

## Is Pain Kickin' Your Butt?



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## Pain Is Expensive

- Johns Hopkins University reported the annual cost of chronic pain is approximately \$635 billion a year, which is more than the yearly costs for cancer, heart disease and diabetes



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## Pain Is Prevalent

- Prevalence estimates for pain conditions were 10 percent for moderate pain, 11 percent for severe pain, 33 percent for joint pain, 25 percent for arthritis, and 12 percent for functional disability



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## Pain Impacts Productivity

- Also, adults with pain reported missing more days from work than people without pain
- Pain negatively impacted three components of productivity: work days missed, number of annual hours worked and hourly wages




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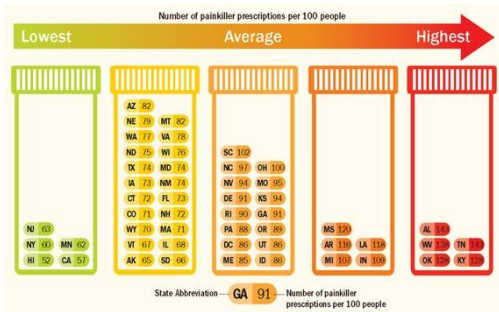
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## Pain Medication On The Rise




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## Inflammation

- A natural response to injury
  - When it becomes chronic or systemic the process becomes a disease
- Medications are often prescribed to suppress symptoms




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## An Anti-Inflammatory Lifestyle

- Is critical if one wants to win the war on inflammation
  - Managing stress, limiting alcohol, smoking cessation, increasing exercise, adequate sleep, minimizing toxins, healthy food choices




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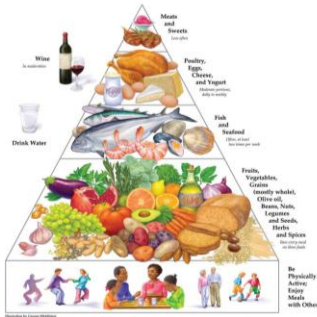
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## The Anti-Inflammatory Diet




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## Anti-Inflammatory Spices

- Curcumin – the potent compound that gives turmeric its distinctive yellow color
- Thousands of published studies on curcumin extract demonstrate or suggest its broad and significant medical effects, including anti-inflammatory properties




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## Traditional Ayurvedic Medicine

Has safely used curcumin for over 5,000 years to support a healthy inflammatory response

- Curcumin is obtained from the rhizomes of the yellow curry spice turmeric (*Curcuma longa*)




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## Animal Vs. Plant Omegas

Omega-3 Polyunsaturated Fatty Acids in Foods			
Food	Serving Size	Type of Omega-3 Fat	Amount of Omega-3 Fats
<b>Fish</b>			
Pacific Herring	3 ounces	DHA and EPA	2 grams
Chinook Salmon	3 ounces	DHA and EPA	1.5 grams
Atlantic Salmon	2.5 ounces	DHA and EPA	1 gram
Sockeye Salmon	3 ounces	DHA and EPA	1 gram
Pacific Oysters	2.5 ounces	DHA and EPA	1 gram
Rainbow Trout	3.5 ounces	DHA and EPA	1 gram
Canned White Tuna	4 ounces	DHA and EPA	1 gram
Canned Light Tuna	3 ounces	DHA and EPA	0.25 grams
Dungeness Crab	3 ounces	DHA and EPA	0.33 grams
<b>Plant-Based Foods</b>			
Flaxseed Oil	1 tablespoon	ALA	8.5 grams
Flaxseeds	1 tablespoon	ALA	2.2 grams
English Walnuts	1 ounce	ALA	2.6 grams
Black Walnuts	1 ounce	ALA	0.6 grams
Walnut Oil	1 tablespoon	ALA	1.4 grams
Canola Oil	1 tablespoon	ALA	1.2 grams
Mustard Oil	1 tablespoon	ALA	0.8 grams
Soybean Oil	1 tablespoon	ALA	0.9 grams
Firm Tofu	1/2 cup	ALA	0.7 grams

DHA = docosahexaenoic acid, EPA = eicosapentaenoic acid, ALA = alpha-linolenic acid  
**A 3 ounce serving of fish is the size of a deck of cards.**  
 Information compiled in part from Higdon, An Evidence-Based Approach to Dietary Phytochemicals, New York, Thieme, 2011.

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## Super Oils



- EPA and DHA are more powerfully anti-inflammatory than their precursor, ALA (alpha-linolenic acid)
- Flax oil, rich in ALA, is not as effective as fish oil when reducing inflammation in the body
- Extra virgin olive oil is also protective against inflammation, possessing some NSAID-like activity

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## Let's Look at Different Kinds of Pain

- Headaches
- Osteoporosis
- Rheumatoid Arthritis
- Osteoarthritis
- Back pain
- Fibromyalgia
- Myofascial pain




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## Headache

- Migraine and Tension
  - 16% women, 6% men suffer from migraines
- Dietary triggers found 8% to 20% of the time
  - Red wine, dark beer, aged cheese, nuts, onions, chocolate, shellfish, caffeine, nitrates/nitrites, aspartame
  - Keep a food journal




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## Headache

- Identify environmental factors
  - Allergens, fluorescent lights, loud noises, fumes, dust, side effects from pharmaceutical medication
- Drink enough water
- Exercise



Cluster headaches may involve pain around one eye, along with drooping of the lid, tearing and congestion on the same side as the pain.

#ADAM

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## Headache Busting Nutrients

- **Magnesium** significantly reduced the frequency of migraines, menstrual headaches at 500 mg daily
- **Omega-3 fatty acids** – Anti-inflammatory, vascular relaxation effects, striking reduction in headache frequency at 2 to 6 g daily
- **Feverfew** –70% reduction in headache frequency was shown in 270 patients with migraines



Rakel, David. *Integrative Medicine, 3rd Edition*. W.B. Saunders Company

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## Top Food Sources of Magnesium

- ¼ cup pumpkin seeds = 190 mg
- 1 cup cooked spinach = 156 mg
- 3 oz. halibut = 125 mg
- 1 oz. cashews = 70 mg
- 1 artichoke = 70 mg
- 2 tablespoons peanut butter = 50 mg
- ½ cup cooked pinto beans = 50 mg.



Are you getting 500 mg of Magnesium every day?

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## Top Sources of Omegas

- 2 Tbs. flax seeds = 3 grams
- ¼ cup walnuts = 2 grams
- 4 oz. salmon = 1.5 grams
- 3 oz. sardines = 1 gram
- 1 cup cooked soybeans = 1 gram

Food	Serving Size	Calo	Amount (g)
Flax Seeds	2 tsp	74.9	3.19
Walnuts	6.25 tsp	168.5	2.97
Cocoa	2 tsp	13.6	0.18
Sardines	3.20 oz wt	189.7	1.94
Romaine Lettuce	2 cups	18.9	0.11
Salmon	4 oz wt	244.9	1.43
Pumpkin Seeds	2 tsp	25.3	0.11
Alfalfa	4 oz wt	89.2	0.96
Spinach	1 cup cooked	41.4	0.17
Halibut	4 oz wt	158.8	0.62
Collard Greens	1 cup cooked	49.4	0.18
Beef	1 cup cooked	36.4	0.13
Soybeans	1 cup cooked	197.4	1.03
Summer Squash	1 cup raw	18.1	0.06
Onion	4 oz wt	112.3	0.07
Salsify	4 oz wt	127.0	0.41
Turnip Greens	1 cup cooked	28.8	0.09
Beef	4 oz wt	159.1	0.62
Winter Squash	1 cup baked	73.8	0.19
Brussels Sprouts	1 cup raw	67.8	0.09
Broccoli	1 cup	64.0	0.15
Alfalfa	2 tsp	34.2	0.08
Green Beans	1 cup raw	117.0	0.07
Turnip	4 oz wt	137.6	0.33
Strawberries	1 cup	46.1	0.09

Are you getting 2 - 6 grams of Omegas every day?

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## Feverfew



- Feverfew has been used for centuries to treat arthritis
- Ancient Greek physicians used it to reduce inflammation and treat menstrual cramps
- It is now used to prevent migraine headaches, and several scientific studies suggest that it works well for that purpose

<http://umm.edu/health/medical/altmed/herb/feverfew>

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## Osteoporosis

- Reaches peak at 30 years of age, 15% of bone mass turns over each year
- 10 million in the US: Women 75% of all cases
  - Women 50+ years: 7% osteoporosis, 40% osteopenia
- Cost to US health care system \$16 billion year




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## Osteoporosis

- Women lose an average of 35% of the cortical bone, 50% of their trabecular bone
  - .5% - .9% per year in peri-menopause
  - 1% - 3% per year during menopause
  - then 1% per year into old age




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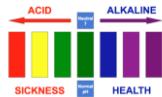
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## Osteoporosis

- Avoid high alcohol intake, excessive caffeine consumption
  - Acid-forming diets increased calcium excretion by 75% when compared with alkaline diets
- Check for malabsorption
  - Calcium excretion increases as animal protein and sodium intake rise




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## Osteoporosis Nutrients

- **Vitamin D3** – bone pain, muscle pain, impaired muscle strength
- **Omega-3** – reduces bone loss associated with estrogen withdrawal, enhances calcium absorption, reduces calcium excretion, improves bone matrix and strength



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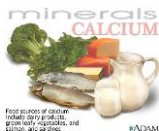
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## Osteoporosis Nutrients

- **Calcium** – 29 trials involving 63,000+ patients proved calcium with vitamin D prevented osteoporosis in men and women 50+ yrs old
- **Magnesium** – studies link high intakes with increased BMD – required for conversion of a usable form of Vitamin D in the body
- **Vitamin C** – required for collagen; along with calcium supports increase in BMD



Rakel, David. *Integrative Medicine, 3rd Edition*. W.B. Saunders Company

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## Top Food Sources of Vitamin D

- 3 oz. Swordfish = 566 IU
- 3 oz. Salmon = 447 IU
- 3 oz. canned Tuna = 137 IU
- 1 cup calcium fortified orange juice = 115 IU



Are you getting enough Vitamin D every day?

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## Top Food Sources of Calcium

- 1 cup low fat, plain yogurt = 450 mg
- 3 oz. canned sardines with bones = 410 mg
- 4 oz. tofu = 400 mg
- 1 ½ oz. cheddar cheese = 300 mg
- 1 cup 2% milk = 300 mg
- 1 cup cooked collard greens = 260 mg
- ½ cup tofu = 125 mg



Are you getting enough Calcium every day?

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## Remember Your Omega 3 and Magnesium Foods



Omega-3 fatty acids are found in only fish like salmon and flaxseed and canola oils



Top food sources of magnesium  
By [mainstreet.com](http://mainstreet.com)

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## Osteoarthritis



- Degenerative joint disease that affects 27 million people in the US
- By 2030, more than 67 million (25% of population) will have OA
- End point is total loss of joint cartilage
- Overweight persons are at a higher risk
  - 10% reduction in weight led to a 28% improvement in function

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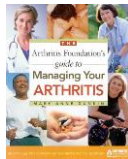
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## Osteoarthritis

- **SAM-e** – studies conclude may be as effective as Rx at reducing symptoms
  - The Arthritis Foundation's Guide to Alternative Therapies note that SAM-e is a promising treatment at 400 to 1600 mg daily




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## Osteoarthritis

- Anti-inflammatory diet, rich in omega-3
  - Fish oil led to an increase in weight bearing tolerance and reduction in need for pain Rx
- **MSM** – sulfur is necessary for connective tissue formation at 1000 – 3000 mg, 3x daily
- Exercise!



Rahel, David. Integrative Medicine, 3rd Edition. W.B. Saunders Company

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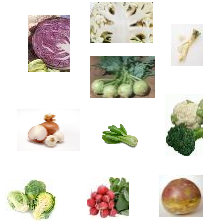
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## Top Sources of Sulfur Foods

- Processed fatty foods eliminate sulfur from the body
- Onions, garlic, cruciferous vegetables, meat, horseradish




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## Chronic Low Back Pain

- Annual direct costs associated with this condition are >\$50 billion in the US
  - 5<sup>th</sup> most common visit to physicians
  - Between 60% - 85% adults suffer



<http://www.fammed.wisc.edu/integrative/resources/modules/low-back-pain/>

Rakel, David. Integrative Medicine, 3rd Edition. W.B. Saunders Company

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## Fibromyalgia



- Condition resulting in pain, fatigue, sleep disturbances, memory and cognitive problems
- Occurs twice as often in women vs. men
- Being overweight increases risk 21% - 28%
- Obesity increases risk 32% - 50%

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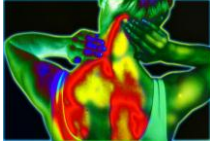
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## Fibromyalgia

- Anti-inflammatory diet
- Avoid trans fats, alcohol, caffeine, sugar
- Exercise – consider Tai Chi, Yoga, Qi Gong, warm water exercises




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## Fibromyalgia Nutrients

- **Omega 3** – pain modulating effect at 2-4 gr daily
- **Vitamin D** – low levels are associated with widespread pain
- **Magnesium** – muscle relaxing properties



Rakel, David. Integrative Medicine, 3rd Edition. W.B. Saunders Company

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## Myofascial Pain

- Considered the leading cause of musculoskeletal pain
  - Affects up to 85% of the population at some point in their lives
  - Between 30 and 60 years of age, prevalent in 37% of males and 65% of females
  - Older than 65 years, rate is 80%




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## Myofascial Pain

- Increase awareness of stress and environmental triggers
  - Poor posture, repetitive stress
- Nutrients: Vitamin D, Magnesium, Omega-3s



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## Anti-Inflammatory Diet

- Fats are the top component of the Anti-Inflammatory Diet
- High doses of EPA/DHA are needed to treat inflammatory conditions
  - Up to 4 or 5 grams daily
- Best sources of Omega 3 EPA/DHA in coldwater fish – "SMASH"
  - Salmon, Mackerel, Anchovies, Sardines, Herring




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## More Anti-Inflammatory Diet

- Whole grain carbohydrates with a low glycemic load, 25 grams of fiber daily
- Rainbow colored fruits and vegetables
- Plant based proteins – legumes, nuts, seeds
- Spice it up – garlic, turmeric, rosemary, ginger, oregano, cumin, cayenne




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## Maintain Your Weight

- "Hari hachi bu" – stop eating when 8/10 full



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## Legal Break



NATURE'S SUNSHINE

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## Include These Nutrients Daily

- **Super Omega-3**
- **Vitamins D and C**
- **Calcium, Magnesium**



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### Curcumin<sup>BP</sup>

- Antioxidant rich turmeric extract promotes a healthy inflammatory response while supporting the body's immune, circulatory, structural and glandular systems




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### Bioperene



A black pepper fruit extract that enhances curcumin's naturally poor bioavailability

- With bioperine, blood levels were detected up to one hour after ingestion
- 2,000% increase in bioavailability

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### CLA – Conjugated Linoleic Acid

- “CLA supplementation resulted in significant improvement in clinical manifestation among RA patients and may be useful in their treatments”



- Intl J Rheum Dis. 2009 Apr;12(1):20-8

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## SAM-e



- **S-Adenosyl-L-Methionine**
- Has both analgesic and anti-inflammatory effects
- Multiple studies indicate SAME is superior to placebo and comparable to NSAIDs, such as ibuprofen, in the treatment of OA symptoms
- SAME has also shown benefit in the treatment of fibromyalgia

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## Feverfew

- Several human studies have used feverfew to prevent and treat migraines
- Overall, these studies suggest that taking dried leaf capsules of feverfew every day may reduce the number of migraines in people who have chronic migraines




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## MSM

- Methylsulfonylmethane (MSM) is present in many fresh foods, but is destroyed through cooking, processing and storage
- Sulfur is an important structural component of the connective tissue that joins muscle to bone




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## Essential Oils – Peppermint

### *Fresh and Reviving*

With an invigorating and minty aromatic blast, Peppermint possesses unique cooling and warming qualities when applied topically



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## Essential Oils - Recover

An intense, frosty-then-warming blend of bold wintergreen with peppermint, camphor and other efficacious oils that is both penetrating and soothing



- Effective agent for minor aches and pain
- Apply to muscles after a long workout or athletic event

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## Ever Flex Pain Cream

- Enhances joint mobility and flexibility through pain reduction
- Relieves muscle and joint pain
- Is easily absorbed through the skin for fast-acting structural support



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## Tei Fu Lotion

- Supports the structural system by promoting muscle relaxation
- Leaves skin smooth and supple
- Deeply penetrates skin



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