

Nutrition and Pain 101, Or, You Are What You Eat, Don't Be a Twinkie

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

People who are obese have more joint pain, in the hands as well as weight-bearing joints.

Basic Prerequisites

Water

Quantity: 2 liters fluid (this can be herbal tea, juice, etc. as well as water) per day minimum, more if you drink alcohol, caffeine

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

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

Do Not Skip Meals, especially breakfast - Fasting increases cortisol

Do not eat the majority of your calories in the evening

What to Eat:

Vegetarian or Vegan Diet

Numerous studies in fibromyalgia and rheumatoid arthritis

what foods to eat : fresh fruits, salads, raw vegetables, carrot juice, nuts, seeds, whole grain products, tubers, flax oil, extra virgin olive oil

what foods to avoid: alcohol, caffeine, foods containing refined sugar, corn syrup, refined and/or hydrogenated oil, refined flour, dairy, eggs, and all meat

Raw Materials For Healing

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

Fruits and Veggies

5-9 Servings per day decreases the risk of

- Cancer
- Heart disease
- Degenerative Arthritis

There are more nutrients in a carrot than we can even name, and certainly more than you will find in a multivitamin – vitamin pills do not produce the above benefits

Fiber

- 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

Nuts and Fish have omega-3 fats:

- Anti-inflammatory
- Anti-clot
- Stabilize mood, decrease depression

The Rules of Tacks

If you are sitting on a tack, it takes a lot of aspirin to make the pain go away.

If you are sitting on 2 tacks, removing one does not lead to a 50% improvement in symptoms.

-Syd Baker, M.D.

Dietary Tacks

- Sugar
- Bad Fats
- Food Allergies
- Excitotoxins and other toxins

Sugar (and high GI foods)

- Feeds bad flora (yeast and other baddies)
- Insulin causes storage of carbs rather than burning them as fuel – causes weight gain
- Reactive hypoglycemia causes stress hormone release – may contribute to
 - Fibrofog – memory problems, decreased concentration
 - Exacerbation of trigger points
 - Mood swings and irritability
 - Sleep disturbance
 - Fluid retention
 - Carbohydrate craving

“Fibroglycemia”

Symptoms of

- | | |
|------------------------------------|---------------------|
| Headaches | Nasal congestion |
| Dizziness | Heavy dreaming |
| Irritability | Heart palpitations |
| Chronic fatigue | Tremor of the hands |
| Depression | Day or night sweats |
| Nervousness | Anxiety |
| Decreased memory and concentration | Leg cramps |

“Fibroglycemia” Symptoms relieved within 5-10 minutes of eating sugar

Limited carbohydrate diets can improve symptoms in 7-10 days, but these can be very uncomfortable days

Not all carbs are created equal

The insulin mobilized over two hours by 10 healthy volunteers after consuming a snack of cola and chips was 75% GREATER than that after ingesting an isocaloric amount of sugar from raisins and peanuts (2p<.001)

Oettle GJ et al. *Am J Clin Nutr* 1987; 45:86

Glycemic Index

Yogurt, lowfat, unsweetened, plain	14	Corn	49
Lentils	29	Spaghetti, durum	55
Apple	36	Rice, white	59
Spaghetti, ww	37	Ice Cream	61
Tortilla, corn	38	Macaroni and cheese	64
All-bran cereal	42	Grape-nuts cereal	67
Orange	43	French baguette	95

(High numbers are bad) **Think Primitive! – eat brown and whole grain carbs**

Bad Fats

Saturated fats (animal fat – butter, lard, meat, etc.)

Omega-6 vegetable oils (corn oil, safflower oil, etc.)

Trans fats

Contribute to inflammation – raw materials for prostaglandins

Food Allergies

Cause Leaky Gut, which causes:

Increased inflammation in the system with C fiber sensitization

Immune activation which may contribute to autoimmune disease

Malabsorption of nutrients, which causes malnutrition

Food Sensitivities

One third of the patients with rheumatoid arthritis, ankylosing spondylitis and psoriatic arthropathy reported aggravation of disease symptoms after intake of certain foods while 43% of the patients with juvenile rheumatoid arthritis and 42% of the patients with primary fibromyalgia stated the same. . . . Less pain and stiffness were reported by 46% of the patients and 36% reported reduced joint swelling

Clin Rheumatol. 1991 Dec;10(4):401-7. Diet and disease symptoms in rheumatic diseases--results of a questionnaire based survey. Haugen M, Kjeldsen-Kragh J, Nordvag BY, Forre O.

Common Food Allergens

Tomato	Egg
Wheat	Corn
Chocolate/cola	Fish
Citrus	Legumes (beans, soy)
Nuts	Pork
Cinnamon	Cow's milk (and cheese, yogurt, ice cream, etc.)

Diagnosis of Food Allergies

Blood testing – Expensive, Not always reliable

Elimination Diets - Must eliminate all allergenic foods to be diagnostic (2nd Rule of Tacks)

Excitotoxins and other Foods/Additives Linked to Increases in Pain

Caffeine

Alcohol

MSG – Monosodium Glutamate

Aspartame (NutraSweet)

For migraines:

Tyramine: red wine, some cheeses

Histamine: some wines and champagnes

Caffeine

Dehydration

Effects on the Adrenal Glands

Effects on Sleep

Note metabolism of caffeine slows with increasing age – a morning cup of coffee might not have affected nighttime sleep at age 20 but may be significant now

Alcohol

Blood vessel dilation (migraine effects)

Leaky Gut

Calories

Sleep Disruption

Liver, pancreas, muscle and brain injury

Depletion of B vitamins, magnesium, potassium

MSG and Aspartame

Stimulate the glutamate receptors

Latter may generate formaldehyde

Relief of fibromyalgia symptoms following discontinuation of dietary excitotoxins JD Smith, CM Terpening, SO Schmidt, and JG Gums

BACKGROUND: Fibromyalgia is a common rheumatologic disorder that is often difficult to treat effectively. CASE SUMMARY: Four patients diagnosed with fibromyalgia syndrome for two to 17 years are described. All had undergone multiple treatment modalities with limited success. All had complete, or nearly complete, resolution of their symptoms within months after eliminating monosodium glutamate (MSG) or MSG plus aspartame from their diet. Complementary Health Practice Review, Vol. 8, No. 3, 234-245 (2003)

Other Toxins – Particularly in the Chemically Sensitive

Biomagnification of pollutants in animal products

12 most contaminated fruits and veggies:

Strawberries

Bell peppers

Spinach

Cherries

Peaches

Apples

Cantaloupe

Apricots

Celery

Green beans

Cucumbers

Grapes

Making Changes in What We Eat

There is a difference between wanting food and being hungry

Stages of Change: Big lifestyle changes like a change in the diet require preparation, emotional as well as logistical

It is generally easier to add “good” foods than to eliminate the “bad” ones we crave

The challenges:

- Meeting needs that are being met by food with other means (and first, figuring out what those needs are, e.g. intimacy, relief of boredom, emotional soothing)
 - *The Solution*, by Laurel Mellin, is a great resource
- Eating mindfully so that we get full enjoyment out of whatever we do choose to eat

Logistics/Planning for Good Nutrition

Stock easy healthy foods

Cook ahead

Use appliances

Make trades

Tips to Increase Fruits & Veggies

Pre-cut vegetables and salad mixes, even fruit

Add fresh fruit and vegetables to foods you already eat - like berries and bananas to yogurt and cereal; vegetables to pasta and pizza; and lettuce, tomato and onion to sandwiches

When it's snack time, grab an apple or orange, or make a ready-to-eat bag of sweet cherries.

Make a quick smoothie in the blender by pureeing peaches and/or nectarines, a touch of your favorite fruit juice, crushed ice, and a light sprinkling of nutmeg.

Use sauces to improve palatability for veggies you do not like

Generally, a fruit and vegetable serving is about the size of your fist. A serving of leafy greens should be larger than your fist, while a serving of dried fruit is smaller than your fist.