

anti-inflammatories

## Description

# antiinflammatories/painkillers

You may wish to save this to a “Health” email folder for easy reference.

Use this as an aide to your own research and share with your doctor as appropriate.

You can use drugs.com or other trusted health websites to look up the latest information on prescription & herbal drugs possible side & interaction effects. Typing in the name of two medications or a medication & an herb in a search bar of most browsers will bring up results with their interaction effects.

Anti-inflammatories

Treating rheumatoid arthritis & avoiding nightshade plants

Osteoarthritis

Anti-inflammatories stop pain & speed healing of many injuries

Near infrared sauna bulbs & healing

NSAIDs & Alzheimers

Wheat and inflammation

Alpha lipoic acid

Palmitoylethanolamide (PEA)

Turmeric (with a little black pepper)

Ginger

Astaxanthin

Resveratrol

Boswellia

Nigella sativa (black seed oil)

Cannabidiol (CBD) oil

Bromelain

Papain

Methylsulfonylmethane (MSM)

Glucosamine & Chondroitin

Cherries

Celery

Wobenzyme

Zyflamend

Cat's Claw

Mangosteen

Cannabivarin

Noni fruit

Levodopa

Lemon verbena

Opiates (making them safer)

Back pain

Peptides for healing-

BPC-157

Steroids & death

One study found that within 30 days of taking just one steroid pill, people had a 500% higher rate of potentially deadly sepsis, 300% higher rate of potentially deadly blood clots, and nearly 200% higher rate of bone fractures.

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Short term use of oral corticosteroids and related harms among adults in the United States: population based cohort study

Akbar K Waljee et al.

BMJ 2017; 357 doi: <https://doi.org/10.1136/bmj.j1415>

<http://hpi.umich.edu/news/common-drugs-uncommon-risks-higher-rate-serious-problems-seen-adults-who-take-short-term-steroids>

### Rheumatoid arthritis

Rheumatoid arthritis is an autoimmune disease. It can be alleviated by avoiding nightshade plants & taking immune modulators like vitamin D3/royal jelly/low-dose naltrexone and anti-inflammatories like turmeric, ginger, astaxanthin, boswellia, resveratrol, PEA, bromelain, & papain.

### Vitamin K2 & rheumatoid arthritis

Vitamin K2 helps to direct calcium away from the arteries and to bone. It appears to help treat rheumatoid arthritis.

Mod Rheumatol. 2013 Sep;23(5):1001-7. doi: 10.1007/s10165-012-0789-4. Epub 2012 Nov 6.

Vitamin K2 administration is associated with decreased disease activity in patients with rheumatoid arthritis.

Ebina K1, Shi K, Hirao M, Kaneshiro S, Morimoto T, Koizumi K, Yoshikawa H, Hashimoto J.

Abdel-Rahman MS, Alkady EA, Ahmed S. Menaquinone-7 as a novel pharmacological therapy in the treatment of rheumatoid arthritis: A clinical study. Eur J Pharmacol. 2015 Jun 11;761:273-278.

### Osteoarthritis

Osteoarthritis is caused by a wearing down of the joint. It is helped with the anti-inflammatories below and by SAM-e, which cushions the joints. SAM-e is available as a supplement or by eating raw kale (10 hours benefit).

Low vitamin D3 levels are associated with increased progression of osteoarthritis.

Vitamin D Deficiency Is Associated with Progression of Knee Osteoarthritis<sup>1,2</sup>

Fang Fang Zhang et al.

2014, doi: 10.3945/?jn.114.193227

J. Nutr. jn.114.193227

Tai chi for osteoarthritis

Tai chi reduced osteoarthritis knee pain as well as physical therapy & home exercise in one study.

## Comparative Effectiveness of Tai Chi Versus Physical Therapy for Knee Osteoarthritis: A Randomized Trial

Chenchen Wang et al.

Ann Intern Med. 2016;165(2):77-86.

DOI: 10.7326/M15-2143

### Spinal stenosis

PT might be a reasonable initial option for patients with symptomatic lumbar spinal stenosis who are being considered for surgery. For patients who do undergo surgery, microdecompression might be a better option than open laminectomy. Fish oil 2gm/day or spirulina taken with a meal with a vegetable may reduce pain by 60%. Topical magnesium & topical boswellia & ginger may help.

Delitto A et al. Surgery versus nonsurgical treatment of lumbar spinal stenosis: A randomized trial. Ann Intern Med 2015 Apr 7; 162:465. (<http://dx.doi.org/10.7326/M14-1420>)

Nerland US et al. Minimally invasive decompression versus open laminectomy for central stenosis of the lumbar spine: Pragmatic comparative effectiveness study. BMJ 2015 Apr 1; 350:h1603. (<http://dx.doi.org/10.1136/bmj.h1603>)

### Sciatica

Ginkgo biloba (standardized extract only) in a study in the Journal of Anesthesia on animal models of ruptured disk with nerve entrapment stopped the nerve pain of sciatica.

### Nightshade plants

Nightshade plants can trigger autoimmune disease responses. Avoiding the nightshade plants can often eliminate flareups.

Potatoes- the skin may be four times more reactive than the inside. Sweet potatoes & yams are safe.

Tomatoes- including tomatillos.

Garden peppers- including bell of all colors & hot chili peppers.

### Eggplant

### Tobacco

Spices & natural flavors may contain nightshades.

### Steroids & death

One study found that within 30 days of taking just one steroid pill, people had a 500% higher rate of potentially deadly sepsis, 300% higher rate of potentially deadly blood clots, and nearly 200% higher rate of bone fractures.

Short term use of oral corticosteroids and related harms among adults in the United States: population based cohort study

Akbar K Waljee et al.

BMJ 2017; 357 doi: <https://doi.org/10.1136/bmj.j1415>

<http://ihpi.umich.edu/news/common-drugs-uncommon-risks-higher-rate-serious-problems-seen-adults-who-take-short-term-steroids>

## Grounding

Grounding is simply walking barefoot on earth. Skin to earth contact transfers negative electrons which significantly reduce inflammation, stress and relieves pain. Grounding may help lower cardiovascular disease and death. Grounding appears to relieve muscle soreness and improve mood and sleep and reduce electric field sensitivity.

[http://articles.mercola.com/sites/articles/archive/2017/02/25/grounding-recharge-immune-system-slow-aging.aspx?utm\\_source=dnl&utm\\_medium=email&utm\\_content=ms1&utm\\_campaign=20170305Z1\\_UCM](http://articles.mercola.com/sites/articles/archive/2017/02/25/grounding-recharge-immune-system-slow-aging.aspx?utm_source=dnl&utm_medium=email&utm_content=ms1&utm_campaign=20170305Z1_UCM)

J Environ Public Health. 2012; 2012: 291541.

Published online 2012 Jan 12. doi: 10.1155/2012/291541

Earthing: Health Implications of Reconnecting the Human Body to the Earth's Surface Electrons

Gaétan Chevalier et al.

J Inflamm Res. 2015 Mar 24;8:83-96. doi: 10.2147/JIR.S69656. eCollection 2015.

The effects of grounding (earthing) on inflammation, the immune response, wound healing, and prevention and treatment of chronic inflammatory and autoimmune diseases.

Oschman JL et al.

J Altern Complement Med. 2013 Feb;19(2):102-10. doi: 10.1089/acm.2011.0820. Epub 2012 Jul 3.

Earthing (grounding) the human body reduces blood viscosity-a major factor in cardiovascular disease.

Chevalier G, Sinatra ST, Oschman JL, Delany RM.

J Altern Complement Med. 2010 Mar; 16(3): 265–273.

doi: 10.1089/acm.2009.0399

## Pilot Study on the Effect of Grounding on Delayed-Onset Muscle Soreness

Dick Brown, Gaétan Chevalier, and Michael Hill

Psychol Rep. 2015 Apr;116(2):534-42. doi: 10.2466/06.PR0.116k21w5. Epub 2015 Mar 6.

The effect of grounding the human body on mood.

Chevalier G.

J Altern Complement Med. 2007 Nov;13(9):955-67.

Can electrons act as antioxidants? A review and commentary.

Oschman JL

Applewhite R. "The effectiveness of a conductive patch and a conductive bed pad in reducing induced human body voltage via the application of earth ground." European Biology and Bioelectromagnetics 2005; 1: 23-40

[http://www.earthingoz.com.au/pdf/Applewhite\\_earthing\\_body\\_voltage\\_2005.pdf](http://www.earthingoz.com.au/pdf/Applewhite_earthing_body_voltage_2005.pdf)

Anti-inflammatories stop pain & speed healing of many injuries

Why anti-inflammatories?

### Inflammation

Our body's inflammatory response is part of our immune reaction to injuries. Back before we had antibiotics, when we got a penetrating wound injury we could die from infection, and our inflammation response helped to keep us from dying from the infection before we could fight the bacteria off. But now we know to clean & disinfect wounds and we can take antibiotics that are many times more effective against the bacterial infection. The inflammation response interferes with stem cells regrowing tissue & healing wounds, including nonpenetrating wounds. Often like in soft tissue injury like sprains the inflammation response sometimes causes most of the damage, significantly more than the initial injury. That's why elevating the ankle & icing it for 48 hours can significantly speed healing.

This inflammation response is small when we are young, which is why children heal so much faster from injuries. As we get older the inflammation response gets stronger & becomes more damaging. The inflammation response appears to be the main cause of disease & deterioration as we get older. Many medical researchers are beginning to believe that our body's inflammation response is the main cause of chronic pain, cancer, heart disease, diabetes, and Alzheimer's.

<http://content.time.com/time/magazine/article/0,9171,993419,00.html>

### Ageing

Researchers have found that low inflammation levels, not telomere lengths, appear to reduce ageing & increase lifespan.

Inflammation, but not telomere length, predicts successful ageing at extreme old age: a longitudinal study of semi-supercentenarians.

EBioMedicine. DOI: 10.1016/j.ebiom.2015.07.029

Near infrared therapy (NIR-A)

Near infrared therapy bulbs around 810-830nm wavelength (look for NIR-A label) appear to increase ATP energy production in tissue- reducing inflammation, speeding up healing times of injuries, wounds, & sore muscles by penetrating up to 9 inches (23cm). A 150W NIR-A infrared bulb can be bought for \$10-\$21 & used with a clampable lamp to target healing anywhere on the body 12 inches away for 15 minute applications every three hours. It should be pointed at bare skin as it doesn't appear to work through clothing. Doing it more frequently or longer than 15 minutes at a time or closer than 12 inches from the lamp appears to negate the benefits. Near infrared therapy has been used by doctors and trainers for years to increase metabolism, energy, circulation, mood, concentration, endurance, strength, recovery, flexibility and reduce eye injuries & diseases, body fat, inflammation, joint & muscle pain, anxiety, depression, ADHD, Alzheimer's & Parkinson's symptoms.

Lasers Med Sci. 2016 Jul 1. [Epub ahead of print]

What is the best moment to apply phototherapy when associated to a strength training program? A randomized, double-blinded, placebo-controlled trial : Phototherapy in association to strength training.

Vanin AA et al.

J Clin Laser Med Surg. 2001 Dec;19(6):305-14.

Effect of NASA light-emitting diode irradiation on wound healing.

Whelan HT et al.

Ger Med Sci. 2006; 4: Doc05.

PMCID: PMC2703221

Influence of water-filtered infrared-A (wIRA) on reduction of local fat and body weight by physical exercise

Frank Möckel et al.

J Appl Physiol (1985). 2006 Jul;101(1):283-8. Epub 2006 Apr 20.

Effect of low-level laser (Ga-Al-As 655 nm) on skeletal muscle fatigue induced by electrical stimulation in rats.

Lopes-Martins RA, Marcos RL, Leonardo PS, Prianti AC Jr, Muscará MN, Aimbire F, Frigo L, Iversen

VV, Bjordal JM.

ABOU-HALA, Andréia Zarzour et al. Effects of the infrared lamp illumination during the process of muscle fatigue in rats. Braz. arch. biol. technol. [online]. 2007, vol.50, n.3, pp.403-407. ISSN 1678-4324. <http://dx.doi.org/10.1590/S1516-89132007000300006>.

J Sports Med Phys Fitness. 2002 Dec;42(4):438-45.

Effect of linear polarized near-infrared light irradiation on flexibility of shoulder and ankle joints.

Demura S, Yamaji S, Ikemoto Y.

<http://articles.mercola.com/sites/articles/archive/2017/02/26/photobiomodulation.aspx>

<http://drlwilson.com/articles/SAUNALITE%20NIR%20BENEFITS.htm>

THE BENEFITS OF NEAR INFRARED ENERGY by Dr. Lawrence Wilson May 2010

[http://drlwilson.com/articles/sauna\\_therapy.htm](http://drlwilson.com/articles/sauna_therapy.htm)

Anti-inflammatories

Taking anti-inflammatories should decrease chronic pain, speed wound healing, and decrease cancer, heart disease, diabetes, and Alzheimer's. It turns out they do, but it depends completely on what type of anti-inflammatories & how much you can take of them.

FDA determines NSAIDS cause heart attacks, strokes, atrial fibrillation, and heart failure

Aspirin was made with salicylic acid, an extract from the bark of the willow tree and spiraea plant.

Aspirin is a cyclooxygenase-2 (COX-2) inhibitor which is why it helps to lower pain & inflammation. All NSAIDs (like ibuprofen & naproxen) are aspirin derivatives (as well as the the non-NSAID acetaminophen) & they are COX-2 inhibitors and also have aspirin's problem of thinning the blood & causing ulcers and/or stomach pain, & unlike aspirin they increase atrial fibrillation/irregular heartbeat, heart attacks, heart failure & strokes (naproxen lowers heart attacks but mildly increases strokes). them causes bleeding, ulcers, heart attacks, & strokes, as well as atrial fibrillation/irregular heartbeat. Aspirin increases the risk of hemorrhagic strokes. The FDA is recommending limited or no use of NSAIDs. Aspirin & the NSAIDS also slow wound healing by reducing new blood vessels to the injury site (angiogenesis).

Inhibition of angiogenesis by nonsteroidal anti-inflammatory drugs: Insight into mechanisms and implications for cancer growth and ulcer healing

Michael K. Jones et al.

Nature Medicine 5, 1418 – 1423 (1999)

doi:10.1038/70995

Studies on the mechanism of action of salicylate II. Retardation of wound healing by aspirin



K. H. Lee

DOI: 10.1002/jps.2600570633

Journal of Pharmaceutical Sciences

Volume 57, Issue 6, pages 1042–1043, June 1968

Morten Schmidt, Morten Lamberts, Anne-Marie Schjerning Olsen, Emil Fosbøll, Alexander Niessner, Juan Tamargo, Giuseppe Rosano, Stefan Agewall, Juan Carlos Kaski, Keld Kjeldsen, Basil S. Lewis, Christian Torp-Pedersen. Cardiovascular safety of non-aspirin non-steroidal anti-inflammatory drugs: review and position paper by the working group for Cardiovascular Pharmacotherapy of the European Society of Cardiology. European Heart Journal, 2016; ehv505 DOI: 10.1093/eurheartj/ehv505

NSAIDs appear to cause congestive heart failure

NSAIDs usage may lead to congestive heart failure at greater rates than even gastrointestinal issues.

Consumption of NSAIDs and the Development of Congestive Heart Failure in Elderly Patients An Underrecognized Public Health Problem FREE

John Page, MBBS(Hons); David Henry, MBChB

Arch Intern Med. 2000;160(6):777-784. doi:10.1001/archinte.160.6.777

NSAIDs appear to cause heart attacks

NSAIDs appear to increase heart attacks, even after one usage for the next 30 days, some up to 50%.

NSAIDs and cardiac arrest: Non-steroidal anti-inflammatory drug use is associated with increased risk of Out-of-hospital Cardiac Arrest: A nationwide Case-Time-Control study

Kathrine Bach Sondergaard Gunnar Gislason

European Heart Journal, Volume 38, Issue 23, 14 June 2017, Pages 1788–1789,  
<https://doi.org/10.1093/eurheartj/ehx267>

<https://www.fda.gov/Drugs/DrugSafety/ucm451800.htm>

NSAIDs appear to cause kidney cancer

Long term use of NSAIDs (except aspirin) appear to increase kidney cancer by 400% in a study of over 100,000 people for ten years..

Prospective evaluation of analgesic use and risk of renal cell cancer.

Cho E, Curhan G, Hankinson SE, Kantoff P, Atkins MB, Stampfer M, Choueiri TK.

Arch Intern Med. 2011 Sep 12;171(16):1487-93. doi: 10.1001/archinternmed.2011.356.

Kidney cancer: long-term use of nonaspirin NSAIDs increases RCC risk.

Fenner A.

Nat Rev Urol. 2011 Oct 4;8(11):590. doi: 10.1038/nrurol.2011.148.

Regular use of analgesics is a risk factor for renal cell carcinoma.

Gago-Dominguez M, Yuan JM, Castelao JE, Ross RK, Yu MC.

Br J Cancer. 1999 Oct;81(3):542-8.

Int J Cancer. 2016 Aug 1;139(3):584-92. doi: 10.1002/ijc.30108. Epub 2016 Apr 9.

Analgesic use and risk of renal cell carcinoma: A case-control, cohort and meta-analytic assessment.

Karami S. et al.

Over the counter NSAIDs:

Ibuprofen (Advil, Motrin IB, Nuprin)

ibuprofen and hydrocodone (Vicoprofen)

ibuprofen with oxycodone (Combunox)

Naproxen Sodium (Aleve)

Aspirin (Bayer, Bufferin, St. Joseph, and others)

Prescription:

celecoxib (Celebrex)

ibuprofen (prescription-strength)

nabumetone (Relafen)

naproxen sodium

naproxen (Naprosyn)

piroxicam (Feldene)

Other NSAIDs include:

diclofenac (Voltaren, Diclofenac Sodium XR, Cataflam, Cambia)

diflunisal

indomethacin (Indocin)

ketoprofen (Orudis, Ketoprofen ER, Oruvail, Actron, Orudis)

etodolac (Lodine)

fenoprofen (Nalfon)

flurbiprofen (Ansaid)

ketorolac (Toradol)

meclofenamate

mefenamic acid (Ponstel)

meloxicam (Mobic)

nabumetone

oxaprozin (Daypro)

fenoprofen (Nalfon)

sulindac (Clinoril)

salsalate (Disalcid, Amigesic, Marthritic, Salflex, Mono-Gesic, Anaflex, Salsitab)

tolmetin (Tolectin)

Diclofenac-Misoprostol (Arthrotec)

Do Anti-Inflammatories Have a Role in Wound Healing?

Salcido, Richard "Sal MD"

Advances in Skin & Wound Care:

March 2005 – Volume 18 – Issue 2 – p 65–66

<http://www.healthline.com/health/rheumatoid-arthritis/medications-list#NSAIDs3>

Acetaminophen- internal bleeding and liver damage

liver damage, severe autoimmune reactions, asthma, hearing loss, intestinal dysbiosis, stomach bleeding,

ohio state u blunts positive emotions

Acetaminophen (Tylenol) is one of the weakest painkillers, barely above placebo. It is damaging to the liver in relatively low amounts and causes 50,000 visits to the ER each year, 26,000 hospitalizations, 450 deaths, and causes asthma and when taken during pregnancy causes ADHD in children.

Acetaminophen was recently discovered to cause as much stomach bleeding and blood loss as the NSAIDs. Acetaminophen can also cause a severe autoimmune skin reaction, hearing loss, and intestinal disbiosis. blunting pleasant and painful psychological experiences.

Acetaminophen & emotional blunting

People who take acetaminophen may have a lowered emotional reaction to positive & negative events.

While this can reduce the enjoyment of positive experiences, this may be useful for people going through severe & temporary grief, pain, withdrawal symptoms. This may be a substitute for benzodiazepenes. Too often doctors prescribe benzodiazepenes when people are grieving, which makes people drunk (benzodiazepenes work on the same parts of the neuron/brain & is crossaddictive to alcohol). This doesn't help people deal with grief, only delays their grief often to a time when there are fewer social supports (after the wake and funeral) as their friends & family may be in a further stage of grieving. Taking acetaminophen temporarily instead may lessen the grief some without delaying dealing with the grief and without intoxication & without worries of potential addiction, rebound anxiety & insomnia that benzodiazepenes & alcohol bring.

NSAIDs & Alzheimers

The anti-inflammatory effect also helps prevent cancer, and as extensively studied with turmeric, Alzheimer's. The NSAIDS like aspirin have long showed promise in preventing Alzheimer's to a moderate degree, but the amounts likely needed for full prevention cause bleeding, ulcer, & liver side effects as well as heart attacks (all but aspirin & naproxen) & strokes (aspirin causes hemorrhagic strokes), and their high level of blood thinning can interfere with wound healing. The other (aspirin is a plant derivative) plant based COX-2 inhibitor alternatives below (turmeric, ginger, & astaxanthin) can be taken in large amounts & in combination, multiplying their effects against pain, cancer, heart disease, and Alzheimer's.

Cancer Lett. 2015 Aug 10; 364(2): 135–141.

doi: 10.1016/j.canlet.2015.05.005

PMCID: PMC4510144

Curcumin inhibits cancer stem cell phenotypes in ex vivo models of colorectal liver metastases, and is clinically safe and tolerable in combination with FOLFOX chemotherapy

Mark I. James et al.

NSAIDs and Alzheimer disease: Epidemiological, animal model and clinical studies

Patrick L. McGeer, Edith G. McGeer

Neurobiology of Aging

May 2007 Volume 28, Issue

Fatty Aspirin: A New Perspective in the Prevention of Dementia of Alzheimer's Type?

Pomponi, Massimiliano; Gioia, Annamaria D.; Bria, Pietro; Lucio Pomponi, Massimo Fabio

Current Alzheimer Research, Volume 5, Number 5, October 2008, pp. 422-431(10) 5, Pages 639–647

DOI: <http://dx.doi.org/10.1016/j.neurobiolaging.2006.03.013>

(also DHA)

Risk of Alzheimer's disease and duration of NSAID use

Walter F. Stewart, PhD, MPH, Claudia Kawas, MD, Maria Corrada, ScM and E. Jeffrey Metter, MD

doi: 10.1212/WNL.48.3.626

Neurology March 1997 vol. 48 no. 3 626-632

Nonsteroidal Antiinflammatory Drugs and the Risk of Alzheimer's Disease

Bas A. in 't Veld, M.D., Ph.D., Annemieke Ruitenberg, M.D., Ph.D., Albert Hofman, M.D., Ph.D., Lenore J. Launer, Ph.D., Cornelia M. van Duijn, Ph.D., Theo Stijnen, Ph.D., Monique M.B. Breteler, M.D., Ph.D., and Bruno H.C. Stricker, M.B., Ph.D.

N Engl J Med 2001; 345:1515-1521 November 22, 2001 DOI: 10.1056/NEJMoa010178

Aspirin in Alzheimer's disease (AD2000): a randomised open-label trial

The Lancet Volume 7, No. 1, p41–49, January 2008

DOI: [http://dx.doi.org/10.1016/S1474-4422\(07\)70293-4](http://dx.doi.org/10.1016/S1474-4422(07)70293-4)

European Journal of Clinical Pharmacology

August 2003, Volume 59, Issue 4, pp 313-319

Does aspirin protect against Alzheimer's dementia? A study in a Swedish population-based sample aged ≥80 years

Sven E. Nilsson, Boo Johansson, Sanna Takkinen, Stig Berg, Steven Zarit, Gerald McClearn, Arne Melander

Effect of non-steroidal anti-inflammatory drugs on risk of Alzheimer's disease: systematic review and meta-analysis of observational

Mahyar Etminan, Sudeep Gill, Ali Samii

BMJ 2003; 327 doi: <http://dx.doi.org/10.1136/bmj.327.7407.128> (Published 17 July 2003) Cite this as:  
BMJ 2003;327:128

Aspirin and COX-2 inhibitor use in patients with stage III colon cancer.

Ng K et al.

J Natl Cancer Inst. 2014 Nov 27;107(1):345. doi: 10.1093/jnci/dju345. Print 2015 Jan.

Wheat and inflammation

Our older wheats like spelt were eaten safely for centuries. Then to make it easier to knead without falling apart, wheat was hybridized to have ten times the gluten as before, gluten that is highly inflammatory & undigestible. It's amylopectin A also raises & drops blood sugar fast, increasing people's hunger along with gliadin for a calorie intake increase by 400 a day vs people who don't eat wheat. It increases diabetes, osteoporosis, dementia, heart disease, arthritis, schizophrenia and obesity.

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

<http://bottomlinepersonal.com/healthy-whole-wheat-is-linked-to-heart-disease-arthritis-and-dementia/>

Humans can't digest & break down this much gluten, and it causes major inflammation in the gastrointestinal tract. There are a lot of substances in wheat that cause inflammation, irritability, & overeating. When people get off of all wheat products, they often lose over ten pounds, lower their inflammation levels significantly, and their irritable bowel syndrome (IBS) goes away forever.

Fortunately there are a lot of gluten free products to experiment with, including gluten free breads.

<http://betterbreads.net/>

Ketogenesis to suppress inflammation (including brain inflammation)

Getting into a ketogenic state where the body is burning fat for energy appears to significantly lower brain & other inflammation. This can be done with a low carb/high fat diet, by using MCT oil exclusively, and by using the 12-18 hour diet.

Bioenergetic state regulates innate inflammatory responses through the transcriptional co-repressor CtBP

Yiguo Shen, David Kapfhamer, Angela M. Minnella, Ji-Eun Kim, Seok Joon Won, Yanting Chen, Yong Huang, Ley Hian Low, Stephen M. Massa & Raymond A. Swanson

Nature Communications 8, Article number: 624 (2017)

doi:10.1038/s41467-017-00707-0

<https://articles.mercola.com/sites/articles/archive/2017/10/09/ketogenic-diet-anti-inflammatory->

effects.aspx

<https://www.organicconsumers.org/news/ketogenic-diet-study-confirms-massive-anti-inflammatory-effects>

### Alpha lipoic acid (ALA)

There are 4000 studies on Pubmed & NIH and hundreds of thousands around the world on ALA.

Humans make alpha lipoic acid, but less and less as we get older. Perhaps because it's a natural chemical in our body and our foods, ALA has not been found to have any side effects or interaction effects in studies at any dose.

ALA appears to reduce inflammation and chronic pain and migraines/headaches, lumbar disk disease spinal injury nerve entrapment, burning mouth syndrome (chemotherapy), neuropathy & nerve pain..

ALA may reduce diabetic high blood sugar, triglycerides, insulin resistance, diabetes, cataracts (may reverse when applied topically), diabetic neuropathy within three weeks and increase insulin efficiency, blood capillary flow, and wound healing.

ALA appears to improve heart output, exercise tolerance, heart surgery outcomes and reduce heart disease, left ventricular dysfunction, heart failure, hypertension, arteriosclerosis, arteriosclerosis, and second heart attack risk.

ALA may reduce cirrhosis and fatty liver and may help people wake from hepatic coma from liver damage. It may reduce kidney damage and end stage kidney disease/inflammation/nerve dysfunction.

ALA appears to reduce multiple types of cancer

ALA can be used topically to reduce signs of skin aging and used internally reduce macular degeneration & cataracts.

ALA may help against hearing loss (age, noise) and restore lost sense of smell (like after sinus infection).

ALA may reduce elevation sickness and vitiligo.

ALA appears to chelate heavy metals in copper/lead/mercury/arsenic/antimony/cadmium/iron overload. It is used throughout the world for poisonings- cyanide, streptomycin, mushroom, radiation, and acetaminophen. ALA helps protect against environmental hormone disruption and organ damage and mitochondrial dysfunction.

ALA may be an immune modulator and help against chronic fatigue syndrome/fibromyalgia. ALA may slow neurodegenerative diseases like Alzheimer's, ALS, Parkinson's, and Lewy Body dementia.

The PDR for dietary supplements says ALA has no significant side effects with no known drug interactions (has sulfur). Studies have used 300mg-2400mg per day. Taking vitamin B6, vitamin E (mixed), vitamin C, omega 3 fatty acids (spirulina with a meal) concurrently may help ALAs effectiveness.

How to take?

The people I know use it in the morning upon wakening & it reduces cravings for sugar & can help weight loss. Then they take it before every meal or snack and take it in between if using it for pain & inflammation, 800mg in between & 1200-1600 mg before a meal.

Dr. Richard Becker with Cindy Becker "Your Health" 01/27/17 #1557 The Many Uses of ALA

A review of 103 studies:

Alpha-Lipoic Acid May Improve Symptomatic Diabetic Polyneuropathy

Tang, Junger et al.

Neurologist: May 2007 – Volume 13 – Issue 3 – pp 164-167

The Sensory Symptoms of Diabetic Polyneuropathy Are Improved With  $\alpha$ -Lipoic Acid

Alexander S. Ametov et al.

Diabetes Care March 2003 vol. 26 no. 3 770-776

Treatment of diabetic polyneuropathy with the antioxidant thioctic acid ( $\alpha$ -lipoic acid): A two year multicenter randomized double-blind placebo-controlled trial (ALADIN II)

M. Reljanovic, G. Reichel, K. Rett, M. Lobisch, K. Schuette, W. Möller, H.-J. Tritschler, H. Mehnert

Free Radical Research, 1999, Vol. 31, No. 3 : Pages 171-179

Alpha-Lipoic Acid and Diabetic Neuropathy Natalia Vallianou, Angelos Evangelopoulos, and Pavlos Koutalas Rev Diabet Stud. 2009 Winter; 6(4): 230–236.

Published online Feb 10, 2010. doi: 10.1900/RDS.2009.6.230

Carnosine as a Protective Factor in Diabetic Nephropathy

Association With a Leucine Repeat of the Carnosinase Gene CNBP1

Bart Janssen et al.

Diabetes August 2005 vol. 54 no. 8 2320-2327

doi: 10.2337/diabetes.54.8.2320

PLoS One. 2015; 10(3): e0119479.

Published online 2015 Mar 9. doi: [10.1371/journal.pone.0119479](https://doi.org/10.1371/journal.pone.0119479)

PMCID: PMC4353712



PMID: [25751285](#)

## Acetyl-L-Carnitine in the Treatment of Peripheral Neuropathic Pain: A Systematic Review and Meta-Analysis of Randomized Controlled Trials

### Palmitoylethanolamide (PEA) for inflammation, pain, and viral infections

PEA is a compound in small amounts in food and also made by the body that appears to significantly reduce pain & inflammation with no known dose limiting side effects or medication interactions in over 45 years of studies. It's effective dose appears to be 10-30mg PEA/kg body weight (up to 100mg of PEA/kg has been used safely). It has been found much more effective than opiates for pain, more effective than almost all NSAIDs, and even more effective than most NSAIDs + acetaminophen, all without apparent side or interaction effects. PEA has a 1.8 number needed to treat (NNT). Because of it's lack of side effects and interaction effects, it's number needed to harm is very likely over 100, and the ratio of NNH/NNT would be then over 50 (likelihood of help vs harm LHH), best for any painkiller found.

Any pain & inflammation aide that doesn't have side effects or interaction affects with medications may be safer to use before/during/after medical treatments like surgery & pregnancy with your doctor's approval.

Bandolier scale 2007

#### NSAIDs

Diclofenac 100 mg 1.8 NNT

Celecoxib 400 mg 2.1

Ibuprofen 400 mg 2.5

Naproxen 400 mg 2.7

Ibuprofen 200 mg 2.7

#### Opioids

Oxycodone 10 mg + acetaminophen 1000 mg 2.7

Morphine 10 mg 2.9

Oxycodone 5 mg + acetaminophen 325 mg 5.5

Tramadol 50 mg 8.3

<http://www.nsc.org/RxDrugOverdoseDocuments/Evidence-Efficacy-Pain-Medications.pdf>

Palmitoylethanolamide, a nutraceutical, in nerve compression syndromes: efficacy and safety in sciatic pain and carpal tunnel syndrome

Keppel Hesselink JM, Kopsky DJ

Journal of Pain Research 23 October 2015 Volume 2015:8 Pages 729—734

DOI <https://doi.org/10.2147/JPR.S93106>

Therapeutic utility of palmitoylethanolamide in the treatment of neuropathic pain associated with various pathological conditions: a case series

Keppel Hesselink JM, Hekker TA

Journal of Pain Research 26 October 2012 Volume 2012:5 Pages 437—442

DOI <https://doi.org/10.2147/JPR.S32143>

Treatment of chronic regional pain syndrome type 1 with palmitoylethanolamide and topical ketamine cream: modulation of nonneuronal cells

Keppel Hesselink JM, Kopsky DJ

Journal of Pain Research 21 March 2013 Volume 2013:6 Pages 239—245

<https://doi.org/10.2147/JPR.S42417>

Chronic idiopathic axonal neuropathy and pain, treated with the endogenous lipid mediator palmitoylethanolamide: a case collection

Keppel Hesselink JM

International Medical Case Reports Journal Volume 2013:6 Pages 49—53 DOI <https://doi.org/10.2147/IMCRJ.S51572>

Nestmann ER. Safety of micronized palmitoylethanolamide (microPEA): lack of toxicity and genotoxic potential. Food Science & Nutrition. 2017;5(2):292-309. doi:10.1002/fsn3.392.

### [Does Palmitoylethanolamide \(PEA\) Have Health Benefits?](#)

<https://en.wikipedia.org/wiki/Palmitoylethanolamide>

<http://www.nsc.org/RxDrugOverdoseDocuments/Evidence-Efficacy-Pain-Medications.pdf>

<https://palmitoylethanolamide4pain.com/about-2/>

Palmitoylethanolamide & autism

In two teens with autism, palmitoylethanolamide helped improve autistic symptoms significantly.

[Case Rep Psychiatry](#). 2015;2015:325061. doi: 10.1155/2015/325061. Epub 2015 Sep 29.

Beneficial Effects of Palmitoylethanolamide on Expressive Language, Cognition, and Behaviors in Autism: A Report of Two Cases.

Tumeric, Ginger, and Astaxanthin

Pain

Tumeric, ginger, & astaxanthin all are major anti-inflammatories and COX-2 inhibitors that don't have the heavy bleeding, ulcers, heart disease & strokes of the NSAIDs. All three prevent heart disease & strokes, ginger helps nausea & stomach upset and astaxanthin helps prevent & treat ulcers. Taking a high daily dose of these alternative anti-inflammatories that have much lower side effects than the NSAIDs alone or in combination has a profound effect on our health & well being. It helps at first with acute pain, and research shows that the anti-inflammation effect provides a protective cocoon for our stem cells to begin the healing process that otherwise gets disrupted by our maladaptive inflammatory response to injury. These three don't appear to interfere with the part of the injury response that signals our body to marshal it's resources to the injury site, but they do help to stop the extended inflammatory response that interferes with healing. Studies with turmeric & my & the people I've counseled experiences with ginger & astaxanthin as well shows it significantly speeds wound healing.

After a couple weeks of high anti-inflammatory usage most all the little aches & pains that we have gotten used to as we got older start to fade away, and our bodies regain much of the healing ability we had when we were much younger. Back, shoulder, neck pain, arthritis all start to go away and it becomes a rare situation where a pain lasts for more than a week, or an injury doesn't heal up very fast and with less intense & much more short lived pain.

The major immediate benefit to taking a high dose of anti-inflammatories (for those of us who are older) is we start to have many of the physical ability to bounce back from workouts & injuries we did when we were young. People in their forties & fifties can feel like they did at 20 years old.

The benefits for 20 year old athletes are much the same as football players have gotten for years by getting shots of Toradol (ketorolac), an injectable NSAID. It not only stopped the pain from minor injuries, it helped them heal faster from some injuries by stopping the body's inflammatory effect. But like all NSAIDs, it was hard on the liver & stomach, increased heart attacks, & caused internal bleeding which slowed healing of some bleeding sensitive injuries as well.

These herbal anti-inflammatories often by themselves and definately in smaller amounts in combination have such low/little/no side effects that people can take them at amounts that dampen down inflammation to extremely low levels, helping healing and preventing heart attacks, diabetes, cancer, and Alzheimer's. Turmeric also boosts mood in a number of people who take it while ginger lowers cortisol levels & stress.

Turmeric & ginger both thin the blood (mildly), lower blood sugar, & lower blood pressure.

Plant-derived health – the effects of turmeric and curcuminoids

S. Bengmark et al.

Nutr Hosp. 2009;24(3):273-281

ISSN 0212-1611 • CODEN NUHOEQ

Tumeric's benefits

Turmeric has to be taken with a little bit of black pepper in order for us to process the curcumin in the turmeric, which is the source of its benefits (see below).

Turmeric revives diseased kidneys, livers, increases weight loss & immunity, helps against candida, endometriosis, malaria, and improves chemotherapy recovery, heart surgery outcomes by 65%, and helps after a stroke. Turmeric appears to help with cancer, cardiovascular disease, arthritis, uveitis, ulcerative proctitis, Crohn's disease, ulcerative colitis, irritable bowel disease, tropical pancreatitis, peptic ulcer, gastric ulcer, idiopathic orbital inflammatory pseudotumor, oral lichen planus, gastric inflammation, vitiligo, psoriasis, acute coronary syndrome, atherosclerosis, diabetes, diabetic nephropathy, diabetic microangiopathy, lupus nephritis, renal conditions, acquired immunodeficiency syndrome,  $\beta$ -thalassemia, biliary dyskinesia, Dejerine-Sottas disease, cholecystitis, and chronic bacterial prostatitis.

AAPS J. 2013 Jan; 15(1): 195–218. 2012 Nov 10. doi: 10.1208/s12248-012-9432-8

Therapeutic Roles of Curcumin: Lessons Learned from Clinical Trials

Subash C. Gupta, Sridevi Patchva, and Bharat B. Aggarwal

Animal studies

Turmeric in animal studies also stops angina, coronary artery disease, viruses, bacteria, malaria, and protects the liver. It is a strong antifungal (anticandida). Turmeric chelates (flushes out) heavy metals. Turmeric helps against endometriosis. It boosts brain energy by 50%. Turmeric protects the body against the side effects of diabetes. With vitamin D3 it helps wound healing. It protects the kidneys. It helps against COPD, acute lung injury, allergic asthma, and cystic fibrosis. The cancers that respond to turmeric are neuroblastoma, head & neck, oral cavity, esophageal, breast, liver, prostate, biliary tract, colorectal, leukemia, multiple myeloma, intestinal tract, metastasizing cancer.

In human studies turmeric helps against ulcerative colitis, abdominal pain, inflammatory bowel disease, lowers PSA levels, is an anti-inflammatory, slows prostate cancer, slows end stage kidney disease, reduces surgical pain, protects the heart including against heart attack, prevents type II diabetes, and slows multiple myeloma. Turmeric doesn't interfere with the metabolizing of other medicines.

Turmeric is as effective as Prozac for depression, but much safer and with far fewer side effects.

Turmeric works better than NSAIDs against arthritis.

Doctor Richard L. Becker, "Your Health" Host

According to Dr. Al Sears turmeric

Reverses memory loss from late-stage Alzheimer's in just three months — Journal of Alzheimer's Research and Therapy

Kills cancer stem cells ("the root cause of cancer") — Journal of Anticancer Research

Shrinks tumors with 81% success rate — Journal of Nutritional Biochemistry

Halts the onset of Type 2 Diabetes with 100% success — Journals of the American Diabetes Association

Reduces amyloid plaque in the brain by 50%... the hallmark of Alzheimer's disease — Journal of Biological Chemistry

Relieves arthritis joint inflammation, swelling and destruction — Journal of Arthritis and Rheumatism

Cuts breast cancer rates in half — Johns Hopkins University

Shrinks pancreatic tumors by 42% — Journal of Anticancer Research

Lowers heart attack rate post-bypass by 65% — The American Journal of Cardiology

Repairs damage from spinal cord injury and preserves walking ability — Journal of Neurosurgery

Reverses Type 1 diabetes — Journal of Diabetology and Metabolic Syndrome

Repairs brain damage caused by neurodegenerative diseases like Alzheimer's and Parkinson's — Journal of Stem Cell Research and Therapy

Prolongs lifespan by 25% — University of Notre Dame researchers

Activates cancer-killing mechanisms in human saliva — Clinical Cancer Research

Kills "chemo proof" cancer cells — Journal of Carcinogenesis

Eliminates symptoms of hard-to-treat atypical depression — double-blind, placebo-controlled trial published in Journal of Affective Disorders

Reduces arthritis joint pain by 60%... and joint swelling by 73% — double-blind, placebo-controlled study in the Journal of Phytotherapy Research

Stops the onset of cataracts... the #1 cause of blindness — Journal of Investigative Ophthalmology and Vision Science

Lowers triglyceride levels by 65%... a more important factor in heart disease than LDL ("bad") cholesterol — Journal of Phytotherapy Research

Eliminates symptoms of Irritable Bowel Syndrome (IBS) with 60% success — Journal of Alternative

and Complementary Medicine

Reverses Major Depressive Disorder (MDD) in 6 weeks— Journal of Clinical Psychopharmacology

Asia's Wonder Spice:

The \$1 Cure for Every Disease...Without Side Effects

Dr. Al Sears

Role of curcumin in systemic and oral health: An overview

Monika Nagpal, Shaveta Sood J Nat Sci Biol Med. 2013 Jan-Jun; 4(1): 3–7. doi: 10.4103/0976-9668.107253

Cancer Lett. 2015 Aug 10; 364(2): 135–141.

doi: 10.1016/j.canlet.2015.05.005

PMCID: PMC4510144

Curcumin inhibits cancer stem cell phenotypes in ex vivo models of colorectal liver metastases, and is clinically safe and tolerable in combination with FOLFOX chemotherapy

Mark I. James et al.

<http://authoritynutrition.com/top-10-evidence-based-health-benefits-of-turmeric/>

Pain Control & turmeric

500mg of turmeric (the amount in a 00 size capsule) kills pain and stops inflammation at least as well as 200mg of ibuprophen and better than 50mg diclofenac (Voltaren) with far less side effects.

Modulation Of Inflammatory Mediators By Ibuprofen And Curcumin Treatment During Chronic Inflammation In Rat

Manish Banerjeea, L. M. Tripathib, V. M. L. Srivastavab, Anju Puric & Rakesh Shuklaa

Immunopharmacology and Immunotoxicology

Volume 25, Issue 2, 2003 pages 213-224

DOI: 10.1081/IPH-120020471

A Randomized, Pilot Study to Assess the Efficacy and Safety of Curcumin in Patients with Active Rheumatoid Arthritis

Binu Chandran and Ajay Goel

DOI: 10.1002/ptr.4639

Phytotherapy Research

Volume 26, Issue 11, pages 1719–1725, November 2012

Aggarwal BB. Curcumin-free tumeric exhibits anti-inflammatory and anticancer activities: Identification of novel components of tumeric. *Mol Nutr Food Res*. 2013; 57:1529-42.

Curcumin: A natural antiinflammatory agent.

Kohli K, Ali J, Ansari M J, Raheman Z.

*Indian J Pharmacol* 2005;37:141-7

Turmeric/curcumin and exercise

Turmeric/curcumin helps exercise recovery significantly.

Sciberras, J. N., Galloway, S. D., Fenech, A., Grech, G., Farrugia, C., Duca, D., & Mifsud, J. (2015). The effect of turmeric (Curcumin) supplementation on cytokine and inflammatory marker responses following 2 hours of endurance cycling. *Journal of the International Society of Sports Nutrition*, 12(1), 1.

Davis, J. M., Murphy, E. A., Carmichael, M. D., Zielinski, M. R., Groschwitz, C. M., Brown, A. S., ... & Mayer, E. P. (2007). Curcumin effects on inflammation and performance recovery following eccentric exercise-induced muscle damage. *American Journal of Physiology-Regulatory, Integrative and Comparative Physiology*, 292(6), R2168-R2173.

<http://www.bodybuilding.com/content/4-spices-that-enhance-your-workout-recovery.html>

Depression & Turmeric/curcumin

Turmeric/curcumin also works on the MAO system and is as strong an antidepressant as Prozac in the people it works for, yet far safer because unlike Prozac & other SRIs as it doesn't raise serotonin as artificially high but more mildly raises serotonin, norepinephrine & dopamine for a combined effect.

Turmeric (curcumin), depression, and mania

Research shows that inflammatory cytokines are significantly elevated in both mania & depression in people with bipolar mood disorder, as well as postpartum & melancholic depression. Taking the spice turmeric (with a little black pepper) or curcumin extract, ginger, or astaxanthin- all anti-inflammatories- can help lift the depression & make the depression responsive to antidepressants. Turmeric/curcumin works as an antidepressant independent of its anti-inflammatory benefits in a number of people, as well.

Multiple antidepressant potential modes of action of curcumin: a review of its anti-inflammatory, monoaminergic, antioxidant, immune-modulating and neuroprotective effects

Adrian L Lopresti, Sean D Hood, Peter D Drummond

J Psychopharmacol December 2012 vol. 26 no. 12 1512-1524

doi: 10.1177/0269881112458732

## TAKING ROOT

Marano, Daniel A.

Psychology Today; Sep/Oct 2015, Vol. 48 Issue 5, p37

Is there a role for curcumin in the treatment of bipolar disorder?

Elisa Brietzke et al.

Medical Hypotheses

May 2013 Volume 80, Issue 5, Pages 606–612

DOI: <http://dx.doi.org/10.1016/j.mehy.2013.02.001>

<http://www.highexistence.com/boost-brain-harnessing-neurogenesis/>

<http://www.collective-evolution.com/2013/07/31/study-finds-turmeric-is-effective-as-prozac-for-treating-depression/>

<http://www.power-of-turmeric.com/curcumin-and-depression.html>

<http://www.newsmaxhealth.com/Health-News/curcumin-turmeric-spice-antidepressant/2013/10/18/id/531801/>

<http://health.yahoo.net/experts/dayinhealth/golden-spice-life-brings-health-and-happiness>

<http://www.turmericforhealth.com/turmeric-benefits/can-turmeric-help-in-depression>

## Antidepressant effectiveness

The best predictor of antidepressant nonresponders is a high inflammation level. Inflammation appears to be a likely cause of much depression as well. Lowering inflammation by taking herbal anti-inflammatories may significantly improve depression and antidepressive benefits as well.

Comparison of cytokine levels in depressed, manic and euthymic patients with bipolar disorder

Elisa Brietzke et al.

Journal of Affective Disorders

August 2009 Volume 116, Issue 3, Pages 214–217



Inflammatory activation is associated with a reduced glucocorticoid receptor alpha/beta expression ratio in monocytes of inpatients with melancholic major depressive disorder

L A Carvalho et al.

Translational Psychiatry (2014) 4, e344; doi:10.1038/tp.2013.118

Inflammatory conditions may precipitate or perpetuate depression, but the precise relationship is unclear

Maria Almond

Current Psychiatry 2013 June;12(6):24-32.

Dowlati Y, Herrmann N, Swardfager W, et al. A meta-analysis of cytokines in major depression. Biol Psychiatry. 2010;67(5):446-457.

Maes M, Bosmans E, De Jongh R, et al. Increased serum IL-6 and IL-1 receptor antagonist concentrations in major depression and treatment resistant depression. Cytokine. 1997;9(11):853-858.

Raison CL, Borisov AS, Broadwell SD, et al. Depression during pegylated interferon-alpha plus ribavirin therapy: prevalence and prediction. J Clin Psychiatry. 2005;66(1):41-48.

Capuron L, Raison CL, Musselman DL, et al. Association of exaggerated HPA axis response to the initial injection of interferon-alpha with development of depression during interferon-alpha therapy. Am J Psychiatry. 2003;160(7):1342-1345.

Eisenberger NI, Berkman ET, Inagaki TK, et al. Inflammation-induced anhedonia: endotoxin reduces ventral striatum responses to reward. Biol Psychiatry. 2010;68(8):748-754.

Pasco JA, Nicholson GC, Williams LJ, et al. Association of high-sensitivity C-reactive protein with de novo major depression. Br J Psychiatry. 2010;197(5):372-377.

Raison CL, Rutherford RE, Woolwine BJ, et al. A randomized controlled trial of the tumor necrosis factor antagonist infliximab for treatment-resistant depression: the role of baseline inflammatory biomarkers. JAMA Psychiatry. 2013;70(1):31-41.

Martinez JM, Garakani A, Yehuda R, et al. Proinflammatory and "resiliency" proteins in the CSF of patients with major depression. Depress Anxiety. 2012;29(1):32-38.

Turmeric & diabetes

Turmeric helps blood sugar, cholesterol, triglycerides, diabetes, and wound healing. Turmeric prevents diabetes, treats diabetes, and lowers the side effects of diabetes.

Dietary Curcumin Significantly Improves Obesity-Associated Inflammation and Diabetes in Mouse Models of Diabetes

Stuart P. Weisberg, Rudolph Leibel, and Drew V. Tortoriello

Endocrinology Volume 149, Issue 7

DOI: <http://dx.doi.org/10.1210/en.2008-0262>

Effects of curcumin on retinal oxidative stress and inflammation in diabetes

Renu A Kowluru, Mamta Kanwar

Nutrition & Metabolism 2007, 4 8

doi:10.1186/1743-7075-4-8

Amelioration of renal lesions associated with diabetes by dietary curcumin in streptozotocin diabetic rats

P. Suresh Babu, K. Srinivasan

Molecular and Cellular Biochemistry

April 1998, Volume 181, Issue 1-2, pp 87-96

Curcumin supplementation could improve diabetes-induced endothelial dysfunction associated with decreased vascular superoxide production and PKC inhibition

Sirada Rungseesantivanon, Naris Thenchaisri, Preecha Ruangvejvorachai, Suthiluk Patumraj

BMC Complementary and Alternative Medicine 2010, 10:57

doi:10.1186/1472-6882-10-57

Curcumin prevents diabetes-associated abnormalities in the kidneys by inhibiting p300 and nuclear factor- $\kappa$ B

Jane Chiu, Zia A. Khan, Hana Farhangkhoei, Subrata Chakrabarti

Nutrition

Volume 25, Issue 9, September 2009, Pages 964–972

Curcumin Extract for Prevention of Type 2 Diabetes

Somlak Chuengsamarn, et al.

Diabetes Care November 2012 vol. 35 no. 11 2121-2127

doi: 10.2337/dc12-0116

### Turmeric & spinal injury

In a meta-analysis of eight rat studies, the higher the turmeric dosage (as curcumin) , the greater the neurological function and recovery.

### Neurological Recovery and Antioxidant Effects of Curcumin for Spinal Cord Injury in the Rat: A Network Meta-Analysis and Systematic Review

Yao Min, Yang Long, Wang Jing, Sun Yue-li, Dun Rong-liang, Wang Yong-jun, and Cui Xue-jun.  
Journal of Neurotrauma. March 2015, 32(6): 381-391. doi:10.1089/neu.2014.3520.

### Turmeric & cystic fibrosis

Turmeric also thins mucus in cystic fibrosis & helps other side effects.

### Curcumin, a Major Constituent of Turmeric, Corrects Cystic Fibrosis Defects

Marie E. Egan, Marilyn Pearson, Scott A. Weiner, Vanathy Rajendran, Daniel Rubin, Judith Glöckner-Pagel, Susan Canny, Kai Du, Gergely L. Lukacs, Michael J. Caplan

Science 23 April 2004:

Vol. 304 no. 5670 pp. 600-602

DOI: 10.1126/science.1093941

### Turmeric & blood clots & strokes

Tumeric (in curcuma oil form) was four times more effective in preventing thrombosis (blood clots) as aspirin or warfarin (Coumadin) in one animal study. Turmeric caused only 1/4 of the bleeding as aspirin in equivalent doses for preventing blood clots (thrombosis), making turmeric four times better than aspirin for thrombosis, inflammation, and pain. Turmeric works to reduce adenosine diphosphate (ADP), collagen and thrombin-induced platelet aggregation. Turmeric had no effect on coagulation parameters (thrombin time, prothrombin time, and activated partial thromboplastin time), which may explain why it only causes 1/4th the bleeding of aspirin at equivalent effective levels. Since aspirin & warfarin are equivalent, turmeric is far superior than aspirin or warfarin in the below studies in preventing clots without causing hemorrhage.

Turmeric prevents ischemic strokes when given preemptively and prevents damage when given after a stroke.

Anti-platelet effects of Curcuma oil in experimental models of myocardial ischemia-reperfusion and thrombosis.

Prakash P, Misra A, Surin WR, Jain M, Bhatta RS, Pal R, Raj K, Barthwal MK, Dikshit M.

Thromb Res. 2011 Feb;127(2):111-8. doi: 10.1016/j.thromres.2010.11.007. Epub 2010 Dec 8.

Anticoagulant activities of curcumin and its derivative.

Kim DC1, Ku SK, Bae JS.

BMB Rep. 2012 Apr;45(4):221-6.

Neuroprotective and neurotrophic curcuminoids to treat stroke: a translational perspective

Paul A Lapchak

Expert Opinion on Investigational Drugs Volume 20, Issue 1, 2011 pages 13-221

DOI: 10.1517/13543784.2011.542410

Inhibitory effect of various Thai natural plants ethanolic extracts on platelet aggregation and blood coagulation in vitro

Suwit Duangmano, Surangkana Wonkngam, Ponghathai Ladchantha, Warissara Palanan, Ornkamon Wongtagan

Bulletin of Chaingmai Associated Medical Sciences Vol 49, No 1

Curcuminoids Limit Neutrophil-Mediated Reperfusion Injury in Experimental Stroke by Targeting the Endothelium

Janet L. Funk et al.

Microcirculation Volume 20, Issue 6, pages 544–554, August 2013

DOI: 10.1111/micc.12054

5. Thiyagarajan M, Sharma SS. Neuroprotective effect of curcumin in middle cerebral artery occlusion induced focal cerebral ischemia in rats. Life Sci.74(8), 969–985 (2004)

TURMERIC PROTECTS THE BRAIN AFTER STROKE BY BLOCKING INTRAVASCULAR INFLAMMATION

Ritter, Leslie S

<http://hdl.handle.net/10755/157340>

Neuroprotective efficacy and therapeutic window of curcuma oil: in rat embolic stroke model

Preeti Dohare et al.

BMC Complementary and Alternative Medicine20088:55

DOI: 10.1186/1472-6882-8-55

Jiang J, Wang W, Sun YJ, Hu M, Li F, Zhu DY. Neuroprotective effect of curcumin on focal cerebral

ischemic rats by preventing blood–brain barrier damage. *Eur. J. Pharmacol.* 561(1–3), 54–62 (2007).

Tsz-Shan Kam, Cho-Yee Wong, Pui-Long Kwan, Wing Fat-Yiu, Sin-Ming Chiu, Shun-Wan Chan, Kit-San Yuen, and Robbie Chan. *Journal of Medicinal Food*. January 2012, 15(2): 190-199.  
doi:10.1089/jmf.2011.1625.

Martin, Wayne. “Curcumin (turmeric) to prevent blood clots.” *Townsend Letter for Doctors and Patients* Apr. 2004: 115. Academic OneFile. Web. 20 Feb. 2016

Srivastava KC, Bordia A, Verma SK. Curcumin, a major component of food spice turmeric (*Curcuma longa*) inhibits aggregation and alters eicosanoid metabolism in human blood platelets. *Prost Leuk Essential Fatty Acids*. 1995;52:223–227

Turmeric improves post-prandial working memory in pre-diabetes independent of insulin

*Asia Pacific Journal of Clinical Nutrition*

Volume 23 Issue 4 (Dec 2014)

Lee, Meei-Shyuan et al.

Curry Consumption and Cognitive Function in the Elderly

Tze-Pin Ng et al.

*Am. J. Epidemiol.* (1 November 2006) 164 (9): 898-906. doi: 10.1093/aje/kwj267

[http://www.medwirenews.com/62/90999/Thrombosis/Turmeric\\_extract\\_shows\\_antiplaetlet\\_activity.html](http://www.medwirenews.com/62/90999/Thrombosis/Turmeric_extract_shows_antiplaetlet_activity.html)

<http://www.sciencedirect.com/science/article/pii/S0006295299002063>

<http://www.sciencedirect.com/science/article/pii/S0049384810006031>

<http://draxe.com/turmeric-benefits/>

Turmeric & cancer

Turmeric appears to help prevent & treat cancer.

Dietary Turmeric Potentially Reduces the Risk of Cancer

Amanda Hutchins-Wolfbrandt, Anahita M Mistry

*Asian Pacific J Cancer Prev*, 12, 3169-3173

Strimpakos AS, Sharma RA. Curcumin: preventive and therapeutic properties in laboratory studies and clinical trials. *Antioxid. Redox. Signal.* 10(3), 511–545 (2008).

Turmeric & obesity

Turmeric helps to prevent & treat inflammation, obesity, & metabolic diseases.

Targeting Inflammation-Induced Obesity and Metabolic Diseases by Curcumin and Other Nutraceuticals

Bharat B. Aggarwal

Annu Rev Nutr. 2010 Aug 21; 30: 173–199.

doi: 10.1146/annurev.nutr.012809.104755

PMCID: PMC3144156

NIHMSID: NIHMS307506

Turmeric appears safe. It mildly thins the blood and can cause nausea. It can be temporarily stopped before surgery, with astaxanthin a good substitute. Caution is recommended for use during pregnancy, GERD, gallstones, or bile duct obstruction.

<http://www.webmd.com/vitamins-supplements/ingredientmono-662-turmeric.aspx?activeingredientid=662&activeingredientname=turmeric>

Turmeric, Parkinson's & Alzheimer's

Turmeric works to prevent and treat Parkinson's disease and Alzheimer's disease, and the greater the reported usage the better performance on mental function tests.

Curcumin inhibition of JNKs prevents dopaminergic neuronal loss in a mouse model of Parkinson's disease through suppressing mitochondria dysfunction

Jing Pan, Hui Li, Jian-Fang Ma, Yu-Yan Tan, Qin Xiao, Jian-Qing Ding, Sheng-Di Chen

Translational Neurodegeneration 2012, 1:16 doi:10.1186/2047-9158-1-16

Curcumin, the active constituent of turmeric, inhibits amyloid peptide-induced cytochemokine gene expression and CCR5-mediated chemotaxis of THP-1 monocytes by modulating early growth response-1 transcription factor

Ranjit K. Giri, Vikram Rajagopal and Vijay K. Kalra

DOI: 10.1111/j.1471-4159.2004.02800.x

Journal of Neurochemistry Volume 91, Issue 5, pages 1199–1210, December 2004

Curcumin treatment alleviates the effects of glutathione depletion in vitro and in vivo: Therapeutic implications for Parkinson's disease explained via in silico studies

Balusamy Jagatha, Rajeswara Babu Mythri, Shireen Vali, M.M. Srinivas Bharath

Free Radical Biology and Medicine

Volume 44, Issue 5, 1 March 2008, Pages 907–917

doi:10.1016/j.freeradbiomed.2007.11.011

The effect of curcumin (turmeric) on Alzheimer's disease: An overview

Shrikant Mishra, Kalpana Palanivelu

Ann Indian Acad Neurol. 2008 Jan-Mar; 11(1): 13–19.

doi: 10.4103/0972-2327.40220

Curcumin: A Potential Neuroprotective Agent in Parkinson's Disease

R B. Mythri, M. M. Srinivas Bharath

Current Pharmaceutical Design

VOLUME: 18 ISSUE: 1 pp.91-99

DOI: 10.2174/138161212798918995

Curcumin Inhibits Formation of Amyloid  $\beta$  Oligomers and Fibrils, Binds Plaques, and Reduces Amyloid in Vivo\*

Fusheng Yang

The Journal of Biological Chemistry, 280, 5892-5901

doi: 10.1074/jbc.M404751200

Curcumin: a potential neuroprotective agent in Parkinson's disease.

Mythri RB1, Bharath MM.

Curr Pharm Des. 2012;18(1):91-9.

1 $\alpha$ ,25-dihydroxyvitamin D3 interacts with curcuminoids to stimulate amyloid-beta clearance by macrophages of Alzheimer's disease patients.

Masoumi A1, Goldenson B, Ghirmai S, Avagyan H, Zaghi J, Abel K, Zheng X, Espinosa-Jeffrey A, Mahanian M, Liu PT, Hewison M, Mizwickie M, Cashman J, Fiala M.

J Alzheimers Dis. 2009;17(3):703-17. doi: 10.3233/JAD-2009-1080.

Curry Consumption and Cognitive Function in the Elderly

Tze-Pin Ng et al.

Am. J. Epidemiol. (1 November 2006) 164 (9): 898-906. doi: 10.1093/aje/kwj267

<http://www.life-enhancement.com/magazine/article/995-turmeric-is-the-spice-of-life>

<http://articles.mercola.com/sites/articles/archive/2013/07/08/curcumin-vs-drugs-for-parkinsons.aspx>

<http://msutoday.msu.edu/news/2012/curcumin-shows-promise-in-attacking-parkinson/>

<http://parkinsonsand5http.blogspot.com/2012/06/update-on-curcumins-potential-for.html>

<http://www.realnatural.org/can-turmeric-prevent-alzheimers-and-parkinsons/>

Turmeric works to prevent and treat Parkinson's disease.

<http://www.sciencedirect.com/science/article/pii/S0891584907007903>

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2781139/>

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3665200/>

<http://www.eurekaselect.com/76132/article> click on download

<http://www.ncbi.nlm.nih.gov/pubmed/22211691>

Turmeric & safety

Turmeric appears safe. It mildly thins the blood and can cause nausea. As with preventing blood clots, its far safer medically to use turmeric in place of warfarin, rather than let warfarin displace the use of turmeric. In the least the dosage of warfarin can be adjusted to accommodate the far more effective turmeric. It doesn't need to be but can be temporarily stopped before surgery, with astaxanthin a good substitute. Caution is recommended for heavy use during pregnancy, GERD, gallstones, or bile duct obstruction.

<http://www.webmd.com/vitamins-supplements/ingredientmono-662-turmeric.aspx?activeingredientid=662&activeingredientname=turmeric>

Ginger

Ginger, a spice used in cooking as well, is in the same family as turmeric and is also a COX-2 inhibitor that stops pain & inflammation and works against anxiety & stress by lowering cortisol and is as strong an antinauseant as any prescription drug.

Ginger—an herbal medicinal product with broad anti-inflammatory actions.

Grzanna R1, Lindmark L, Frondoza CG.



J Med Food. 2005 Summer;8(2):125-32.

Zingiber officinale: A Potential Plant against Rheumatoid Arthritis

Abdullah Al-Nahain, Rownak Jahan, and Mohammed Rahmatullah

Arthritis. 2014; 2014: 159089.

doi: 10.1155/2014/159089

PMCID: PMC4058601

Ginger & nausea

The other benefits of ginger are it is better an antinauseant than almost any prescription drug. It is as effective against migraines as Sumatriptan but with far fewer side effects.

Ginger & diabetes

When taking three grams of dry ginger powder for 30 days, diabetic participants had a significant reduction in blood glucose, triglyceride, total cholesterol, and LDL cholesterol. Ginger also has also been established to have a protective effect against diabetes complications, including offering protection to the diabetic's liver, kidneys, central nervous system, and eyes.

9 Evid Based Complement Alternat Med. 2012; 2012: 516870

Ginger & respiratory tract

Ginger is a bronchiodilator for asthma. Ginger helps with upper respiratory tract infection, bronchitis, and coughing.

Ginger attenuates acetylcholine-induced contraction and Ca<sup>2+</sup> signalling in murine airway smooth muscle cells

Muhammad N. Ghayur,<sup>a</sup> Anwar H. Gilani,<sup>b</sup> Luke J. Janssena

Canadian Journal of Physiology and Pharmacology, 2008, 86(5): 264-271, 10.1139/Y08-030

Inhibitory activity of ginger rhizome on airway and uterine smooth muscle preparations.

Ghayur MN, Gilani AH.

Eur. Food Res. Technol. 2007 224: 477-481

Ginger & other benefits

Ginger helps menstrual cramps, high blood pressure, liver damage, arthritis and muscle pain and gas.

Ginger lowers blood pressure through blockade of voltage-dependent calcium channels.

Ghayur MN, Gilani AH.

J. Cardiovasc. Pharmacol. 2005. 45: 74-80

Cardiovascular effects of ginger aqueous extract and its phenolic constituents are mediated through multiple pathways.

Ghayur MN, Gilani AH, Afridi MB, Houghton PJ.

Vascul Pharmacol. 2005 Oct;43(4):234-41

Pharmacological basis for the medicinal use of ginger in gastrointestinal disorders.

Ghayur MN, Gilani AH.

Dig. Dis. Sci. 2005 50: 1889-1897

Black, C. D., Herring, M. P., Hurley, D. J., & O'Connor, P. J. (2010). Ginger (*Zingiber officinale*) reduces muscle pain caused by eccentric exercise. *The Journal of Pain*, 11(9), 894-903.

<http://www.medicalnewstoday.com/articles/265990.php>

<http://www.bodybuilding.com/content/4-spices-that-enhance-your-workout-recovery.html>

Ginger improves cognitive function in middle-aged women, protects against respiratory viruses, reduces vertigo, enhances fat digestion and absorption, protects against toxic effects of environmental chemicals, such as parabens, helps prevent heart attacks, relieves arthritis pain as well as Indomethacin, prevents and treats nonalcoholic fatty liver disease (NAFLD)<sup>25</sup>, fights drug-resistant bacterial and fungal infections, reduces damage and memory loss associated with small stroke, protects against the DNA-damaging effects of radiation exposure, and fights bacterial diarrhea.

<http://articles.mercola.com/sites/articles/archive/2014/06/30/ginger-health-benefits.aspx>

Ginger helps against nausea, inflammation, cancer, and improves immune function.

<http://www.whfoods.com/genpage.php?tname=foodspice&dbid=72>

Ginger appears safe. It may cause heartburn. It appears safe for treating nausea in pregnancy. It can mildly thin the blood, and lower blood sugar.

<http://www.webmd.com/vitamins-supplements/ingredientmono-961-ginger.aspx?activeingredientid=961&activeingredientname=ginger>

## Astaxanthin

Astaxanthin comes from an algae that makes grey salmon & white flamingos pink. Its a major anti-inflammatory and antioxidant (the only one known that doesn't become pro-oxidant at high doses). It needs to be taken with a meal or with a little vegetable oil as its fat soluble (needs a little fat to get the full benefit). Taking it

with sunflower lecithin may be most effective, especially liposomally (mixed with the lecithin in an ultrasound cleaner) It protects against asthma, diabetes, & heart disease. Astaxanthin appears to prevent & treat carpal tunnel syndrome, stop soreness after workouts or injuries, help male & female fertility & reduces stillborn pregnancies.

#### Anti-inflammatory

Astaxanthin not only affects the COX 2 pathway, it suppresses serum levels of nitric oxide, interleukin 1B, prostaglandin E2, C Reactive Protein (CRP) and TNF-alpha (tumor necrosis factor alpha. Natural astaxanthin was shown to reduce CRP by more than 20 percent in only eight weeks. The American Heart Association claims CRP is a key indicator of heart disease.

Astaxanthin should be taken in its natural form. Synthetic astaxanthin, like fish farms often feed to their salmon, is many times less effective than natural astaxanthin.

#### Astaxanthin: A Novel Potential Treatment for Oxidative Stress and Inflammation in Cardiovascular Disease

Fredric J. Pashkow, David G. Watumull, Charles L. Campbell

The American Journal of Cardiology

Volume 101, Issue 10, Supplement, 22 May 2008, Pages S58–S68

Haematococcus astaxanthin: applications for human health and nutrition

Martin Guerin, Mark E Huntley, Miguel Olaizola

Trends in Biotechnology

Volume 21, Issue 5, May 2003, Pages 210–216

doi:10.1016/S0167-7799(03)00078-7

Astaxanthin decreased oxidative stress and  
inflammation and enhanced immune response  
in humans

Jean Soon Park, Jong Hee Chyun, Yoo Kyung Kim, Larry L Line, Boon P Chew

Nutrition & Metabolism 2010, 7:18

#### Astaxanthin & heart health

Astaxanthin prevents skeletal & cardiac damage during exercise (and soreness). Astaxanthin protects the heart muscle & reduces blood pressure.

Wataru Aoi, Yuji Naito, Kunihiro Sakuma, Masashi Kuchide, Harukuni Tokuda, Takashi Maoka, Shinya

Toyokuni, Shigenori Oka, Masahiro Yasuhara, and Toshikazu Yoshikawa. Antioxidants & Redox Signaling. February 2003, 5(1): 139-144. doi:10.1089/152308603321223630.

#### Astaxanthin in Cardiovascular Health and Disease

Robert G. Fassett and Jeff S. Coombes

Molecules 2012, 17(2), 2030-2048; doi:10.3390/molecules17022030

Astaxanthin-enriched-diet reduces blood pressure and improves cardiovascular parameters in spontaneously hypertensive rats

José Monroy-Ruiz, María-Ángeles Sevilla, Rosalía Carrón, María-José Montero

Pharmacological Research

Volume 63, Issue 1, January 2011, Pages 44–50

#### Astaxanthin: A Potential Therapeutic Agent in Cardiovascular Disease

Robert G. Fassett and Jeff S. Coombes

Mar. Drugs 2011, 9(3), 447-465; doi:10.3390/md9030447

#### Astaxanthin & cancer

Astaxanthin usage protects the body against all cancers, but especially melanoma & breast cancer (by 40%). It also protects the body from radiation.

[http://www.naturalnews.com/026309\\_astaxanthin\\_cancer\\_research.html](http://www.naturalnews.com/026309_astaxanthin_cancer_research.html)

#### Astaxanthin & skin

The algae that grows astaxanthin makes it to protect itself from the sun. Astaxanthin's (taken with a meal or vegetable oil internally) effects on skin are to prevent melanoma, as well as preventing sunburns. I used to burn after 45 minutes in the sun-now I can go three hours without burning (but it's not recommended) and I'm very light complected. It smooths out wrinkles to make people look up to five years younger. When I started taking it in the winter it immediately healed up my dry cracked skin on my hands I used to get all winter (unless I use a lot of lotion) and I've never gotten it again.

Astaxanthin helps with skin moisture levels, smoothness, elasticity, fine wrinkles, and spots.

<http://articles.mercola.com/sites/articles/archive/2011/06/15/benefits-of-astaxanthin-to-your-health.aspx>

#### Astaxanthin & eyes

Astaxanthin may reduce macular degeneration & cataracts.

#### Astaxanthin & Alzheimer's Disease

Eight milligrams of astaxanthin (taken with a meal) a day is a major anti-inflammatory that appears to

reduce phospholipid hydroperoxides (PLOOH) by 50% that are elevated in people with Alzheimer's.

Antioxidant effect of astaxanthin on phospholipid peroxidation in human erythrocytes.

Nakagawa K, Kiko T, Miyazawa T, Carpentero Burdeos G, Kimura F, Satoh A, Miyazawa T.

Br J Nutr. 2011 Jun;105(11):1563-71. doi: 10.1017/S0007114510005398. Epub 2011 Jan 31.

<http://www.hnherbs.com/pioneeringastax.html>

<http://cyan-corp.net/pdfs/bioastin/NeuroprotectiveEffectofAstaxanthin.pdf>

[http://www.naturalnews.com/033037\\_astaxanthin\\_dementia.html](http://www.naturalnews.com/033037_astaxanthin_dementia.html)

<http://articles.mercola.com/sites/articles/archive/2011/06/28/flamingos-pink-can-help-keep-you-from-getting-alzheimers.aspx>

<http://www.naturalnews.com/GoogleSearchResults.html?q=astaxanthin&cx=010579349100583850635%38&sa.x=0&sa.y=0>

Astaxanthin & side effects

"We really have not seen any kind of adverse reactions or negative effects on people taking astaxanthin," Dr. Cysewski says. "There have been some acute toxicity studies done [with] as high as 50 or 75 milligrams dosage per day. No bad effects."

<http://articles.mercola.com/sites/articles/archive/2013/02/10/cysewski-discloses-astaxanthin-benefits.aspx>

Resveratrol

Resveratrol is a major anti-inflammatory/painkiller found in purple grape skin. Its very expensive in pill form, cheaper in powder form as Japanese knotweed, and cheapest in powder form as Hu Zhang (organic best). Dark grape juice alone of the common sweet fruit juices doesn't cause diabetes because of this. The darker the grapes the more the resveratrol. In animals resveratrol supplementation leads to a 30% increase in lifespan.

Taking resveratrol with a meal (fat) and in the morning appears best. Resveratrol breaks down into four metabolites that can last 20 times longer in the bloodstream and has been shown safe up to 5g daily. Japanese knotwood/Hu Zhang also had emodin, which may also reduce inflammation & pain, herpes, bacterial infection, ulcers, liver damage, and diabetes & cancer.

Resveratrol is a major anti-inflammatory & painkiller that may speed tissue healing. It may help reduce:

high blood pressure/heart disease/heart failure/endothelial dysfunction/blood clots/heart attack & stroke damage

LDL cholesterol/triglycerides/C-reactive protein

varicose veins/hemorrhoids/phlebitis

damage from chemotherapy & radiation

tumors & cancer

diabetes & diabetic side effects

acne by 50% (used topically)

red blood cell deformities

macular degeneration

Alzheimer's

leg edema

wrinkles

Resveratrol may help increase:

exercise tolerance/strength & conditioning

nerves/kidney/liver regeneration

energy/weight loss/longevity

HDL cholesterol

Your Health with Dr. Richard Becker and Cindy Becker #1543 Extracts of the Grape 02/24/17

Turner RS, Thomas RG, Craft S, et al. A randomized, double-blind, placebo-controlled trial of resveratrol for Alzheimer disease. *Neurology*. 2015 Sep 11.

The effect of emodin, an anthraquinone derivative extracted from the roots of *Rheum tanguticum*, against herpes simplex virus in vitro and in vivo.

Xiong HR, Luo J, Hou W, Xiao H, Yang ZQ.

*J Ethnopharmacol*. 2011 Jan 27;133(2):718-23. doi: 10.1016/j.jep.2010.10.059. Epub 2010 Nov 2.

Emodin is a novel alkaline nuclease inhibitor that suppresses herpes simplex virus type 1 yields in cell cultures.

Hsiang CY, Ho TY.

*Br J Pharmacol*. 2008 Sep;155(2):227-35. doi: 10.1038/bjp.2008.242. Epub 2008 Jun 16

Emodin is a novel alkaline nuclease inhibitor that suppresses herpes simplex virus type 1 yields in cell

cultures.

Hsiang CY, Ho TY.

Br J Pharmacol. 2008 Sep;155(2):227-35. doi: 10.1038/bjp.2008.242. Epub 2008 Jun 16.

Study of Emodin Against Herpes Simplex Virus in vitro

HOU, Wei; YANG, Zhan-qiu; CHEN, Ke-li; YANG, Ji-jiang; WANG, Wei-hua; XIAO, Hong; CHENG, Li

Chinese Journal of Pharmaceutical Analysis, Volume 23, Number 4, 1 July 2003, pp. 259-262(4)

Journal of Ethnopharmacology

Volume 133, Issue 2, 27 January 2011, Pages 718–723

The effect of emodin, an anthraquinone derivative extracted from the roots of *Rheum tanguticum*, against herpes simplex virus in vitro and in vivo

Hai-Rong Xiong<sup>a</sup>, Jun Luob, Wei Hou<sup>a</sup>, Hong Xiaoa, Zhan-Qiu Yanga

<https://doi.org/10.1016/j.jep.2010.10.059>

BioMedicine

Volume 2, Issue 3, September 2012, Pages 108–116

Anticancer potential of emodin

Shu-Chun Hsua, Jing-Gung Chung<sup>b, c, ,</sup>

<https://doi.org/10.1016/j.biomed.2012.03.003>

<http://www.buzzle.com/articles/emodin-benefits-and-side-effects.html>

Red wine vinegar

The best way to take resveratrol as a food is to drink/use in salad or food as red wine vinegar. It not only has resveratrol but up to two tablespoons of vinegar lowers blood sugar by 20%, increases insulin sensitivity by 64%, and reduces insulin desensitivity by 46%. Red wine vinegar taken before a meal is one of the most powerful foods against diabetes, especially with no sugar and with organic extra virgin olive oil (from one country only). Wine, grapes, & raisins have a lot of sugar. Red wine vinegar reduces sugar which makes it far healthier than any other food or drink option for resveratrol ingestion.

Boswellia (frankincense)

Boswellia is a major inflammatory/painkiller. It has been used for millenia, as noted in the bible, for pain & inflammation both internally and topically. Like the rest of the anti-inflammatories it is used against cancer, especially topically for skin, breast & other cancers near the skin layer.

Efficacy and tolerability of Boswellia serrata extract in treatment of osteoarthritis of knee – A randomized double blind placebo controlled trial

N. Kimmatkar, V. Thawani, L. Hingorani, R. Khiyani

Phytomedicine

Volume 10, Issue 1, 2003, Pages 3–7

Frankincense: systematic review

2008; 337 doi: <http://dx.doi.org/10.1136/bmj.a2813> BMJ 2008;337:a2813

Boswellia serrata extract in treatment of osteoarthritis of knee – a randomized double blind placebo controlled trial.

Phytomedicine. 2003; 10:3-7.

Effects of boswellic acid of Boswellia serrata and other triterpenic acids on the complement system. Phytomedicine.

Knaus U, Wagner H.

1996; 3:77-81.

Anti-arthritic activity of boswellic acid in bovine serum albumin-induced arthritis.

Sharma ML, Bani S, Singh GB.

Int J Immunopharmacol. 1989; 11:647-652.

Effects of salai guggal extract of Boswellia serrata on cellular and humoral immune responses and leukocyte migration.

Sharma ML, Khajuria A, Kaul A, et al.

Agents Actions. 1988; 24:161-164.

Inhibition by boswellic acids of human leukocyte elastase.

Safayhi H, Rall B, Sailer ER, et al.

J Pharmacol Exp Ther. 1997; 281:460-463.

Studies on the metabolism of glycosaminoglycans under the influence of new herbal and anti-inflammatory agents.

Reddy GK, Chandrakasan G, Dhar SC



Biochem Pharmacol. 1989; 38:3527-3534.

Nutraceuticals in the Management of Osteoarthritis

James J. Clayton, BSc(Med), MB, BS

Orthopedics

August 2007 – Volume 30 · Issue 8

DOI: 10.3928/01477447-20070801-13

Nigella sativa (black seed oil)

Nigella sativa has been used for centuries and appears to have no medication interactions and little or no side effects (only rarely an allergic reaction).

Nigella sativa appears to help reduce pain & inflammation (by seven different ways).

Immunomodulatory and anti-inflammatory action of Nigella sativa and thymoquinone: A comprehensive review.

Majdalawieh AF, Fayyad MW

Int Immunopharmacol. 2015 Sep;28(1):295-304. doi: 10.1016/j.intimp.2015.06.023. Epub 2015 Jun 26.

Nigella sativa may also help against many infectious diseases, gram +&- bacteria, mrsa, strep, UTIs, salmonella, ecoli, cholera, fungus, molds, candida, yeast, herpes viruses, parasitic flatworm, burns & wounds & work with antibiotics & antifungals.

“Your Health” with Dr. Richard Becker and Cindy Becker #1629 Black Seed Oil 08/30/17, 10/26/17

A review on therapeutic potential of Nigella sativa: A miracle herb.

Ahmad A, Husain A, Mujeeb M, Khan SA, Najmi AK, Siddique NA, Damanhoury ZA, Anwar F.

Asian Pac J Trop Biomed. 2013 May;3(5):337-52. doi: 10.1016/S2221-1691(13)60075-1.

Immunomodulatory and therapeutic properties of the Nigella sativa L. seed.

Salem ML

Int Immunopharmacol. 2005 Dec;5(13-14):1749-70. Epub 2005 Jul 1.

What to buy?

Nigella sativa seeds are very small & black. Because the oil can go bad & is often mixed with cheaper oils & sold as pure, buying the organic seeds may ensure both better quality & freshness. People can soak the seeds in water overnight in the refrigerator & add a sweetener (like stevia) before ingesting

as it can have a strong flavor.

### Cannabidiol (CBD) oil

For people that take marijuana for anxiety but would like to get off of it, hemp has the cannabanoids that marijuana has except THC, which causes hallucinations for people who take marijuana.

Cannabidiol helps against anxiety, inflammation, & pain and is legally available online in all 50 states because it has no or only trace THC. Cannabidiol may have been evolved by the marijuana plant to moderate the effects of THC. When CBD is taken without THC, it appears to suppress hallucinations & reduce schizophrenic episodes. CBD also has large anticancer properties.

The antianxiety, antipain, anti-inflammatory, and anti-insomnia effects of CBD oil & the other cannabanoids that often come with may help people who are addicted and withdrawing from a drug addiction.

Most CBD oil suppliers recommend a couple dropperfulls on top of the toungue to swallow. Using just a drop under the toungue (sublingually) is far cheaper & more effective per drop. One drop was enough in the morning to help my sleep greatly at night. If a person needs more they can add a drop at a time throughout the day, perhaps allowing a bottle to last for half a year or more.

The other benefits of CBD are:

Antiepileptic/anticonvulsant-it appears to work in people unresponsive to other drugs for uncontrolled seizures

Low dose it's alerting & high dose it's sleep increasing

Anti-inflammatory

Anxiolytic (antianxiety)

Anti-emetic (antinausea)

Analgesic

Anticancer

Immunomodulator-improves immune action against threats & reduces auto-immune disorders

Helps against IBD and Crohn's Disease

Neuroprotectant

Antioxidant

It may help Alzheimer's, Parkinsons, cerebral ischemia, brain and nerve damage from strokes.

<http://www.unitedpatientsgroup.com/blog/2013/01/06/cannabidiol-facts/>

<http://examine.com/supplements/Hemp+Protein/>

[http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S0100-879X2006000400001&lng=en&nrm=iso&tlng=en](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0100-879X2006000400001&lng=en&nrm=iso&tlng=en)

[http://en.wikipedia.org/wiki/Cannabidiol#cite\\_note-Leweke\\_2012-13](http://en.wikipedia.org/wiki/Cannabidiol#cite_note-Leweke_2012-13)

<http://www.nature.com/tp/journal/v2/n3/full/tp201215a.html>

<http://www.greenbridgemed.com/2013/03/08/cannabidiol-and-schizophrenia/>

<http://www.europeanneuropsychopharmacology.com/article/S0924-977X%2813%2900332-5/abstract>

CBD- fat soluble vs water soluble

Fat soluble, the oil version, may stay in the body longer & maintain a more even therapeutic level. Water soluble CBD may require much more frequent dosing for the same effect, and be more expensive. I would try one at a time & keep a journal to see which one worked better for the price.

Cannabivarin (CBV)

CBV is another cannabinoid in marijuana and hemp that as an extract increases sleep & reduces pain. Tolerance can build quickly for CBV, so reserving it for sleep or when also experiencing difficult to treat acute or chronic pain helps to preserve its effectiveness. Cannabidiol (CBD) usually has CBV and a lot of other useful cannabinoids mixed in.

Bromelain

Bromelain is an enzyme from pineapples (mostly stems). It aides digestion when taken at meals & reduces inflammation & speeds healing. Bromelain appears to help:

allergies & asthma

inflammation

tissue damage/wounds/burns (also topical)

sinus problems

bites & stings

varicose veins

arthritis & joint pain

hemorrhoids

indigestion/heartburn

IBD (inflammatory bowel disease)

cancer

autoimmune diseases

infections

Bromelain, the enzyme complex of pineapple (*Ananas comosus*) and its clinical application. An update

Steven J. Taussiga, Stanley Batkin, b

Journal of Ethnopharmacology

Volume 22, Issue 2, February–March 1988, Pages 191–203

doi:10.1016/0378-8741(88)90127-4

Bromelain : an Anti-Inflammatory Agent

Bert Seligman

ANGIOLOGY November 1962 vol. 13 no. 11 508-510

doi: 10.1177/000331976201301103

The Health Benefits of Bromelain by Dr. Edward Group

<https://www.globalhealingcenter.com/natural-health/bromelain/>

<http://www.umm.edu/health/medical/altmed/supplement/bromelain>

6 Unbelievable Health Benefits of Bromelain

<https://draxe.com/6-unbelievable-health-benefits-bromelain/>

Papain

Papain is a food enzyme from the fruit papaya & appears to work to reduce inflammation & pain as well as help digest food.

How to save money on turmeric, ginger, resveratrol, astaxanthin, PEA

It's easiest to start using turmeric & ginger by buying a bottle of each pre-encapsulated. The turmeric has to have a little black pepper to work (see below) that's often called piperine. After getting the benefits, many people buy in bulk & put it in capsules themselves. Buying organic ginger, resveratrol & turmeric is very cheap compared to buying a bottle in capsule form in the long term.

<http://supplementsos.com/blog/save-money-by-filling-your-own-supplement-capsules/>

One pound of organic turmeric, resveratrol and/or ginger can be bought inexpensively online. Double zero (00) capsules (the largest inexpensive ones) can be bought for less than \$14 for a thousand on the internet. The fastest way to fill them is to take the long end & push it down into a small bowl filled high with the powder. Three or four pushes and its full & cap the other end. People can make a months worth for three times a day in 5-10 minutes. Turmeric has to be taken with a small amount of black pepper mixed in in order to get the benefits. Turmeric's bioavailability is likely enhanced when taken with organic vegetable oils, possibly greatest with olive or coconut oil (with a meal, in a meal, or alone).

The piperine in black pepper is necessary to make the curcumin bioavailable, which prevents the need for expensive curcumin extracts. Curcumin is the chemical in turmeric that provides the benefits.

Piperine increases the bioavailability of curcumin by 2000% (200X). Every 00 capsule of turmeric needs 1.5mg of black pepper, or when mixing them in a bowl mix 1 part black pepper for every 333 parts of turmeric, or 3 parts black pepper for every 1000 parts turmeric. You can measure it out by weight or by volume, whichever is easiest, but here the metric system is simplest. Or you can just shake some black pepper on top of the powdered turmeric. Turmeric with a little black pepper used for anti-inflammatory/painkilling and other purposes hasn't been found to affect the blood levels of other drugs.

Shoba G1, Joy D, Joseph T, Majeed M, Rajendran R, Srinivas PS. Influence of piperine on the pharmacokinetics of curcumin in animals and human volunteers. *Planta Med.* 1998 May;64(4):353-6.

Bhardwaj, R. K., Glaeser, H., Becquemont, L., Klotz, U., Gupta, S. K. & Fromm, M. F. (2002). Piperine, a major constituent of black pepper, inhibits human P-glycoprotein and CYP3A4. *J Pharmacol Exp Ther* 302, 645–650.

Bhatiwada Nidhi, Talahalli R. Ramaprasad, Vallikannan Baskaran. Dietary fatty acid determines the intestinal absorption of lutein in lutein deficient mice. *Food Research International* Volume 64, October 2014, Pages 256–263

<http://csn.cancer.org/node/219876>

<http://www.livestrong.com/article/543411-how-much-curcumin-is-there-in-powdered-turmeric/>

### Starting new supplements or medications

I started by taking only one new supplement at a time. One turmeric, resveratrol, boswellia, ginger, astaxanthin, PEA, bromelain, or papain a day after a meal (before or in a meal with ginger to lower blood sugar), then after a meal twice a day, then three times a day to see if I felt any side effects.

Then one of the others once, then twice, then three times a day to see if I felt any side effects. Then another one once, twice, then three times a day. At that point the I was taking the equivalent of nine aspirin, ibuprofen, or naproxen per day, much higher dosages than would be safe over time with an NSAID and much more effective in combination.

I choose the ones that I don't feel side effects from, and that have other benefits I want- no sunburns with astaxanthin / mood boost from tumeric for some / no nausea with ginger / no side effects or med interaction effects from PEA / helping food digest with bromelain & papain.

Then as long as I don't feel any negative side effects, I can increase whichever one gives them the benefits I want more of. Not only will all of these anti-inflammatories at such high levels apparently reduce my chances of heart disease, diabetes, cancer, and Alzheimer's between 50-95%, but it reduces my pain & inflammation enormously. The inflammatory process in our bodies starts us on the healing process, but as we get older & the inflammation response gets stronger it interferes with our stem cells in healing wounds & soft tissue injury. When I take the non NSAID anti-inflammatories, wounds & soft tissue injuries heal much faster. The increased stem cell tissue replacement gives me the healing ability I had when I was a young child. Instead of the aches & pains of getting older, my body feels young & energetic & painfree.

This effect is so strong that chronic pain from injuries I had as young as ten years old have completely healed up & now I don't have any chronic pains. It feels great!

Tumeric, ginger, resveratrol, astaxanthin, boswellia, PEA, bromelain, papain, noni juice, & mangosteen vs opiates for pain

Opiates like morphine, oxycodone, and vicodin kill pain upon the first dose but they also induce the body to stop producing the natural endorphins that kill pain that the opiates mimic. So from the first dose opiates start to increase the person's pain sensitivity. This becomes clinically notable after the first three days. If the pain is at the same level the person needs more and more opiates to get the same painkilling effect.

The other major drawback of opiates is that when more opiates are used than is necessary for the pain the person experiences a euphoric high that is very addicting itself. Opiates trigger the pleasure centers of the brain, and as with the painkilling endorphins the pleasure inducing natural endorphins that get normally get triggered by positive experiences also are induced by the opiates to be lowered, triggering increasing depression and anxiety unless the opiate is increased, and becoming severe when the opiate is withdrawn.

Given that anti-inflammatories given at high doses not only stop pain as well as opiates, but also speed up healing greatly and don't cause any heightened pain sensitivity, depression and anxiety when discontinued, its irresponsible for doctors to prescribe opiates for pain that addict hundreds of millions of people around the globe, many of whom suffer for years & even die from the addiction.

Addiction & turmeric, resveratrol, bromelain, papain, boswellia, ginger, astaxanthin

People can take many more turmeric, ginger, resveratrol, bromelain, papain, boswellia & astaxanthin capsules as they need to get rid of arthritis, back, and other chronic or acute pain without resorting to addictive opiates like oxycodone, codeine, morphine. With the NSAIDS & even acetaminophen (Tylenol) people couldn't always take enough to stop the pain without damaging their stomachs or liver or causing internal bleeding. With turmeric, ginger, & astaxanthin people can not only take enough to stop their pain, but to withdraw from opiate addiction.

The side effects of opiate (heroin, morphine, hydrocodone, codeine, oxycodone) withdrawal include extreme pain sensitivity, nausea, anxiety, and depression. Ginger helps stop the pain sensitivity, nausea, and anxiety. Turmeric helps stop the pain sensitivity & depression (in many). Astaxanthin helps stop the pain sensitivity. Many of these are also the symptoms of all addiction withdrawal.

The painkilling, stress lowering, mood boosting, and emotional pain lowering of turmeric, ginger, resveratrol, bromelain, papain, boswellia & astaxanthin along with their low/little/no side effects make them the preferred natural substances to take daily to get off of & stay off of addictive drugs, as well as withdrawing from gambling, sex, spending, & other nondrug addictions. Not only are turmeric, ginger, & astaxanthin substitutes for opiates, they are the best way to end opiate & other addictions.

I have counseled people to take turmeric, ginger, resveratrol, bromelain, papain, boswellia & astaxanthin when they were maxed out on their prescriptions for opiates & the opiates were no longer working, & have seen people get off opiates within a month of starting turmeric, ginger, & astaxanthin-voluntarily withdrawing from high levels of opiates without any other type of treatment employed.

Other painkillers/anti-inflammatory aides

#### DMSO/MSM

Dimethylsulfoxide DMSO is a cheap wood extract that is the best topical anti-inflammatory and is used extensively in veterinary medicine. It has 11,000 papers done on it and is FDA approved for bladder inflammation, but isn't patentable or its use would be universal in medicine. The best form to use topically is a rollon because half of all medicines are soluble in it (will be carried into the body through the skin). If applied with the hands they should be clean as it will soak into any part of the skin it touches. There is nothing better topically to reduce inflammation and is a great complement to internal anti-inflammatories.

MSM is the crystal version of what DMSO breaks down into in the body. It appears to help inflammation & pain, heartburn, hayfever, allergies, asthma, sinusitis, and autoimmune disorders.

MSM appears to help reduce scar tissue, soften skin/hair/nails, reduce constipation, & may be most effective in helping people with scleroderma. This may help soften internal & external (topical use) scars, perhaps in the lungs as well.

[http://www.essense-of-life.com/topic\\_A-508/DMSO.htm](http://www.essense-of-life.com/topic_A-508/DMSO.htm)

<http://www.dmsso.org/subLevels/literature.htm>

The Miracle of MSM by Dr. Stanley W. Jacob, Dr. Ronald

DMSO can cause a garlic like (sulfur) smell. It's use as an occasional topical anti-inflammatory appears to be safe. To avoid irritation vegetable oil can be applied to skin after use.

125 countries use DMSO and there are 55,000 studies on it.

The Miracle of MSM by Jacob, Lawrence, & Zucker

## Hops

Hops appears to be as strong an anti-inflammatory/painkiller as NSAIDs.

### [Natural Support for Autoimmune and Inflammatory Disease](#)

Lemay M, Murray MA, Davies A, et al. In vitro and ex vivo cyclooxygenase inhibition by a hops extract. Inflammation Res. 2003; 52(Supplement 2):123.

Lukaczer D, Darland G, Tripp M, et al. A pilot trial evaluating Meta050, a proprietary combination of reduced iso-alpha acids, rosemary extract and oleanolic acid in patients with arthritis and fibromyalgia. Phytotherapy Research. 2005; 19(10):864–9.

Konda VR, Desai A, Darland G, et al. Rho iso-alpha acids from hops inhibit the GSK-3/NF- kappa B pathway and reduce inflammatory markers associated with bone and cartilage degradation. Journal of Inflammation-London. 2009; 6:26.

Hall AJ, Babish JG, Darland GK, et al. Safety, efficacy and anti-inflammatory activity of rho iso-alpha-acids from hops. Phytochemistry. 2008; 69(7):1534–47.

## Stinging nettle

Stinging nettle leaf appears to be a strong topical anti-inflammatory (root is used for prostate BPH).

### [Natural Support for Autoimmune and Inflammatory Disease](#)

## Skullcap

Skullcap appears to reduce inflammation as strongly as NSAIDS like aspirin.

### [Natural Support for Autoimmune and Inflammatory Disease](#)

## Methylsulfonylmethane (MSM)

MSM is a major anti-inflammatory/painkiller that is found in many foods that also helps hair & nails. Once in the body DMSO works the same as MSM. MSM is made from DMSO. Most users take 2-8g per day.

MSM also improves blood flow, is a cholinesterase inhibitor so it help constipation and may help cognition in people with Alzheimer's/Parkinson's/Lewy Body dementia, reduces allergy symptoms, reduces muscle spasms, it reduces scar tissue, it helps fight the parasite giardia, helps with autoimmune diseases like rheumatoid arthritis/lupus/scleroderma.

The Miracle of MSM by Jacob, Lawrence, & Zucker

Randomised, Double-Blind, Parallel, Placebo-Controlled Study of Oral Glucosamine,



## Methylsulfonylmethane and their Combination in Osteoarthritis

Dr P. R. Usha, M. U. R. Naidu

Clinical Drug Investigation

June 2004, Volume 24, Issue 6, pp 353-363

Efficacy of methylsulfonylmethane (MSM) in osteoarthritis pain of the knee: a pilot clinical trial 1 2

L.S. Kim, L.J. Axelrod, P. Howard, N. Buratovich, R.F. Waters

Osteoarthritis and Cartilage

Volume 14, Issue 3, March 2006, Pages 286–294

doi:10.1016/j.joca.2005.10.003

Efficacy of methylsulfonylmethane supplementation on osteoarthritis of the knee: a randomized controlled study

Eytan M Debbi, Gabriel Agar, Gil Fichman, Yaron Bar Ziv, Rami Kardosh, Nahum Halperin, Avi Elbaz, Yiftah Beer, Ronen Debi

BMC Complementary and Alternative Medicine 2011, 11:50 doi:10.1186/1472-6882-11-50

<http://altmedicine.about.com/cs/herbsvitaminsad/a/MSM.htm>

Glucosamine & chondroitin & MSM for inflammation and pain (including from arthritis).

100,000s studies worldwide

80% effectiveness on average

Glucosamin from animals

Chondroitin from animals (bovine or fish)

MSM from DMSO (wood product) but no smell (DMSO smells like garlic after usage)

All three appear to lower inflammation and prevent joint damage. Glucosamine appears to help protect cartilage on joint surfaces. Chondroitin appears to improve elasticity in cartilage and block enzymes that destroy cartilage tissue. MSM appears to repair muscle damage, help sleep with arthritis, reduce pain by 40% & pain med use by 75%, and reduces degeneration of joints.

People take up to 1200mg of chondroitin daily, 1500mg of glucosamine daily, and 3g of MSM daily.

Your Health by Dr. Richard Becker with Cindy Becker #1558 Supporting Joints with GCM 03/02/17

## Cherries

Tart cherries (unsweetened) help to treat gout & inflammation/pain & have melatonin that helps sleep.

Cherry diet control for gout and arthritis.

BLAU, L. W.

Texas Reports on Biology and Medicine 1950 Vol. 8 pp. 309-311

Cherry consumption and decreased risk of recurrent gout attacks

Yuqing Zhang, Tuhina Neogi, Clara Chen, Christine Chaisson, David J. Hunter, Hyon K. Choi

Arthritis & Rheumatism

Volume 64, Issue 12, pages 4004–4011, December 2012

DOI: 10.1002/art.34677

Antioxidant and Antiinflammatory Activities of Anthocyanins and Their Aglycon, Cyanidin, from Tart Cherries

Haibo Wang, Muraleedharan G. Nair, Gale M. Strasburg, Yu-Chen Chang, Alden M. Booren, J. Ian Gray, David L. DeWitt

J. Nat. Prod., 1999, 62 (2), pp 294–296

DOI: 10.1021/np980501m

Cyclooxygenase inhibitory and antioxidant cyanidin glycosides in cherries and berries

N.P. Seerama, R.A. Momina, M.G. Naira, L.D. Bourquinb

Phytomedicine

Volume 8, Issue 5, 2001, Pages 362–369

doi:10.1078/0944-7113-00053

<http://www.fpin.org/assets/documents/2012EBP/7004%20ebp%20-%20september%202012.pdf>

Celery, cholesterol, blood pressure, gout, and inflammation/pain

Celery works as a beta blocker, an angiotensin-receptor blocker, and as a mild diuretic to lower blood pressure immediately, and it lowers LDL cholesterol and triglycerides and raises HDL cholesterol to clean the arteries & reduce blood pressure even greater in the long run. Celery may be the best single substance for lowering blood pressure. Celery seems to correct blood pressure, not just lower it.

Unlike prescription blood pressure drugs that can lower the amount of blood that gets to the brain &

cause dementia if blood pressure gets to low, celery appears to only lower blood pressure to normal- not lower blood pressure in people without high blood pressure.

Celery is also a COX-2 inhibitor & major anti-inflammatory/painkiller. Celery appears to prevent and treat gout as well as cherries do, in contrast to thiazide diuretics that can increase uric acid and cause gout.

Many people use a blender to liquify it, then add fruit & leafy greens and a little stevia to sweeten and a little veg oil to get the fat soluble nutrients benefits and for taste.

When taken in supplement form the best research is for ones that contain 85% 3nb.

Doctor Michael T. Murray has referenced many research studies on the effectiveness of celery.

<http://doctormurray.com/celery-and-celery-seed-extract-are-powerful-proven-healers/>

<http://doctormurray.com/more-evidence-that-celery-seed-extract-lowers-high-blood-pressure/>

Le QT and Elliott WJ: Hypotensive and hypocholesterolemic effects of celery oil may be due to BuPh. Clin Res 1991;39:173A.

Tsi D and Tan BKH: Cardiovascular pharmacology of 3-n-butylphthalide in spontaneously hypertensive rats. Phytotherapy Research 1997;11:576-82.

Le QT and Elliott WJ: Dose-response relationship of blood pressure and serum cholesterol to 3-n-butylphthalide, a component of celery oil. Clin Res 1991;39:750A.

Mimura Y, Kobayashi S, Naitoh T, Kimura I and Kimura M: The structure-activity relationship between synthetic butylidenephthalide derivatives regarding the competence and progression of inhibition in primary cultures proliferation of mouse aorta smooth muscle cells. Biol Pharm Bull 1995;18:1203-6.

Yu SR, Gao NN, Li LL, Wang ZY, Chen Y and Wang WN: The protective effect of 3-butyl phthalide on rat brain cells. Yao Hsueh Hsueh Pao 1988;23:656-61.

Chong ZZ and Feng YP: dl-3-n-butylphthalide improves regional cerebral blood flow after experimental subarachnoid hemorrhage in rats. Chung Kuo Yao Li Hsueh Pao 1999;20:509- 12.

Chong ZZ and Feng YP: dl-3-n-butylphthalide attenuates reperfusion-induced blood-brain barrier damage after focal cerebral ischemia in rats. Chung Kuo Yao Li Hsueh Pao 1999;20:696-700.

Yan CH, Feng YP and Zhang JT: Effects of dl-3-n-butylphthalide on regional cerebral blood flow in right middle cerebral artery occlusion rats. Chung Kuo Yao Li Hsueh Pao 1998;19:117-20.

Lin JF and Feng YP: Effect of dl-3-n-butylphthalide on delayed neuronal damage after focal cerebral ischemia and intrasynaptosomes calcium in rats. Yao Hsueh Hsueh Pao 1996;31:166-70.

Liu XG and Feng YP: Protective effect of dl-3-n-butylphthalide on ischemic neurological damage and abnormal behavior in rats subjected to focal ischemia. Yao Hsueh Hsueh Pao 1995;30:896-903.

Zhang LY and Feng YP: Effect of dl-3-n-butylphthalide (NBP) on life span and neurological deficit in

SHRsp rats.Yao Hsueh Hsueh Pao 1996;31:18-23.

Zheng G, Kenney PM, Zhang J and Lam KT: Chemoprevention of benzopyrene-induced forestomach cancer in mice by natural phthalides from celery oil. Nutr Cancer 1993;19:77-86.

Soundararajan S and Daunter B: Ajvine: Pilot biomedical study for pain relief in rheumatic pain. School of Medicine,The University of Queensland, Brisbane, Queensland, Australia, 1991- 92.

Venkat S, Soundararajan S, Daunter B and Madhusudhan S. Use of Ayurvedic medicine in the treatment of rheumatic illness. Department of Orthopaedics, Kovai Medical Center and Hospitals, Coimbatore, India, 1995.

Hu D, Huang XX and Feng YP: Effect of dl-3-n-butylphthalide (NBP) on purine metabolites in striatum extracellular fluid in four-vessel occlusion rats.Yao Hsueh Hsueh Pao 1996;31:13-7

Chong ZZ and Feng YP: Effects of dl-3-n-butylphthalide on production of TXB2 and 6-keto-PGF1 alpha in rat brain during focal cerebral ischemia and reperfusion. Chung Kuo Yao Li Hsueh Pao 1997;18:505-8.

Moghadam MH1, Imenshahidi M, Mohajeri SA. Antihypertensive effect of celery seed on rat blood pressure in chronic administration. J Med Food. 2013 Jun;16(6):558-63.

Wobenzyme

Wobenzyme is a major anti-inflammatory/painkiller that has plant-based enzymes, pancreatic enzymes and antioxidants including bromelain, a chemical in pineapples that helps digestion and is a major anti-inflammatory/painkiller.

Bromelain, the enzyme complex of pineapple (Ananas comosus) and its clinical application. An update

Steven J. Taussiga, Stanley Batkin, b

Journal of Ethnopharmacology

Volume 22, Issue 2, February–March 1988, Pages 191–203

doi:10.1016/0378-8741(88)90127-4

Bromelain : an Anti-Inflammatory Agent

Bert Seligman

ANGIOLOGY November 1962 vol. 13 no. 11 508-510

doi: 10.1177/000331976201301103

Natural products and anti-inflammatory activity

Gaofeng Yuan, Mark L Wahlqvist, Guoqing He, Min Yang, Duo Li

Asia Pac J Clin Nutr 2006;15 (2): 143-152

### Zyflamend

Zyflamend is a mix of herbs & is a major anti-inflammatory/painkiller. It contains rosemary, turmeric, ginger, Holy basil (tulsi), organic green tea, Hu Zhang (Polygonum cuspidatum/Japanese knotwood/resveratrol), Chinese goldthread, barberry, organic oregano, and Chinese skullcap. While bulk ginger & turmeric are cheapest, if you have the money and want the best anti-inflammatory/painkilling action besides astaxanthin, zyflamend is a premix of many anti-inflammatory herbs (including turmeric & ginger) that in combination should be most effective and have the least side effects, since it uses only a little of many anti-inflammatory herbs. It's much more convenient & more expensive than buying many of the ingredients in bulk and combining them yourself.

Zyflamend, a Unique Herbal Preparation With Nonselective OX Inhibitory Activity, Induces Apoptosis of Prostate Cancer Cells That Lack COX-2 Expression

Debra L. Bemis, Jillian L. Capodice, Aristotelis G. Anastasiadis, Aaron E. Katz & Ralph Buttyan

Nutrition and Cancer

Volume 52, Issue 2, 2005

DOI: 10.1207/s15327914nc5202\_10

The effect of Wobenzym on the atherogenic potential and inflammatory factors at the rehabilitation stage for patients who have had a myocardial infarct

Riabokon' EN, Gavrilenko TI, Kornilina EM, Iakushko LV

Likars'ka Sprava / Ministerstvo Okhorony Zdorov'ia Ukrainy [2000(5):111-114]

Cat's claw inhibits TNF $\alpha$  production and scavenges free radicals

Cat's claw inhibits TNF $\alpha$  production and scavenges free radicals: role in cytoprotection

Manuel Sandoval, Randi M Charbonnet, Nataly N Okuhama, Jarod Roberts, Zdenka Krenova, Ann Marie Trentacosti, Mark J.S Miller

Free Radical Biology and Medicine

Volume 29, Issue 1, 1 July 2000, Pages 71–78

### Mangosteen

Mangosteen is an anti-inflammatory (Cox-2 inhibitor) fruit that has anti-cancer properties as well as antiviral/fungal/bacterial.

?-Mangostin suppresses human gastric adenocarcinoma cells in vitro via blockade of Stat3 signaling pathway

Tao Shan, Xi-juan Cui, Wei Li, Wan-run Lin, Hong-wei Lu, Yi-ming Li, Xi Chen, Tao Wu

Acta Pharmacologica Sinica 35, 1065-1073 (August 2014) | doi:10.1038/aps.2014.43

Antiproliferation, antioxidation and induction of apoptosis by *Garcinia mangostana* (mangosteen) on SKBR3 human breast cancer cell line

Primchanien Moongkarndia, Nuttavut Kosema, Sineenart Kaslungkab, Omboon Luanratanac, Narongchai Pongpanc, Neelobol Neungtond

Journal of Ethnopharmacology

Volume 90, Issue 1, January 2004, Pages 161–166

Effect of a Mangosteen Dietary Supplement on Human Immune Function: A Randomized, Double-Blind, Placebo-Controlled Trial

Yu-Ping Tang, Peng-Gao Li, Miwako Kondo, Hong-Ping Ji, Yan Kou, Boxin Ou

Journal of Medicinal Food. August 2009, 12(4): 755–763. doi:10.1089/jmf.2008.0204.

Anti-Cancer Effects of Xanthones from Pericarps of Mangosteen

Yukihiro Akao, Yoshihito Nakagawa, Yoshinori Nozawa

Int. J. Mol. Sci. 2008, 9(3), 355-370; doi:10.3390/ijms9030355

Inhibition of cyclooxygenase and prostaglandin E2 synthesis by ?-mangostin, a xanthone derivative in mangosteen, in C6 rat glioma cells<sup>1</sup>

Keigo Nakatani, Norimichi Nakahata, Tsutomu Arakawa, Hideyuki Yasuda, Yasushi Ohizumi

Biochemical Pharmacology

Volume 63, Issue 1, 1 January 2002, Pages 73–79

Antioxidant Xanthones from the Pericarp of *Garcinia mangostana* (Mangosteen)

Hyun-Ah Jung, Bao-Ning Su, William J. Keller, Rajendra G. Mehta, A. Douglas Kinghorn

J. Agric. Food Chem., 2006, 54 (6), pp 2077–2082

DOI: 10.1021/jf052649z

Medicinal properties of mangosteen (*Garcinia mangostana*)

José Pedraza-Chaverri, Noemí Cárdenas-Rodríguez, Marisol Orozco-Ibarra, Jazmin M. Pérez-Rojas

Food and Chemical Toxicology

Volume 46, Issue 10, October 2008, Pages 3227–3239

Noni for inflammation and pain

Noni is a fruit eaten by Polynesians. It reportedly has multiple medicinal benefits. It appears to be a COX-2 inhibitor anti-inflammatory, and work especially well to protect joints. As little as 2 oz may last several days and work especially fast & effectively against pain because of its effects as an anti-inflammatory and its inhibition of MU receptors in the spinal cord, like opiates do. It may be as effective a painkiller as tramadol (Ultram), but without the side effects or addiction. In one survey of several hundred people using noni, 90% reported a significant decrease in chronic pain. Noni appears to relieve constipation by increasing peristalsis, useful for people also taking opiates.

Noni also may help against cancer, gout, nausea, heartburn, ulcers, high blood pressure, stroke damage, high bad cholesterol, diabetes, obesity, bacterial/viral/fungal/parasitic infections, and difficulty hearing high frequencies. The freeze dried version may be the most potent, and if unsugared should have a bitter taste.

Noni & liver function

Noni has reportedly been consumed for several hundred years. It has high potassium, which may be contraindicated in people who have kidney problems or are on drugs that increase potassium levels. While noni in multiple studies has been shown to protect against liver damage for most, noni has been reported to be suspected of inducing liver damage in a few case reports. In the case reports people who had no indication of lowered liver function before noni recovered after they stopped taking it. One person who had a damaged liver and repeated liver crises before taking noni required a transplant. Noni very likely should not be used in anyone with lowered liver function. Using noni may make the most sense for pain for people getting hospice care or temporary usage for people physically dependent on opiates if the noni helps relieve their increased pain sensitivity during withdrawal.

Morinda citrifolia (Noni): A literature review and recent advances in Noni research

Wang MY et al. Acta Pharmacol Sin 2002 Dec; 23 (1 2): 1127 -1141 ·1127·

A Safety Review of Noni Fruit Juice

B.J. West, C.J. Jensen, J. Westendorf and L.D. White

Journal of Food Science Volume 71, Issue 8, pages R100–R106, October 2006

DOI: 10.1111/j.1750-3841.2006.00164.x

World J Gastroenterol. 2006 June 14; 12(22): 3616–3619.

Published online 2006 June 14. doi: 10.3748/wjg.v12.i22.3616

Noni juice is not hepatotoxic

Brett J West, C Jarakae Jensen, and Johannes Westendorf

The Journal of Toxicological Sciences

Vol. 34 (2009) No. 5 October P 581-585

<http://doi.org/10.2131/jts.34.581>

Hepatotoxicity and subchronic toxicity tests of *Morinda citrifolia* (noni) fruit

West Brett J., Su Chen X., C. Jarakae Jensen

Dr. Richard Becker with Cindy Becker on "Your Health" 01/09/17, 01/30/17 #1459 Fruits of the World Update

Acute Hepatotoxicity After Ingestion of *Morinda citrifolia* (Noni Berry) Juice in a 14-year-old Boy

Yu, Elizabeth L; Sivagnanam, Mamata; Ellis, Linda; Huang, Jeannie S

Journal of Pediatric Gastroenterology & Nutrition: February 2011 – Volume 52 – Issue 2 – p 222–224

doi: 10.1097/MPG.0b013e3181eb69f0

Hepatitis Induced by Noni Juice from *Morinda citrifolia*: A Rare Cause of Hepatotoxicity or the Tip of the Iceberg?

Yüce B., Gülberg V., Diebold J., Gerbes A.L.

Keywords: Herbal toxicityAcute hepatitisComplementary medicineDietary supplement

Digestion 2006;73:167–170

<https://doi.org/10.1159/000094524>

Herbal hepatotoxicity: acute hepatitis caused by a Noni preparation (*Morinda citrifolia*)

Millonig, Gundaa; Stadlmann, Sylviab; Vogel, Wolfganga

European Journal of Gastroenterology & Hepatology: April 2005 – Volume 17 – Issue 4 – pp 445-447

Hepatotoxicity of NONI juice: Report of two cases

Vanessa Stadlbauer, Peter Fickert, Carolin Lackner, Jutta Schmerlaib, Peter Krisper, Michael Trauner, Rudolf E Stauber



World J Gastroenterol 2005;11(30):4758-4760

Noni. Review of Natural Products. Facts & Comparisons [database online]. St. Louis, MO: Wolters Kluwer Health Inc; May 2011.

<http://nccam.nih.gov/health/noni>

<http://livertox.nih.gov/Noni.htm>

<http://www.livestrong.com/article/230340-effects-of-noni-juice-on-the-liver/>

B vitamins for pain

B100 or B50 vitamins complex (coenzyme or methyl may be best)

B vitamins appear to help reduce chronic pain, including chronic back pain.

Dr. Richard Becker and Cindy Becker on “Your Health” 01/12/17

Other painkillers

Levodopa

Levodopa increases dopamine in the brain & reduces neuropathic, acute, and chronic pain, and lowers sensitivity to heat in some studies. Carbidopa is often given at the same time because it can lower the amount of levodopa needed by up to 75%, significantly reducing the side effects. Because of side effects, it can be reserved for when safer treatments are ineffective alone. Mucuna pruriens is an herbal source.

The response of breast cancer patients with bone pain to L-dopa

John Peter Minton

Article first published online: 28 JUN 2006

Cancer Volume 33, Issue 2, pages 358–363, February 1974

DOI: 10.1002/1097-0142(197402)33:2<358::AID-CNCR2820330209>3.0.CO;2-3

Levodopa and Induced-Pain Response

A Study of Patients With Parkinsonian and Pain Syndromes

Arthur F. Battista, MD; B. Berthold Wolff, PhD

Arch Intern Med. 1973;132(1):70-74. doi:10.1001/archinte.1973.03650070062009

Levodopa raises objective pain threshold in Parkinson's disease: a RIII reflex study

A Gerdelat-Mas et al.

J Neurol Neurosurg Psychiatry 2007;78:1140-1142 doi:10.1136/jnnp.2007.120212

Administration of Levodopa for Relief of Herpes Zoster Pain

Serge Kernbaum, MD; Jean Hauchecorne, MD

JAMA. 1981;246(2):132-134. doi:10.1001/jama.1981.03320020024017.

Effect of levodopa on pain threshold in Parkinson's disease: A clinical and positron emission tomography study

Christine Brefel-Courbon

Movement Disorders Volume 20, Issue 12, pages 1557–1563, December 2005

DOI: 10.1002/mds.20629

Use of levodopa to relieve pain from painful symmetrical diabetic polyneuropathy

Mustafa Ertas et al.

Pain Volume 75, Issues 2–3, January 1998, Pages 257–259

Other neuropathy treatments

A review of 229 studies found tricyclic antidepressants, serotonin-noradrenaline reuptake inhibitors, pregabalin, and gabapentin useful, then high concentration capsaicin patches and lidocaine patches.

Lancet Neurol. 2015 Feb;14(2):162-73. doi: 10.1016/S1474-4422(14)70251-0. Epub 2015 Jan 7.

Pharmacotherapy for neuropathic pain in adults: a systematic review and meta-analysis.

Finnerup NB et al.

Lemon verbena

Lemon verbena appears to reduce muscle soreness, joint pain, & inflammation.

[J Int Soc Sports Nutr.](#) 2018 Jan 23;15:5. doi: 10.1186/s12970-018-0208-0. eCollection 2018.

Effects of lemon verbena extract (Recoverben®) supplementation on muscle strength and recovery after exhaustive exercise: a randomized, placebo-controlled trial.

[J Altern Complement Med.](#) 2011 Nov;17(11):1051-63. doi: 10.1089/acm.2010.0410.

A randomized, double-blinded, placebo-controlled study of the effect of a combination of lemon verbena extract and fish oil omega-3 fatty acid on joint management.

[Eur J Appl Physiol](#). 2011 Apr;111(4):695-705. doi: 10.1007/s00421-010-1684-3. Epub 2010 Oct 22.

Effect of lemon verbena supplementation on muscular damage markers, proinflammatory cytokines release and neutrophils' oxidative stress in chronic exercise.

#### Peptides for healing

Peptides like BPC-157 help to heal injuries, IBS, periodontal disease, joint problems.

#### Opiates and pain

Opiate drugs like codeine, morphine, oxycodone, hydrocodone are only good for acute, short term pain. They are not good for chronic or recurrent pain because within half a week they start to INCREASE pain sensitivity. There are hundreds of articles in medical journals about this syndrome, which a search for "opiates" and "pain sensitivity increase" will find.

<https://www.google.com/search?client=ubuntu&channel=fs&q=opiates+increase+pain+sensitivity&ie=utf-8&oe=utf-8>

Morphine-induced L-type Calcium Channel Overexpression. *Phytother Res*.

2012 Mar 15. Epub 2012 Mar 15. PMID: 22422486

#### Opiates & infections, cancer

Minimizing the usage of opiates is imperative because opiates suppress the immune system & increase infections, cancer, & the spread of metastatic cancer after surgery to remove tumors.

#### Cancer Surgery: What You Need to Know Ahead of Time

By Dr. Steven Nemeroff, Oncology Health Advisor

Life Extension Foundation

<http://cancerposts.com/PDF/surgery.pdf>

Vallejo R, de Leon-Casasola O, Benyamin R. Opioid therapy and immunosuppression: a review. *Am J Ther*. 2004

Sep-Oct;11(5):354-65.

R. Melamed, S. Bar-Yosef, G. Shakhar, K. Shakhar and S. Ben-Eliyahu, Suppression of natural killer cell activity and promotion of tumor metastasis by ketamine, thiopental, and halothane, but not by propofol: mediating mechanisms and prophylactic measures, *Anesth Analg* 97 (2003), 1331–1339.

Gupta K, Kshirsagar S, Chang L, Schwartz R, Law PY, Yee D, Hebbel RP. Morphine stimulates angiogenesis by activating proangiogenic and survival-promoting signaling and promotes breast tumor growth. *Cancer Res*. 2002 Aug 1;62(15):4491-8.

## Opiate addiction

### Opiates and pain

Opiate drugs like codeine, morphine, oxycodone, hydrocodone are only good for acute, short term pain. They are not good for chronic or recurrent pain because within half a week they start to increase pain sensitivity because while they block most pain channels, over time they stimulate one pain channel. They are a lucrative cash cow for drug companies (and doctors) because they cause their users to return for more, often long after the original cause of the pain is long healed up.

Opioid usage increases fractures, falls, heart attacks, and erectile dysfunction. From 1999-2009, when doctors were being pushed to prescribe opiates more, Indiana saw a 500% increase in opiate poisoning deaths. The US had at 400% increase in opiate poisoning deaths during that time.

### Improving opiates effectiveness & preventing opiate addiction

#### Methylnaltrexone

Methylnaltrexone is different from naltrexone in that it blocks the effects of opiates but doesn't cross the blood brain barrier. It appears to stop some of the physical side effects of opiates like constipation, itching, and even addiction, but doesn't appear to stop the pain-relieving benefits in the brain. It appears to stop the increased pain sensitivity & tolerance & need for ever increasing dose to get the same painkilling effects.

J Pain Res. 2015 Oct 30;8:771-80. doi: 10.2147/JPR.S88203. eCollection 2015.

Analysis of opioid-mediated analgesia in Phase III studies of methylnaltrexone for opioid-induced constipation in patients with chronic noncancer pain.

Webster LR et al.

Reg Anesth Pain Med. 2016 Jan; 41(1): 93–98.

doi: 10.1097/AAP.0000000000000341

Efficacy and Safety of Methylnaltrexone for Opioid-Induced Constipation in Patients With Chronic Noncancer Pain

A Placebo Crossover Analysis Eugene R. Viscusi et al.

Corder G et al. Loss of ? opioid receptor signaling in nociceptors, but not microglia, abrogates morphine tolerance without disrupting analgesia. Nat Med 2017 Feb; 23:164.  
(<http://dx.doi.org/10.1038/nm.4262>)

<https://en.wikipedia.org/wiki/Methylnaltrexone>

### Olive leaf extract & olive oil

When people need opiates temporarily for extreme pain, olive leaf and olive oil) have oleuropein which

may increase the pain relief and help to stop tolerance to opiates and prevent the need to continue to increase the dose, stopping the common increase in pain sensitivity as early as half a week after starting the opiate.

Physiol Pharmacol 2013, 16(4): 360-370

Olive (*Olea europaea* L.) leaf extract and its main component (oleuropein) mitigate the development of morphine physical dependence in rats

Saeed Esmaeili Mahani , Leila Zare

J Biol Regul Homeost Agents. 2014 Jan-Mar;28(1):105-16.

Olea Europea-derived phenolic products attenuate antinociceptive morphine tolerance: an innovative strategic approach to treat cancer pain.

Muscoli C. et al.

Leila Zare, Saeed Esmaeili-Mahani, Mehdi Abbasnejad, Bahram Rasoulia,

Vahid Sheibani, Hedayat Sahraei, Ayat Kaeidi Oleuropein, Chief

Constituent of Olive Leaf Extract, Prevents the Development of

Morphine Antinociceptive Tolerance through Inhibition of

Morphine-induced L-type Calcium Channel Overexpression. Phytother Res.

2012 Mar 15. Epub 2012 Mar 15. PMID: 22422486

Esmaeili-Mahani S1, Rezaeezadeh-Roukerd M, Esmaeilpour K, Abbasnejad

M, Rasoulia B, Sheibani V, Kaeidi A, Hajjalizadeh Z. Olive (*Olea*

*europaea* L.) leaf extract elicits antinociceptive activity,

potentiates morphine analgesia and suppresses morphine hyperalgesia in

rats. J Ethnopharmacol. 2010 Oct 28;132(1):200-5. doi:

10.1016/j.jep.2010.08.013. Epub 2010 Aug 14.

Carbamazepine (Tegretol)

When carbamazepine, a drug that reduces epileptic seizures, is added

to opiates it also helps prevent the increased pain sensitivity over

time & reduces the need to increase dosages. This reduces the

addictibility of opiate drugs and makes them far more useful for chronic pain.

Due MR, Yang X-F, Allette YM, Randolph AL, Ripsch MS, et al. (2014)

Carbamazepine Potentiates the Effectiveness of Morphine in a Rodent

Model of Neuropathic Pain. PLoS ONE 9(9): e107399.

doi:10.1371/journal.pone.0107399

<http://news.medicine.iu.edu/releases/2014/09/morphine-combo-treatment.shtml>

Nimodipine (Nimotop)

Nimodipine is a calcium channel blocker that prevents tolerance and increased pain sensitivity over time in people taking opiates.

Enhancement of opiate analgesia by nimodipine in cancer patients chronically treated with morphine. A preliminary report.

In book: The Year Book of Anesthesiology and Pain Management, Publisher: Mosby-Year Book, Inc., Editors: Tinker JH, Abram SE, Chesnut DH, Roizen MF, Rothenberg DM, Wood M, pp.427-428

Summary

Opiates should be required to be prescribed with olive leaf extract or methylnaltrexone to both boost their effectiveness and to prevent addiction.

Back pain

Spinal stenosis

Pain from spinal stenosis can come from the buttocks & thighs as well as calves, stays during walking, and may reduce when leaning forward.

Peripheral artery disease (PAD)

Pain from PAD can come from exertion, feel like a cramp, and may ease with rest. Smoking, diabetes, hypertension, and LDL cholesterol may increase PAD.

## Category

1. Uncategorized

## Date Created

January 2022

## Author

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