

# Curcumin: The All in One Solution for Health

Have you been following the headlines about curcumin? I have. I've got to tell you, I've never seen an ingredient with as much capacity for improving health and fighting disease as curcumin. Research on this powerhouse antioxidant and anti-inflammatory continues to surprise and delight me. Did you see that curcumin may help soldiers suffering from PTSD by impairing "fear memories"? Or the studies that show curcumin helps relieve the pain of arthritis? How about curcumin's potential as a cancer fighter? It seems like each month we learn something new and remarkable about curcumin. If you aren't excited about curcumin, you should be. It really is an all-in-one solution.

Curcumin is the most potent component of turmeric, a plant that has been used in India as both a spice and a medicine for centuries. Besides adding a spicy kick to Indian curry, turmeric has been part of Ayurvedic medicine for millennia. But there is very little curcumin in turmeric. By extracting curcumin from turmeric, we have an even more powerful way to treat disease. Enhancing the absorption of curcumin by blending in turmeric essential oil has resulted in a natural substance that is as potent—or even more potent—at treating disease as prescription drugs, but without the adverse effects.

## Why is Curcumin Good for So Many Problems?

One of the reasons that curcumin works so well on such a wide range of diseases is because it is such a powerful anti-inflammatory. We know that almost all chronic diseases—from diabetes to heart disease to arthritis to Alzheimer's disease—have something in common: unchecked, destructive inflammation. Unlike synthetic drugs, which typically work against only a single inflammation pathway, natural curcumin reduces inflammation through its effects on *multiple* inflammation targets.<sup>1</sup>

**"Curcumin is not only a good preventative for various diseases, including a variety of human cancers, but a growing body of data indicates that it may even be helpful in conjunction with conventional chemotherapy for enhanced clinical outcomes. In addition to cancer, curcumin has been shown to be potentially effective in a wide variety of diseases, including rheumatoid and osteoarthritis, Alzheimer's disease, inflammatory bowel diseases, depression and liver problems, just to name a few thus far studied."**



**Ajay Goel, PhD, Gastrointestinal Cancer Research Laboratory, Baylor University Medical Center, Dallas, TX**

In technical terms, curcumin has been found to:

- Suppress the activation of the NF-κB, which regulates the expression of pro-inflammatory gene products
- Downregulate COX-2, the enzyme linked to most inflammation
- Inhibit 5-LOX, another pro-inflammatory enzyme
- Downregulate the expression of cell surface adhesion molecules linked to inflammation
- Inhibit the activity of TNF, one of the most pro-inflammatory cytokines (cell-signaling protein molecules)

Because of this anti-inflammatory activity, as well as its ability to kill tumor cells, increase activity of protective antioxidants such as glutathione, and modulate tumor growth cell factors, curcumin is effective against hundreds of diseases (see Figure 1).<sup>2</sup>

Curcumin is also a potent antioxidant, able to neutralize unstable, reactive free radicals. Free radicals are molecules with a missing electron that stabilize themselves by "stealing" electrons from neighboring molecules, creating another free radical in the process. This chain reaction of free radical formation is known as a free radical cascade, and it can result in cellular damage (called

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# Nutrition

## Terry's Bottom Line

If I could only take one thing to improve my health, it would be curcumin. In 45 years of studying health-related research, I have not seen anything that can match the benefits of this powerful, natural medicine. This amazing botanical can be used to treat almost every disease or illness, including:

- Cancer
- Heart Disease
- Bronchitis and Asthma
- Depression
- Alzheimer's Disease
- Rheumatoid Arthritis & Osteoarthritis
- Irritable Bowel Syndrome
- Diabetes
- Leukemia
- Cirrhosis
- Psoriasis
- Wounds
- Fatigue

I highly recommend choosing a product that features a curcumin with excellent absorption that has been proven in published human studies. The best form I have ever found uses curcumin blended with turmeric essential oil. This curcumin has been shown in published human studies to be better absorbed than standard curcumin.

More...

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oxidative stress) leading to inflammation and chronic disease—including cancer. Free radicals can negatively impact all body systems, including the immune system. Curcumin, like other antioxidants, is able to stop free radical cascades without becoming unstable itself. Its ability to neutralize free radicals is extraordinarily strong. In fact, curcumin has an **antioxidant value of over 1,000,000** per 100 g—many times higher than that of blueberries (6,552), strawberries (3,577) or dark chocolate (powder) (40,200)—well known food-based antioxidants. The dual properties of curcumin as both anti-inflammatory and super antioxidant contribute to its reputation as an extremely powerful natural medicine.

## Curcumin for Cancer

Our bodies have a natural ability to fight cancer through the activity of tumor suppressing genes. However, aging and environmental factors can turn off or silence these genes, allowing the cancer to grow and spread unchecked. Researchers have now found that one of the ways curcumin fights cancer is by re-awakening these “sleeping genes,” turning them back on to stop cancer. This branch of science is known as epigenetics, and it may hold the answer to treating many types of cancer.<sup>3</sup>

Curcumin has been shown to stop cancer initiation, promotion and progression, meaning that it stops the changes that cause normal cells to become cancerous, stops the replication of cancerous cells (tumor formation), and stops cancerous cells from migrating to other parts of the body (known as metastasis). Published studies on curcumin’s anticancer activity (so far) have found that it can suppress breast, prostate, liver, skin, oral, colon and lung cancer.<sup>4-8</sup> And as an adjunct to conventional treatment, recent cell research showed that the best results for inhibiting cancer growth occurred when curcumin was used as a pretreatment *before* chemotherapy.<sup>7</sup>

Curcumin has also been shown to increase the activity of cancer drugs and to decrease

## THE MANY DISEASES FOR WHICH CURCUMIN IS EFFECTIVE

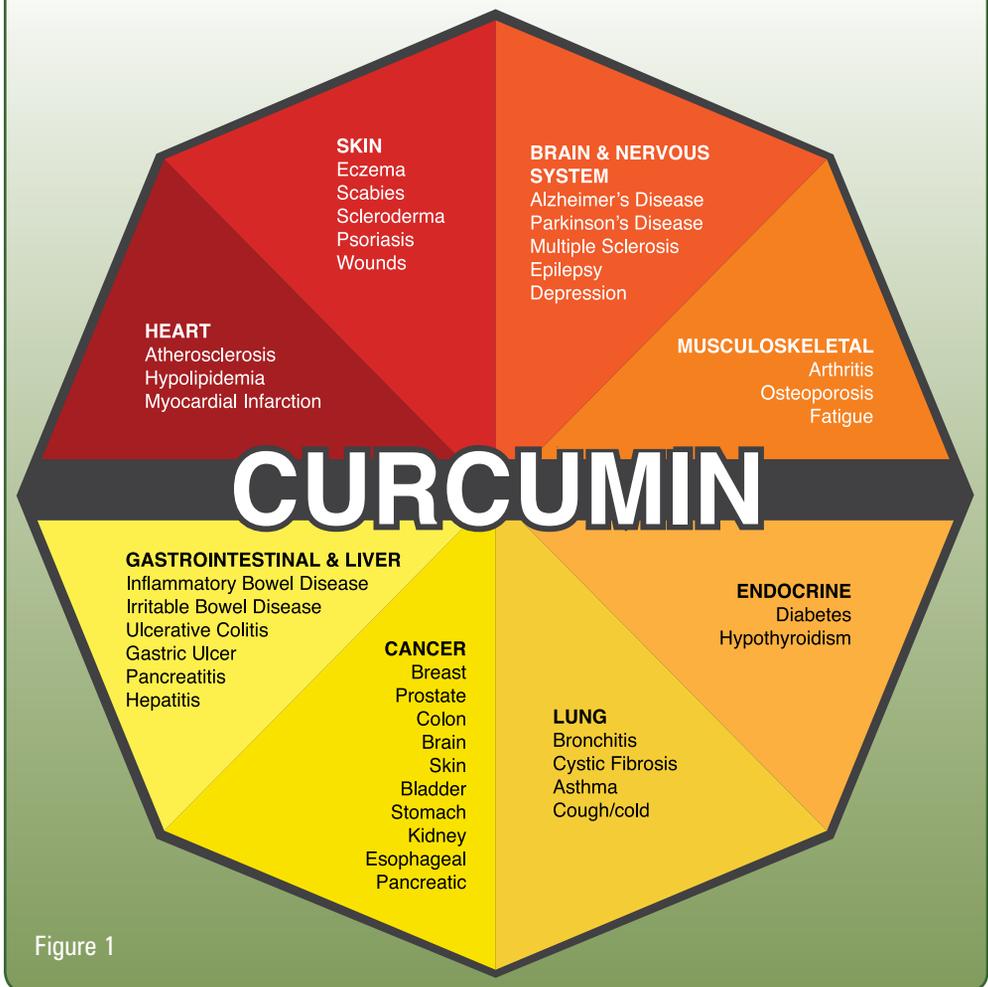


Figure 1

drug resistance in cancer cells (meaning it helps cancer drugs kill tumors more efficiently). Additionally, it protects normal cells from the toxic effects of chemotherapy drugs and radiation treatments.<sup>6-9</sup> Taking curcumin in combination with chemotherapy drugs may mean less of the toxic drugs are required, but the results will be better, with significantly reduced side effects. More human research is needed to better investigate this area of cancer care. In fact, a recent clinical trial showed that curcumin decreased the severity of adverse effects of radiation therapy on the urinary tract in men with prostate cancer.<sup>10</sup>

While the research is still early, I believe this work is very exciting and shows how curcumin works against many types of cancers, because

it works along many pathways—disrupting tumor growth along each of them.

## Curcumin, Inflammation, and Chronic Disease

Inflammation is normal. It is a natural physical response that is triggered when the body begins to repair damage or injuries. However, inflammation should be limited, with a definite beginning and end. It should not continue, day after day. On-going, persistent inflammation is destructive, not restorative. One of the keys to improving chronic diseases (heart disease, diabetes, arthritis, asthma, etc.) is stopping the cycle of chronic inflammation. As discussed earlier, curcumin, unlike synthetic drugs, works on *multiple* inflammation pathways to help

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return the body to a normal inflammation balance. Additionally, curcumin has specific, unique mechanisms of action that make it invaluable in treating chronic diseases.

## Heart Disease

In an experimental model of heart disease, curcumin was compared to the cholesterol-lowering drug lovastatin. The researchers found that curcumin protected against the effects of a high cholesterol diet just as effectively as lovastatin, preventing the inflammatory changes that lead to plaque buildup (and eventually, a heart attack), reducing triglycerides and increasing protective HDL cholesterol levels.<sup>11</sup> In fact, volunteers receiving 500 mg of curcumin daily in a small clinical trial experienced a 29% increase in HDL levels.<sup>12</sup> Just a 1% increase in this “good” form of cholesterol can reduce your risk of heart disease by 2-3%, so this finding is very important.

Curcumin has also been found to lower serum triglycerides by 27%. Triglycerides are an undesirable form of fat that circulates in the bloodstream. Although much attention has been focused on cholesterol levels in connection with risk of heart disease, new research is finding that reducing triglyceride levels is likely more important than controlling cholesterol levels. In fact, one recent scientific paper noted that high triglyceride levels nearly tripled the risk of a heart attack.<sup>13</sup> Therefore, the ability of curcumin to reduce triglyceride levels is crucial in reducing your risk of heart disease.

## Arthritis

The hallmarks of osteoarthritis are cartilage destruction and inflammation—two conditions that curcumin is able to prevent. An interesting property of curcumin is its ability to protect chondrocytes, specialized cells found in joint cartilage, from being broken down by inflammatory compounds (IL-1beta, MMP3) in the body.<sup>14</sup> A recent clinical study looked at a combination of highly absorbable curcumin and boswellia

(also an excellent natural anti-inflammatory) or the prescription drug celecoxib (Celebrex®) in the treatment of patients with arthritis. The herbal combination worked better than the drug, with no side effects!<sup>15</sup> Remarkably, 93% of the participants receiving the herbal combination reported reduced or no pain, compared to only 86% of the prescription drug group. The group receiving the special curcumin and boswellia combination were also able to walk further, and had less pain and better range of movement, all without significant adverse effects. Prescription drugs such as celecoxib are classified as non-steroidal anti-inflammatory drugs (NSAIDs), and are known to cause adverse effects such as stomach and intestinal bleeding ulcers, reduced kidney function, and increased blood pressure and risk of heart attack. Curcumin works just as effectively at reducing inflammation—without these potentially life-threatening adverse effects.

In patients with rheumatoid arthritis (RA), the body’s own immune cells attack and destroy the lining of the joints (synovium). This chronic, painful and debilitating condition is characterized by inflammation throughout the body, warm and swollen joints, and even joint destruction. Recently, researchers looked at the effects of 500 mg of a specialized, highly absorbable curcumin extract taken twice daily compared to 50 mg of the prescription drug diclofenac sodium (one brand name is Voltaren®) twice daily, or a combination of the two in patients with rheumatoid arthritis. The group receiving the highly absorbable curcumin had the greatest reduction in joint pain and swelling, with no adverse effects. In contrast, 14% of the participants in the drug group stopped the test because of the adverse effects they experienced.<sup>16</sup>

**Of course, curcumin is effective for even more than the conditions we’ve outlined so far. Next week, we’ll take a look at curcumin for diabetes, Alzheimer’s disease, Depression, Irritable Bowel Syndrome (IBS), wound healing, and more.**

1. Goel A, Jhurani S, Aggarwal BB. Multi-targeted therapy by curcumin: how spicy is it? *Mol Nutr Food Res*. 2008;52(9):1010-30.
2. Aggarwal BB, Sundaram C, Malani N, Ichikawa H. Curcumin: the Indian solid gold. *Adv Exp Med Biol*. 2007;595:1-75.
3. Meeran SM, Ahmed A, Tollefsbol TO. Epigenetic targets of bioactive dietary components for cancer prevention and therapy. *Clin Epigenetics*. 2010;1(3-4):101-116.
4. Shehzad A, Wahid F, Lee YS. Curcumin in cancer chemoprevention: molecular targets, pharmacokinetics, bioavailability, and clinical trials. *Arch Pharm (Weinheim)*. 2010;343(9):489-99.
5. Johnson JJ, Mukhtar H. Curcumin for chemoprevention of colon cancer. *Cancer Lett*. 2007;255(2):170-81.
6. Deepa Das A, Balan A, Sreelatha KT. Comparative study of the efficacy of curcumin and turmeric as chemopreventative agents in oral submucous fibrosis: a clinical and histopathological evaluation. *JIAOMR*; April-June 2010;22(2):88-92.
7. Buhmann C, Kraeche P, Lueders C, Shayan P, Goel A, et al. Curcumin Suppresses Crosstalk between Colon Cancer Stem Cells and Stromal Fibroblasts in the Tumor Microenvironment: Potential Role of EMT. *PLoS ONE*. 2014;9(9): e107514
8. Shakibaei M, Buhmann C, Kraeche P, Shayan P, Lueders C and Goel A. Curcumin chemosensitizes 5-Fluorouracil resistant MMR-deficient human colon cancer cells in high density cultures. *PLoS ONE*. 2014;9(1).
9. Goel A, Aggarwal BB. Curcumin, the golden spice from Indian saffron, is a chemosensitizer and radiosensitizer for tumors and chemoprotector and radioprotector for normal organs. *Nutr Cancer*. 2010;62(7):919-30.
10. Hejazi J, Rastmanesh R, Taleban F, Molana S, and Ehtejab G. A Pilot Clinical Trial of Radioprotective Effects of Curcumin Supplementation in Patients with Prostate Cancer. *J Cancer Sci Ther*. 2013, 5:10.
11. Shin SK, HA TY, McGregor RA, Choi MS. Long-term curcumin administration protects against atherosclerosis via hepatic regulation of lipoprotein cholesterol metabolism. *Mol Nutr Food Res*. 2011 Nov 7.
12. Soni KB, Kuttan R. Effect of oral curcumin administration on serum peroxides and cholesterol levels in human volunteers. *Indian J Physiol Pharmacol*. 1992 Oct;36(4):273-5.
13. Gaziano JM, Hennekens CH, O'Donnell CJ, Breslow JL, Buring JE. Fasting triglycerides, high-density lipoprotein, and risk of myocardial infarction. *Circulation*. 1997;96(8):2520-5.
14. Henrotin Y, Clutterbuck AL, Allaway D, et al. Biological actions of curcumin on articular chondrocytes. *Osteoarthritis Cartilage*. 2010;18(2):141-9.
15. Antony B, Kizhakedath R, Benny M, Kuruvilla BT. Clinical Evaluation of a herbal product (Rhulief™) in the management of knee osteoarthritis. Abstract 316. *Osteoarthritis Cartilage*. 2011;19(S1):S145-S146.
16. Chandran B, Goel A. A Randomized, Pilot Study to Assess the Efficacy and Safety of Curcumin in Patients with Active Rheumatoid Arthritis. *Phytother Res*. March 9, 2012 doi: 10.1002/ptr.4639.

When in doubt, always consult your physician or healthcare practitioner. This article is intended to provide you with information to maintain your health.