Curcumin: The All in One Solution for Health

Protects Your Cardiovascular System

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 to treat and prevent disease.

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 flavor to Indian curry, turmeric has been part of Ayurvedic medicine for millenia. 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 than 14 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 cancer 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.[1]

In technical terms, curcumin has been found to:

- Suppress the activation of the NF-kB, which regulates the expression of pro-inflammatory gene products
- Downregulate COX-2, the enzyme linked to most inflammation

"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*

- 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).[2]

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 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, a specially prepared extract of curcumin has an antioxidant value of **over 1,500,000 per 100 g**. The dual properties of curcumin as both anti-inflammatory and super antioxidant contribute to its reputation as an extremely powerful natural medicine.

Terry Talks 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**

The best, most absorbable, curcumin is one that is blended with turmeric oil for up to 10 times the absorption and blood retention at meaningful levels as plain curcumin.

HERE IS THE FORMULA I SUGGEST:

Proprietary Complex 750 mg

Curcumin (*Curcuma longa*) Rhizome Extract, phospholipids, turmeric essential oil, supplying 500 mg of pure curcuminoids. Other dosages and delivery forms are available for differing individual needs.

More…

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Curcumin: The All in One Solution for Health

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.[3]

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.[4-8] 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.[7]

Curcumin has also been shown to increase the activity of cancer drugs and to decrease drug resistance in cancer cells (meaning it helps cancer drugs kill tumors more effectively). Additionally, it protects normal cells from the toxic effects of chemotherapy drugs and radiation treatments.[9] 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.[10]

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 the body return 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.[11] In fact, volunteers receiving 500 mg of curcumin daily in a small clinical trial experienced a 29% increase in HDL levels.[12] 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

THE MANY DISEASES FOR WHICH CURCUMIN IS EFFECTIVE

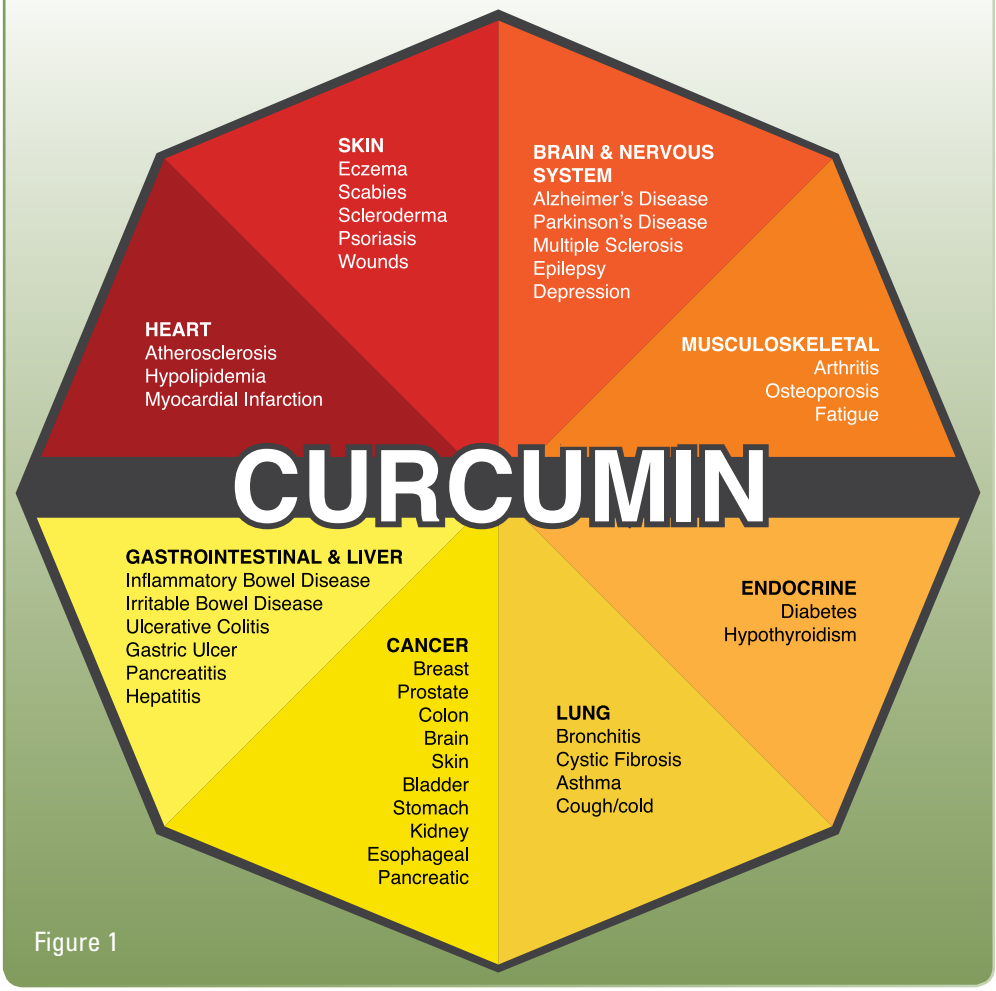


Figure 1

cholesterol levels in connection with risk of heart disease, new research is finding that reducing triglyceride levels is likely much 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.[13] 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 in the body (IL-1beta, MMP3).[14] 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 serious side effects*![15] 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 extract 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 well known for causing 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 twice daily of a specialized highly absorbable curcumin extract enhanced with turmeric essential oil compared to the prescription drug diclofenac sodium (one brand name is Voltaren®) 50 mg 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.[16]

Diabetes

While diabetes is a disorder of blood sugar metabolism, inflammation plays a very strong role in its development and progression. Some researchers now believe that chronic, low-level inflammation, especially when associated with obesity, is actually the cause of insulin resistance leading to Type 2 diabetes. In an experimental model of diabetes, curcumin was compared to the drug rosiglitazone (Avandia®), and found to be equally as effective in reducing insulin resistance, inflammatory markers, and fats in the bloodstream.[17] Other studies looking at the effects of curcumin in models of diabetes have found similar results: improved insulin response and reduced blood glucose levels.[18,19] Additionally, scientific studies have found that curcumin may protect against other problems associated with diabetes, such as the breakdown of eye tissue, potential brain damage, nerve pain (neuropathy), and heart disease.[20-23]

Alzheimer's Disease

The cause of Alzheimer's disease (AD) is not entirely known. However, certain characteristic changes are found in the brains of people with this condition – accumulated clusters of a protein called beta amyloid, and clumps of dead and dying nerve and brain cells. These clusters and clumps, called plaques and tangles, are believed to interfere with the proper transmission of messages between brain cells and lead to the death of brain cells as well. Inflammation is also involved, causing the accumulation of plaques and tangles to have even more damaging effects. Because of the known anti-inflammatory effects of curcumin, researchers are now looking at its effects in treating AD.

What they have discovered is astonishing. Not only does curcumin protect brain cells from damaging inflammation, in experimental models of Alzheimer's disease, curcumin was able to reduce beta amyloid levels and shrink the size of accumulated plaques by over 30%![24] In fact, curcumin is more effective in inhibiting formation of beta amyloid protein fragments than many other drugs being tested as Alzheimer's treatments. One of the most prestigious Alzheimer's research institutes in the world, the McCusker Alzheimer's Research Foundation (supporting research at Edith Cowan University, Perth, Australia) is focused on learning more about the benefits of curcumin for treating AD.

Depression

Depression is a debilitating disease that is difficult to treat. Approximately 30% of patients who take prescription drugs to relieve their depression experience no benefits, and the remaining 70% will have only partial improvement. Additionally, the side effects can be significant, including nausea, weight gain, dizziness, dry mouth, blurred vision, insomnia and more. Because curcumin has been shown to be effective at treating other brain disorders, researchers have investigated whether it is also helpful in relieving depression.

First, inflammation is known to play a major role in the development of depression. Therefore, it seems logical that the anti-inflammatory properties of curcumin may be helpful. Second, curcumin is also able to modulate the levels of brain neurotransmitters (chemical messengers – serotonin, norepinephrine, and dopamine) that influence mood, behavior, appetite, emotions, and even dreaming and memory. In experimental models of depression, curcumin has been shown to increase levels of the "feel good" neurotransmitter, serotonin, as well as relieve other symptoms of depression.[26,27] In a published study comparing a special, highly absorbable curcumin enhanced with turmeric oil to two prescription drugs fluoxetine (Prozac®) and imipramine (Tofranil®), an experimental model found the highly absorbable curcumin to be just as effective as the two drugs – but without the adverse side effects.[28]

In a clinical study, patients with major depressive disorder (MDD) showed the highest response using a combination of fluoxetine (Prozac®) ***and*** high-absorption curcumin enhanced with turmeric essential oil – a 77.8% response rate as measured by

the Hamilton Depression Rating Scale (HAMD-17).[29]

Interestingly, the single-therapy groups scored almost exactly the same, with fluoxetine at 64.7% and curcumin at 62.5% – numbers so close that the difference is not statistically significant from one another.[29]

Two important takeaways from this study: first, curcumin worked as well as the prescription drug fluoxetine in terms of the measurable changes in the HAMD-17 score from baseline to six weeks of treatment; second, curcumin can be an effective and safe treatment for patients with MDD *without* the terrible side effects of increased suicidal thoughts or other psychological disorders.

In a placebo-controlled study, high-absorption curcumin enhanced with turmeric essential oil showed antidepressant effects in people with major depressive disorder as early as 4 weeks after treatment. Additionally, people with a typical depression, a form that often does not respond well to antidepressant drugs respond exceptionally well to curcumin.[30] Research shows that curcumin influences biomarkers associated with depression and reduces their effects.[31]

Gastrointestinal Inflammation (IBD and IBS)

Chronic inflammation of the intestines (the gastrointestinal tract) is associated with several commonly experienced diseases – particularly, irritable bowel syndrome (IBS), inflammatory bowel disease (IBD), and Crohn's disease. Bloating, frequent diarrhea or constipation, gas, abdominal pain, and even heartburn and acid reflux, can all be signs that unchecked inflammation is affecting the proper function of your digestive system. A study of over 200 people with IBS found that use of a standardized extract of curcumin was associated with up to a 25% reduction in abdominal pain, and two thirds of participants reported an improvement in overall symptoms.[32] In a small pilot study of patients with Crohn's disease or ulcerative proctitis (a type of IBD) who received curcumin along with the standard anti-inflammatory drugs (including steroids), many of the patients were able to reduce or stop the medications, and inflammation markers decreased to a normal level.[33] One of the interesting benefits of curcumin is that it has not only been shown to reduce inflammatory compounds in the intestines, it can actually strengthen the intestinal wall to prevent harmful bacteria from passing out of the intestines and reaching other organs, such as the liver and kidneys.[34]

Wound Healing and Skin Conditions

Curcumin not only protects skin with its ability to quench damaging free radicals and reduce inflammation, but it has also been shown to improve collagen deposition and vascular density in wounds. Collagen is the foundation upon which healthy skin is built; vascular density is what ensures adequate blood flow to carry in the nutrients needed for repair of damaged tissue.[35] Many people who experience problems with slow healing of wounds also have diabetes. Diabetes interferes with wound healing because it causes reduced blood flow (nutrients needed for tissue repair are carried in the bloodstream). High blood sugar also interferes with the ability of the body to clear away damaged cells and build new skin cells. In an experimental model of diabetes, both oral and topical curcumin were able to speed wound repair and healing.[36] Radiation treatment for cancer can also cause significant damage to skin and delay healing. Pretreatment with oral curcumin has been shown in multiple studies to speed skin repair and healing.[37] And finally, both oral and topical curcumin has shown promise at reducing inflammatory skin conditions such as psoriasis and eczema, as well as skin cancer.[35]

Other Chronic Diseases

Curcumin has also shown promise in treating many other diseases and conditions, including obesity, kidney and liver disease, eye disorders, lung conditions, allergies, pancreatitis, and more.[38,39] Curcumin may be able to protect against weight gain and body fat accumulation. In a study of animals fed a high fat diet, curcumin supplementation prevented the increase of adipose (fat) tissue, as well as preventing fat deposits in the liver.[40]

Curcumin Safety

No toxicity issues have been reported for curcumin, even when used in dosages as high as 10 grams or more daily.[41,42] Because it is so safe and non-toxic, curcumin therapy is something to consider for almost any condition, especially conditions involving inflammation.


Turmeric

Why Can't I Just Use Turmeric?

If you want to add a healthy, unique flavor to your cooking, by all means sprinkle in some turmeric. But if you want to treat serious health conditions, you need to take a concentrated extract of turmeric called curcumin.

Think of it this way—an apple comes from a tree. To get healthy, you don't eat the whole tree, you just eat the apple. For ***medicinal*** *effects, it isn't enough to use turmeric powder (containing only 2-5% curcumin content) just as you wouldn't eat a tree if you wanted an apple.*

Today, we extract curcumin from turmeric to use as a natural medicine for treating cancer, Alzheimer's disease, arthritis, and many other chronic diseases. Save the turmeric powder for your next batch of curry. Use superior absorption curcumin for your health concerns!

Powerful Natural Medicine

I hope this information has shown you why I think curcumin is the most powerful natural medicine available. No matter what your health concern might be, curcumin can help. Remember that when you shop for a curcumin product for yourself or your loved ones, look for an absorbable curcumin blended with turmeric essential oil to get the best benefits possible from this amazing natural medicine.

The information provided here is meant to be used in conjunction with the advice of a healthcare practitioner, who can help develop a treatment plan that is designed to address your unique health concerns for an optimal outcome.

More…

Curcumin Research Highlights

There are over 8,000 published studies on the benefits of curcumin. Here are a few key results from research using a special superior absorption curcumin.

INDICATION	STUDY DETAILS		REFERENCE INFORMATION
Published Studies			
ALZHEIMER'S DISEASE	**Design:** This study involved 34 participants, aged 50 years and above who were diagnosed with probable or possible Alzheimer's disease. The participants were randomized to receive either 1 gram or 4 grams of a specialized curcumin (BCM-95®), or a placebo.	**Benefits:** Both groups who received the specialized curcumin extract enhanced with turmeric essential oil saw improvement in their antioxidant status. The curcumin groups also noted an increase in the serum levels of plaque-forming beta amyloid, which may reflect curcumin's ability to break down beta amyloid deposits. More adverse effects were noted in the placebo group compared to either curcumin group.	Baum L, Lam CW, Cheung SK, et al. Six-month randomized, placebo-controlled, double-blind, pilot clinical trial of curcumin in patients with Alzheimer disease. *J Clin Psychopharmacol*. 2008;28(1):110-113.
OSTEOARTHRITIS	**Design:** This study involved subjects with osteoarthritis of the knee who were randomized to two groups. One group took a 500 mg blend of curcumin (BCM-95®) and boswellia (BosPure®) twice a day while the other took the prescription drug celecoxib (one brand name is Celebrex®) 100 mg twice a day.	**Benefits:** Efficacy and tolerability of the herbal combination used in the current study (BCM-95®) was shown to be superior to those of celecoxib (NSAID) for treating active osteoarthritis. The curcumin and boswellia blend was better than celecoxib in relieving pain, walking distance, and joint line tenderness scores. It was equally as effective as celecoxib in alleviating crepitus and range of joint movements.	B. Antony, R. Kizhakkedath, M. Benny, B. Kuruvilla. Randomized, Controlled Human Clinical Study to Assess the efficacy and safety of BCM-95® & BosPure® compared to Celecoxib in the management of Knee Osteoarthritis. Poster presented at the Osteoarthritis Research Symposium Internationale (OARSI) Annual World Congress on Osteoarthritis; September 2011. San Diego, CA. Abstract 316. Osteoarthritis Cartilage. 2011;19(S1):S145-S146.
RHEUMATOID ARTHRITIS	**Design:** 45 subjects randomized to special absorbable curcumin (BCM-95®) (500 mg), diclofenac sodium (50 mg), or absorbable curcumin (500 mg) +diclofenac (50 mg) groups. (One brand name of diclofenac sodium is Voltaren®)	**Benefits:** Patients receiving the special absorbable curcumin enhanced with turmeric essential oil (BCM-95®) had greater reduction in joint pain and swelling with no adverse effects. 14% of participants taking the drug dropped out because of severity of adverse effects.	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.
DEPRESSION	**Design:** 50 patients with major depressive disorder (MDD) received 500 mg of high-quality absorbable curcumin (BCM-95®) twice daily or placebo for 8 weeks. **Design:** 56 individuals with major depressive disorder were treated with high-absorption curcumin (BCM-95®) (500 mg twice daily) or placebo for 8 weeks. **Design:** The study followed 60 patients, 18 years or older, diagnosed with MDD and who scored more than seven on Hamilton Depression Rating Scale (HAMD-17). The patients were divided into three groups: curcumin (1000 mg); fluoxetine (20 mg - one brand name is Prozac®); and curcumin (BCM-95®) (1000 mg)+fluoxetine, for eight weeks.	**Benefits:** Salivary, urinary and blood biomarkers collected from patients taking curcumin showed that supplementation influenced several biomarkers, including higher baseline plasma endothelin-1 and leptin that may be associated with its antidepressant activity. **Benefits:** High-absorption curcumin enhanced with turmeric essential oil (BCM-95®) had significant antidepressant effects in people with major depressive disorder after 4 weeks of use. Greater efficacy from curcumin treatment was identified in a subgroup of individuals with atypical depression. **Benefits:** The highest proportion of response was in the group using the combination of fluoxetine and high-absorption curcumin (BCM-95®) at 77.8%. The scores for the single-therapy groups were not statistically significant, with fluoxetine at 64.7% and curcumin at 62.5%.	Lopresti AL, Maes M, Maker GL, Hood S, Drummond PD. Curcumin and major depression: A randomized, double-blind, placebo-controlled trial investigating the potential of peripheral biomarkers to predict treatment response and antidepressant mechanisms of change. European *Neuropsychopharmacology*. Dec. 5, 2014 Lopresti AL, Maes M, Maker GL, Hood S, Drummond PD. Curcumin for the treatment of major depression: A randomised, double-blind, placebo controlled study. J *Affect Disord*. 2014;167:368-375. Sanmukhani J, Satodia V, Trivedi J, Patel T, Tiwari D, Panchal B, Goel A, Tripathi CB. Efficacy and safety of curcumin in major depressive disorder: a randomized controlled trial. *Phytother Res*. 2013;28(4):579-85.
CANCER	**Design:** To determine if absorbable curcumin and turmeric essential oil could improve health of oral tissue and help prevent conversion to oral cancer. Three groups of 16 people each: Group 1 received one capsule of absorbable curcumin, 500 mg curcuminoids (BCM-95®), twice daily; group 2 received 12 drops of turmeric essential oil, held in the mouth twice daily and then swallowed for an approximate dosage of 600 mg, and the last group received a placebo twice daily for 6 months.	**Benefits:** Both the absorbable curcumin (BCM-95®) and turmeric essential oil reduced oral discomfort/mouth burning significantly. There were significant reductions in disease scores for both groups 1 and 2 at each measurement. Authors reported "remarkable improvements after only the first 15 days of use." After 6 months of use, 7 of the 16 participants in the placebo group were in the advanced disease stage (closer to malignancy) compared to 1 person in the absorbable curcumin group.	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.
	Design: Researchers investigated the role of signaling between colon cancer cells and normal cells, and how chemotherapy drugs and high-absorption curcumin affect that communication. Researchers also examined impact of treatments on markers of cancer stem cells. The culture was treated with either 5 Fluorouracil (5-FU), a common chemotherapeutic agent used for colorectal cancer, high-absorption curcumin (BCM-95®), or a combination of 5-FU and high-absorption curcumin.	**Benefits:** Best results for inhibiting cancer growth occurred when the curcumin was used as a pretreatment before chemotherapy. The addition of curcumin reduced the amount of 5-FU needed to inhibit cancer cell growth substantially and sensitized the cancer stem cells to chemotherapy treatment. Treatment with 5-FU actually promoted the growth of cancer stem cells.	Buhrmann C, Kraehe 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
	Design: Researchers investigated effectiveness of 5-FU and high-absorption curcumin (BCM-95®) in context of DNA mismatch repair (MMR) status and cancer stem cell activity in 3D cultures of colorectal cancer cells.	**Benefits:** Curcumin improved the efficacy of the chemotherapy drug. Pre-treatment with high-absorption curcumin (BCM-95®) significantly enhanced the effect of 5-FU on cancer cells, in contrast to 5-FU alone, enhanced apoptosis, and inhibited their growth.	Shakibaei M, Buhrmann C, Kraehe 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).
	Design: 40 prostate cancer patients undergoing external beam radiotherapy (EBRT) were randomly assigned to high-absorption curcumin (BCM-95®) (6 × 500 mg capsules) or a placebo group.	**Benefits:** Curcumin decreased the severity of adverse effects of radiation therapy on the urinary tract in men with prostate cancer. The curcumin group had a 50% reduction in incidence of daytime urinary frequency and approximately 40% reduction of limitations on daily activities compared to placebo.	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.

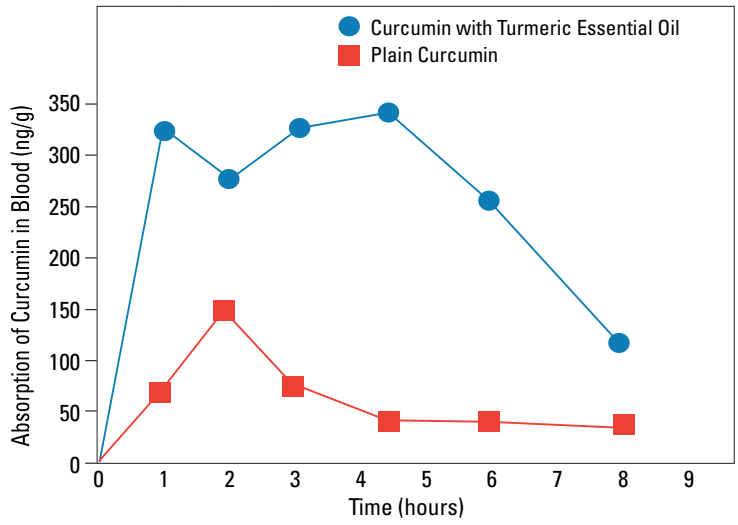
Curcumin: The All in One Solution for Health

Curcumin Absorption

Using curcumin as a medicine has traditionally been difficult because it is poorly absorbed in the gastrointestinal tract. In some of the early clinical studies, researchers found it necessary to administer many grams of curcumin in order to see any significant increases in serum curcumin levels.

Additionally, the curcumin did not remain at a therapeutic level very long. Fortunately, it has been found that blending high-quality curcumin with turmeric essential oil yields a curcumin formula that is better absorbed than standard curcumin and remains in the bloodstream at significant levels far longer. Because of this improvement, a dose of only one or two capsules a day delivers a clinically-proven amount of beneficial curcumin. This specialized curcumin has been used in research studies at prestigious institutions, proving its positive effects on health as well as its enhanced absorption (see chart at right).[41,42]

Absorption Comparison of Various Formulations of Curcumin[1,43]



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