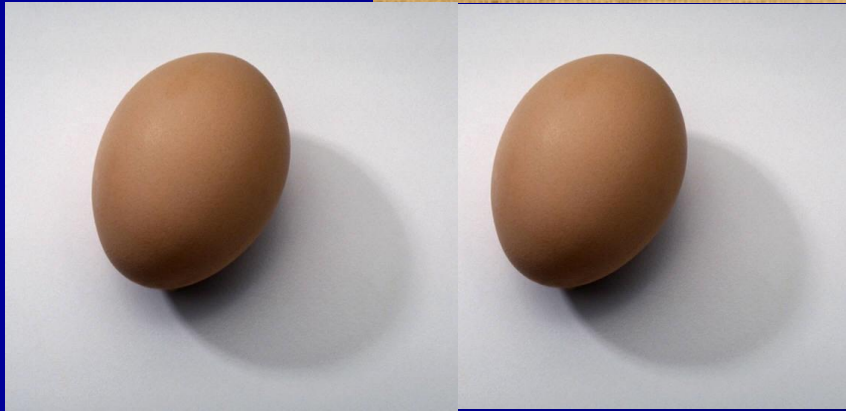
Proteins



Proteins



Dried Beans
\$0.06/ounce



Eggs
\$0.06/ounce



Boneless skinless chicken breast
\$0.17/ounce
Sirloin steak \$0.35/ounce
Deli meat \$0.57/ounce





The Beautiful Bean

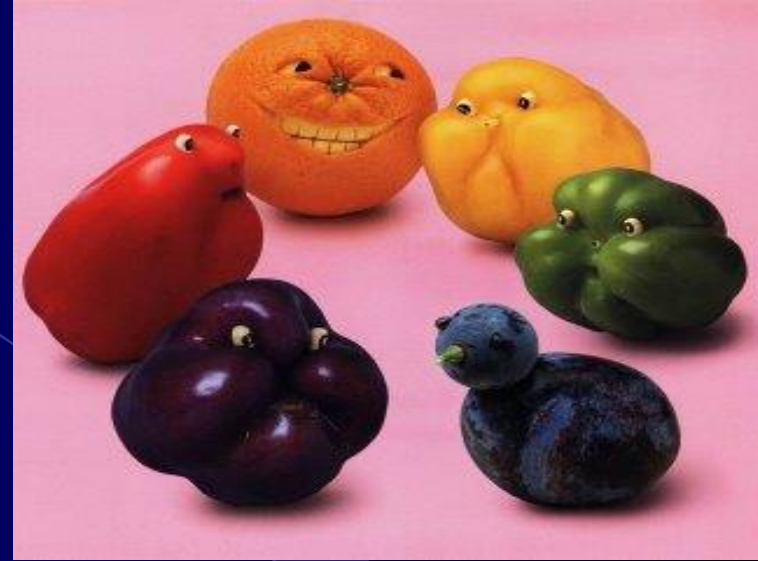
| | Cost/ serving | Calories | Fat | Protein | Fiber |
|------------------------|--------------------------|-----------------|------------|----------------|--------------|
| Black Beans | \$0.16 | 140 | 0g | 18g | 30g |
| Extra lean ground beef | \$0.62 | 256 | 19g | 21 g | 0g |



Fruits and Veggies



Fruits and Veggies



- 5-9 Servings per day decreases the risk of
 - Cancer
 - Esophagus, liver and larynx by 80%
 - Breast cancer by 30%
 - And others: pancreas, prostate, lung, colon, kidneys and bladder
 - Heart disease - 24-27%
 - Degenerative Arthritis



“Do I really have to eat
veggies? Can’t I just
take a vitamin?”

Y

N



“Can’t I just take a
vitamin?”

Y

N



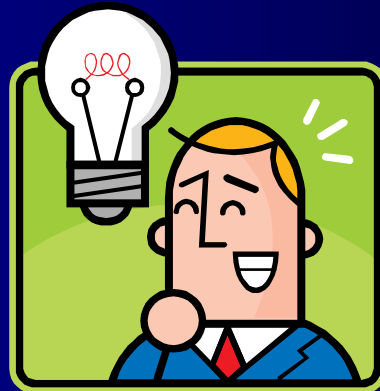
Lung Cancer and Beta Carotene

- o People who eat more beta carotene get less lung cancer



Lung cancer and beta carotene

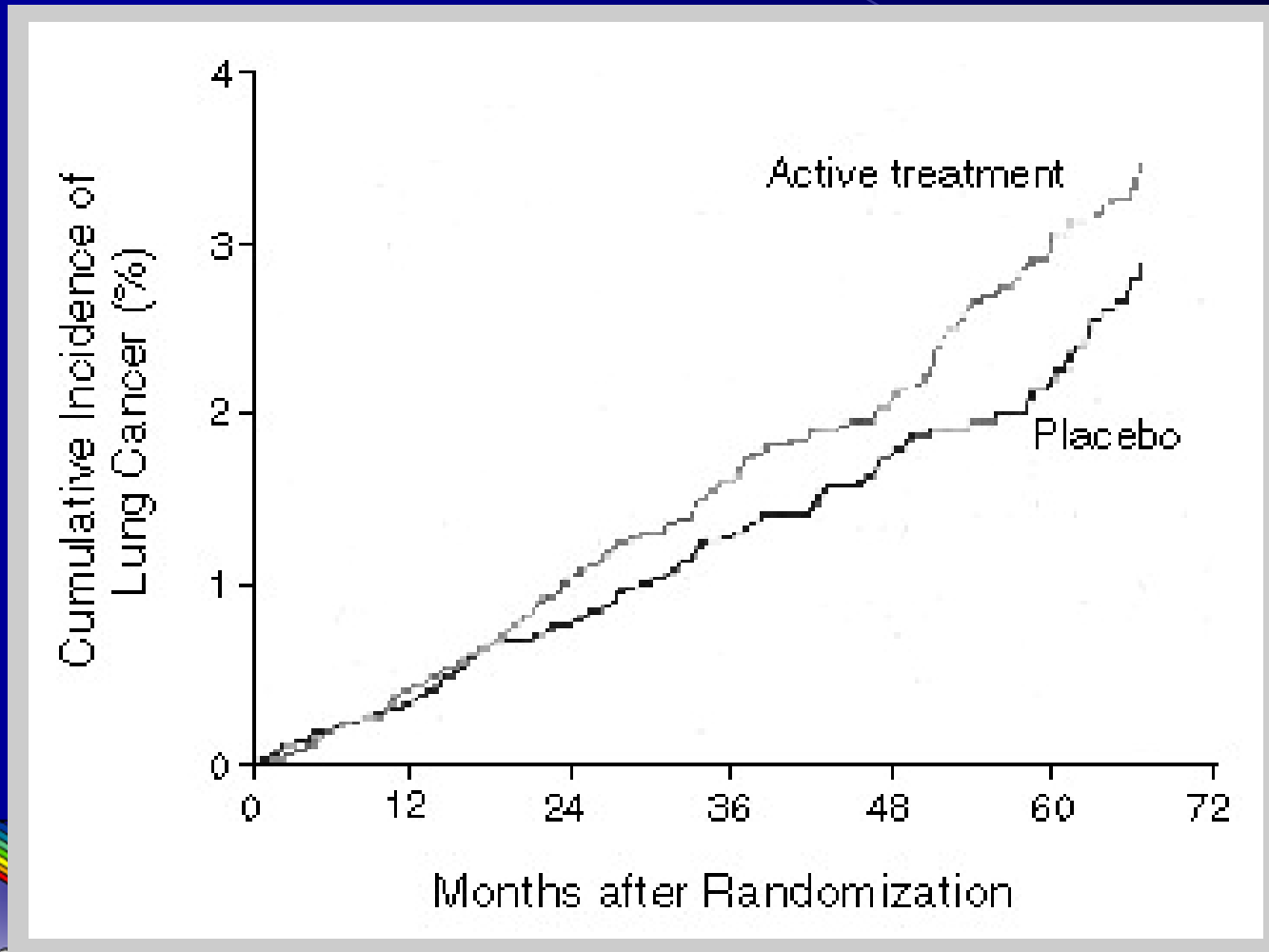
- People who eat more beta carotene get less lung cancer



- Give beta carotene pills to smokers!



Oops. . . .



30 mg beta carotene /day and 25,000 IU of retinyl palmitate/day

N Engl J Med. 1996 May

Foods with Beta Carotene



Carrots



Sweet
potatoes



Kale



Spinach



Winter squash



Lower caloric density

- o How many oranges does it take to make the calories of one Snickers bar?



Lower caloric density

- How many oranges does it take to make the calories of one Snickers bar?
- Snickers – 280 calories
- Orange – 61 calories
- Answer: 4.6 oranges



Which vegetables?

- o Eat the rainbow. . . .



Which vegetables?

- o Eat the rainbow. . . .



Which vegetables?

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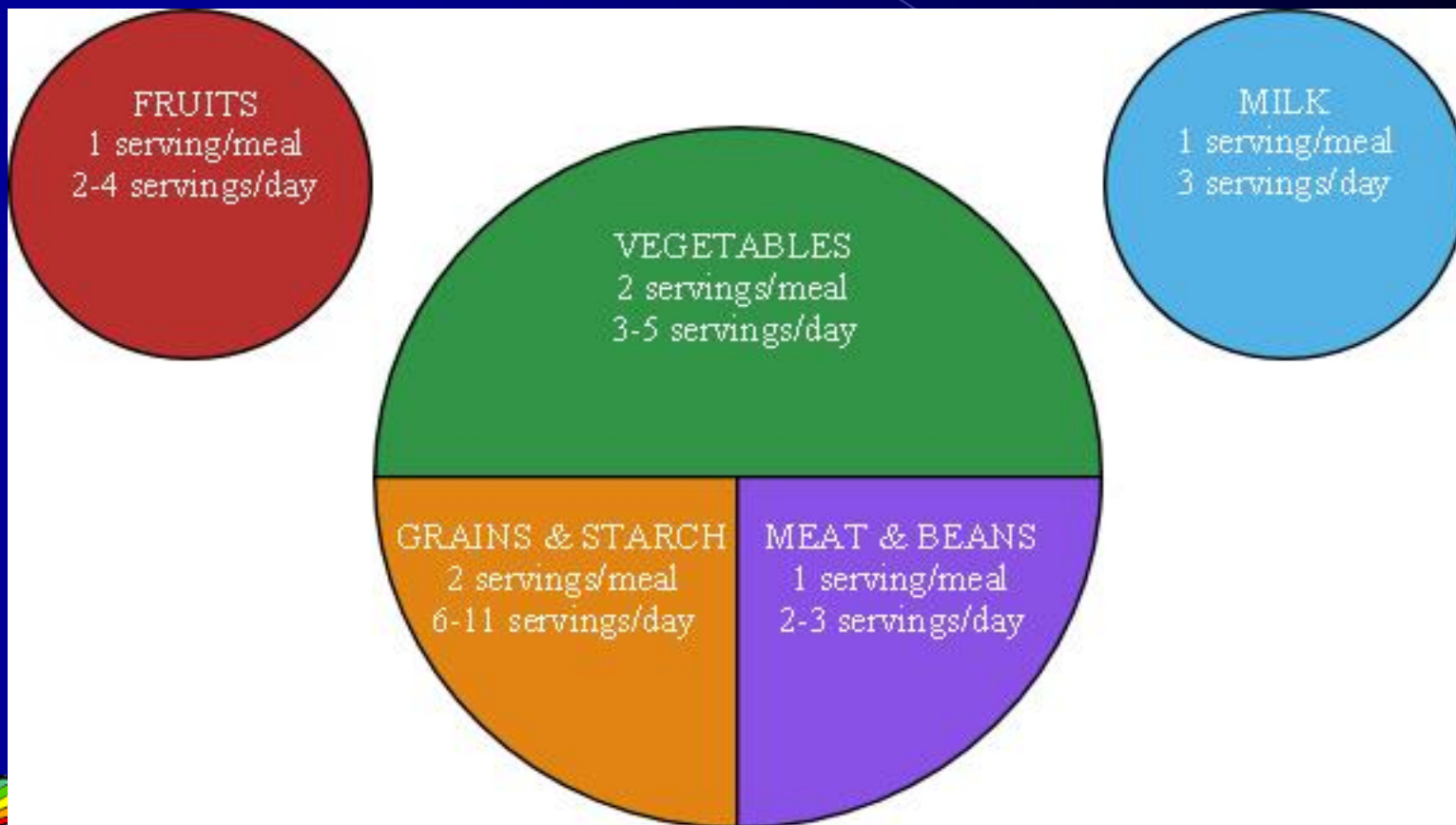
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“Snow White was poisoned by an apple, Jack found a giant in his beanstalk, and look what happened to Alice when she ate the mushroom! And you wonder why I won’t eat fruit and vegetables?!”



Nutrition





Tips for Increasing Fruits and Veggies

- o Raw veggies and fruits make a great snack
- o Kepp some pre-cut and ready to eat



Add fruits and veggies to foods you are already eating

- o Berries and bananas to cereal, oatmeal



- o Veggies in burritos and with noodles



- o Add veggies to soups
 - o (you can add frozen veggies to canned soups)



- o Freeze fruit juice in popsicle molds



Sauces

- o Use sauces to improve flavor for veggies you do not like



Or. . . Hide veggies by mixing
them into other foods

The Sneaky Chef
Deceptively Delicious



- o Put yogurt, frozen fruit, spinach and some milk or soy milk in a blender to make a smoothie



- o Blend veggies into enchilada sauce or spaghetti sauce





Carbohydrates and Fiber

- Not all carbs are created alike – more on this later
- Unrefined carbs come with **fiber**, which
 - Is Filling
 - replaces higher caloric density foods
 - Maintains normal colonic flora
 - Lowers Glycemic Index (more later)
 - Binds things
 - Enterohepatic Circulation of Cholesterol
 - Toxins produced by bacterial fermentation
 - Keeps the bowels moving regularly



“Good” Fats

- o Nuts and Fish have omega-3 fats:
 - o Anti-inflammatory
 - o Anti-clot
 - o Stabilize mood, decrease depression



Fish Oil – A Taste of the Evidence

- o NEJM Volume 334:1557-60 June 13, 1996 Effect of an Enteric-Coated Fish-Oil Preparation on Relapses in Crohn's Disease *Andrea Belluzzi, M.D., Corrado Brignola, M.D., Massimo Campieri, M.D., Angelo Pera, M.D., Stefano Boschi, M.S., and Mario Miglioli, M.D.*
- o Ann Intern Med. 1992 Apr 15;116(8):609-14. Dietary supplementation with fish oil in ulcerative colitis. Stenson WF, Cort D, Rodgers J, Burakoff R, DeSchryver-Kecsckemeti K, Gramlich TL, Beeken W.
- o American Journal of Clinical Nutrition, Vol. 71, No. 1, 349S-351s, January 2000
© 2000 American Society for Clinical Nutrition n-3 Fatty acid supplements in rheumatoid arthritis^{1,2} **Joel M Kremer** Ingestion of dietary supplements of n-3 fatty acids has been consistently shown to reduce both the number of tender joints on physical examination and the amount of morning stiffness in patients with rheumatoid arthritis. . . n-3 Fatty acids have virtually no reported serious toxicity in the dose range used in rheumatoid arthritis and are generally very well tolerated.
- o Annals of the Rheumatic Diseases, 1991, Vol 50, 463-466 Dietary fish oil and the severity of symptoms in patients with systemic lupus erythematosus **AJ Walton, ML Snaith, M Locniskar, AG Cumberland, WJ Morrow and DA Isenberg**



Logistics/Planning for Good Nutrition

- o Stock easy healthy foods
- o Cook ahead
- o Use appliances
- o Make trades

- o Interested in some easy recipes?

