

Terry Talks Nutrition

IMPROVING THE HEALTH OF AMERICA



The Two Most Powerful Natural Medicines



Curcumin and French Grape Seed

Two Natural Medicines That Can Prevent and Cure Disease

Trying to narrow powerful natural medicines down to just two may sound tough. But in many ways, these two choices—curcumin and grape seed extract—are the clear contenders for the title. Both have been extensively researched, they work synergistically through different absorption pathways, and both are available in effective, studied forms that greatly improve on their already strong abilities.

There's no doubt that we need to drastically improve our health. The fact that 60 percent of Americans are taking some kind of prescription drug should set off alarms in everyone. Synthetic medicines typically create more problems than they claim to solve. They are "one track" solutions to problems that need a much wider and deeper approach.

That's why I consider BCM-95® curcumin and French tannin-free grape seed extract to be the two natural medicines everyone needs for many health conditions:

- **Cancer**
- **Diabetes**
- **Heart Disease**
- **Fatty Liver**
- **Joint Pain**
- **Athletic Recovery**
- **Alzheimer's Disease**
- **Depression**

And that's just a partial list. Both extracts are effective because they don't just help you deal with one problem—they fix what needs to be fixed in every metabolic pathway in your body. It may be hard to believe that two extracts can do so much, but after reading this booklet, and discovering the many things these amazing botanicals can do, I think you'll agree. They really are the world's two most powerful natural medicines. And they're as effective as many prescription drugs without risk of side effects.



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 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 millennia. But there is very little curcumin in turmeric. By extracting curcumin from turmeric, the world has 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.

"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

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 Curcumin works at multiple levels of multiple pathways all simultaneously. It's compared to a pharmacy of molecules.

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**
- **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.

THE MANY DISEASES FOR WHICH CURCUMIN IS EFFECTIVE

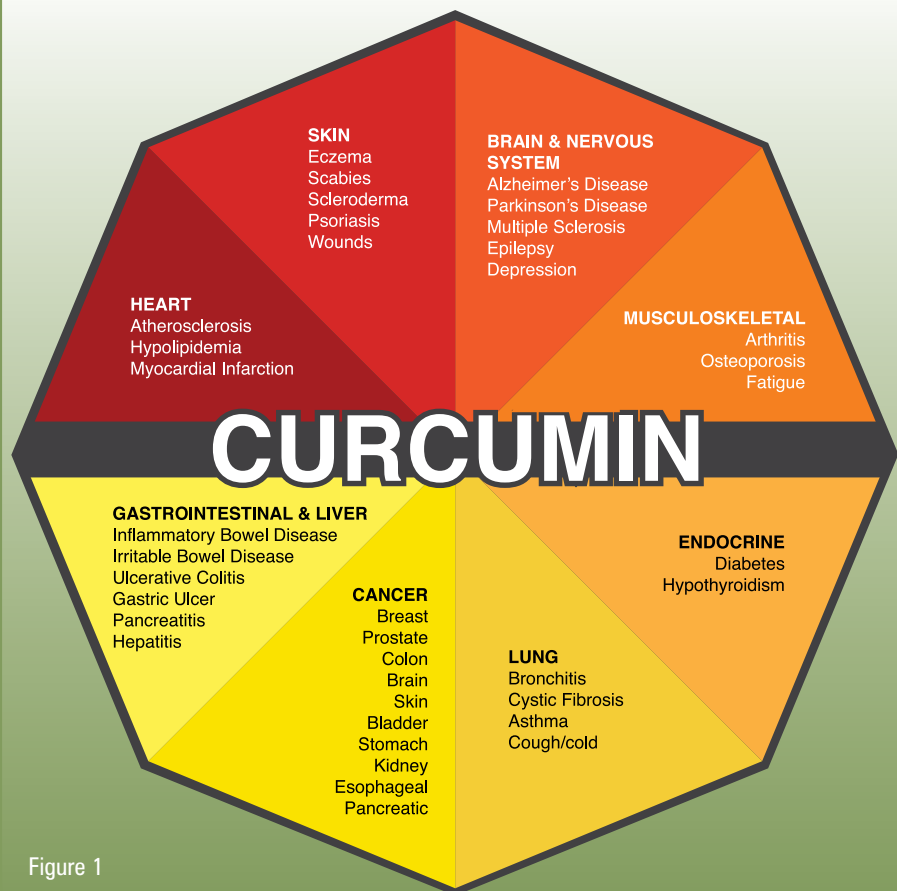


Figure 1

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, or in other words, putting them to sleep 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

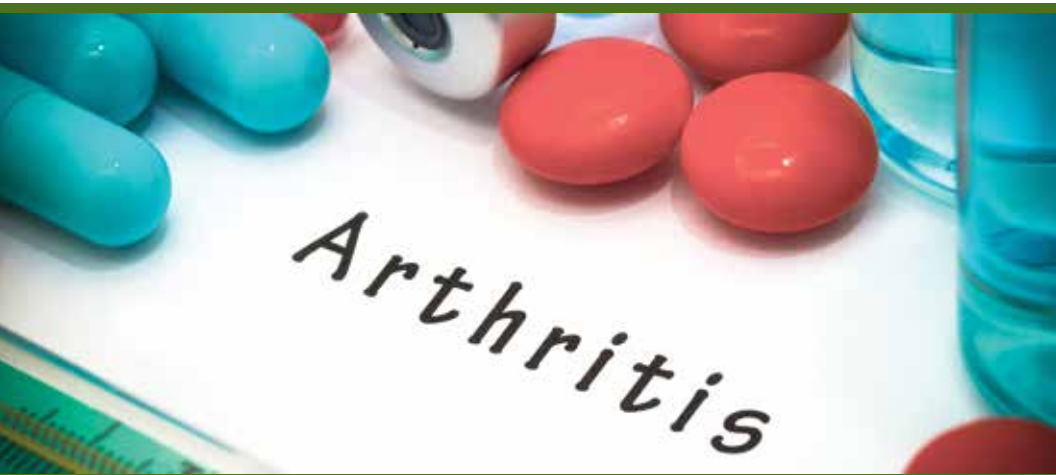
Inflammation is normal. It is a natural physical response that is triggered when the body begins to repair damage or injuries. However, inflammation should be limited, with a definite beginning and end. It should not continue, day after day. On-going, persistent inflammation is destructive, not restorative. 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. 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 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. It is my observation that cholesterol is not the enemy.



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 a 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

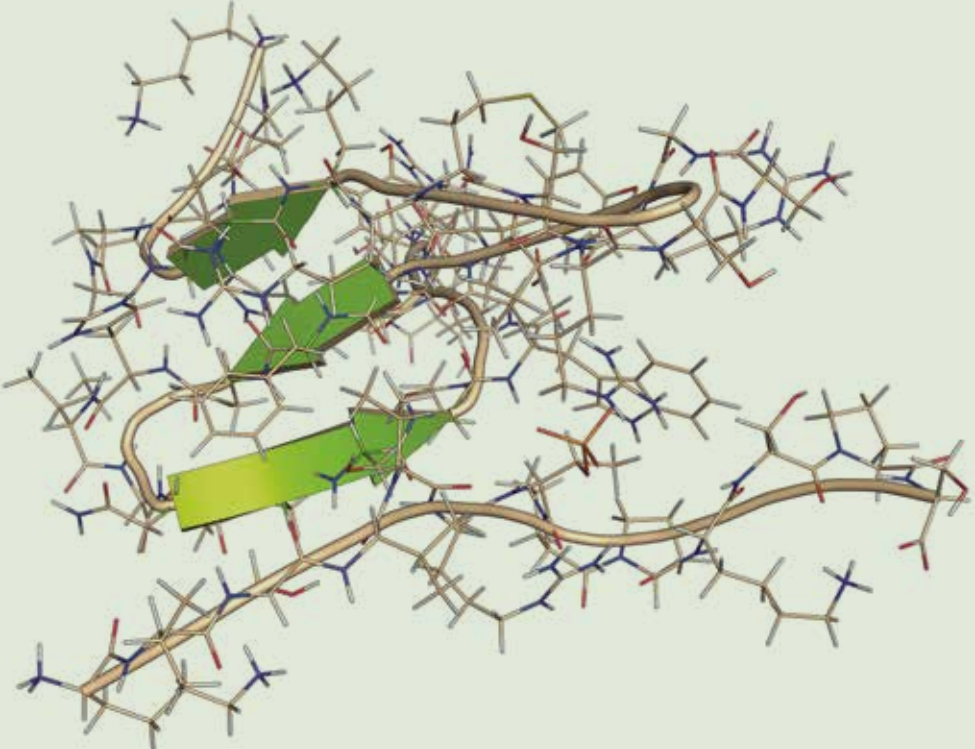
While diabetes is a disorder of blood sugar metabolism, inflammation plays a very strong role in its development and progression. Some researchers now believe that chronic, low-level inflammation, especially when associated with obesity, is actually the cause of insulin resistance leading to type 2 diabetes. 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, sexual dysfunction, 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 serious adverse effects associated with prescription drugs for depression.

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.

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. I recommend shopping for an enhanced absorption curcumin called BCM-95[®], since it is the most clinically studied enhanced absorption curcumin. This form of curcumin is blended with turmeric essential oils to get the best benefits possible from this amazing natural medicine.



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 to treat and prevent disease!

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.

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.

PUBLISHED STUDIES

INDICATION

ALZHEIMER'S DISEASE

STUDY DETAILS

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.

REFERENCE INFO

Baum L, Lam CW, Cheung SK, et al. Six-month randomized, placebo-controlled, double-blind, pilot clinical trial of curcumin in patients with Alzheimer's disease. *J Clin Psychopharmacol.* 2008;28(1):110-113.

INDICATION

OSTEOARTHRITIS

STUDY DETAILS

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.

REFERENCE INFO

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.

INDICATION

RHEUMATOID ARTHRITIS

STUDY DETAILS

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.

REFERENCE INFO

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.

Curcumin Research Highlights - PUBLISHED STUDIES *continued*

INDICATION

DEPRESSION

STUDY DETAILS

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.

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.

REFERENCE INFO

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

STUDY DETAILS

Design: 56 individuals with major depressive disorder were treated with high-absorption curcumin (BCM-95®) (500 mg twice daily) or placebo for 8 weeks.

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.

REFERENCE INFO

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.

STUDY DETAILS

Design: The study followed 60 patients, 18 years or older, diagnosed with MDD and who scored more than seven on Hamilton Depression Rating Scale (HAM-D-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: 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%.

REFERENCE INFO

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.

INDICATION

CANCER

STUDY DETAILS

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.

REFERENCE INFO

Deepa Das A, Balan A, Sreelatha KT. Comparative study of the efficacy of curcumin and turmeric as chemopreventive agents in oral submucous fibrosis: a clinical and histopathological evaluation. *JIAOMR*; April-June 2010;22(2):88-92.

Curcumin Research Highlights - PUBLISHED STUDIES *continued*

INDICATION

CANCER *continued*

STUDY DETAILS

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.

REFERENCE INFO

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

STUDY DETAILS

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.

REFERENCE INFO

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).

STUDY DETAILS

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.

REFERENCE INFO

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.

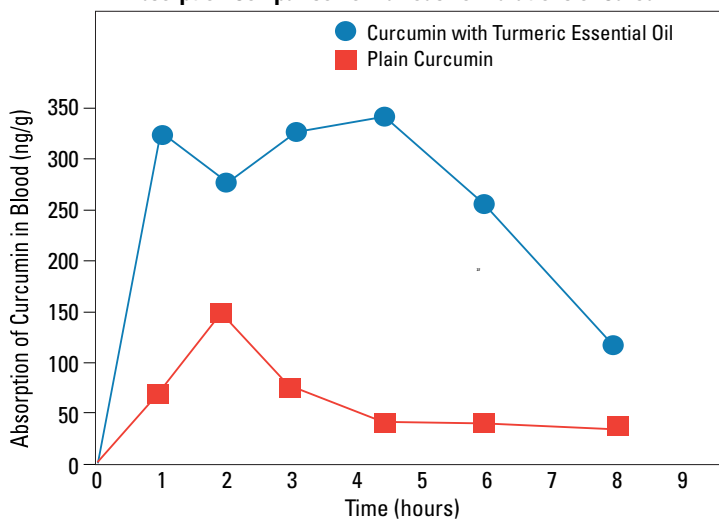
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Curcumin Absorption

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 Curcumin¹



References (curcumin):

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 chemopreventive agents in oral submucous fibrosis: a clinical and histopathological evaluation. *JIAOMR*; April-June 2010;22(2):88-92.
7. Buhmann 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
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I've never seen an ingredient with as much capacity for improving health and fighting disease as curcumin.



I recommend a tannin-free
French Grape Seed Extract.

Grape Seed Extract: A Botanical Wonder

There are many botanical ingredients that simply work wonders for our health. Grape seed extract is one of them. This amazing ingredient prevents heart disease, kills cancer cells, speeds the healing of damaged muscle tissue, reduces non-alcoholic fatty liver disease, reduces inflammation, and can even stop diabetes and prevent weight gain.

History

People have been enjoying grapes for thousands of years, either as food or wine. Because of this, it would be understandable if you thought that the seeds from grapes were an old European folk medicine. But the reality is much different. Grape seed extracts have really only been heavily researched since the middle of the 20th century. And even then, the study of grape seed oligomeric proanthocyanidins (OPCs) developed in a roundabout way.

The story begins with a French professor, Jacques Masquelier. Early in his professional life, Masquelier found himself working in the vineyard-rich region of Bordeaux. Although he was working in one of France's most famous wine-growing regions, his work centered on discovering the beneficial properties that could be extracted from the waste material of peanuts bound for the nearby oil presses. This research in the late 1940s and early 1950s solidified his understanding of anthocyanins, still very much in the early stages of discovery for most scientists. He began to see how many plants shared the building blocks for these valuable natural chemicals, and early lab work revealed that OPCs from peanut skins shortened bleeding time, strengthened blood vessels, and protected the cardiovascular system overall.



Later, Masquelier had a great interest in the history of the French explorer Jacques Cartier. Having already isolated OPCs from pine bark back in France, he applied this theory after reading the diaries of explorer Jacques Cartier. Cartier's ship and crew were trapped in the ice of the St. Lawrence River by an early winter, preventing them from returning to France. His crew was surviving on dried meat and biscuits, no fresh fruits or vegetables. His crew was dying from a horrible disease we now know as scurvy. Many of his crew had already died from a lack of a cure. A Native American Indian showed Cartier how to make a tea from a specific pine tree, and the tea cured the scurvy. Masquelier quickly realized that the genus and species of the tree was *Tsuga canadensis*, native to the region and rich in OPC content, found on the reddish-colored inside layer of the bark.

From his continuing research, Masquelier discovered another powerful source of OPCs right in his backyard—grape seeds. He pioneered the process of extracting OPCs from grape seeds. Grape seed extract has since become one of the world's most important clinically studied ingredients supported by thousands of studies.



In the years since, grape seed extract has become a preferred botanical for a variety of health concerns, from lowering blood pressure to preventing tumors. I believe that adding an absorbable, tannin-free OPC grape seed extract to your regimen is one of the best things you can do for your health, and we'll take a look at its amazing abilities in this *Terry Talks Nutrition*® Booklet.

Protects Your Cardiovascular System

Grape seed extract is well known for improving heart and cardiovascular strength. There's good reason for this. Grape seed extract reduces high blood pressure, protects the blood vessel walls from free radical damage, and prevents the dangerous oxidation of LDL cholesterol—one of the first steps on the road to a heart attack or stroke.

In an Italian clinical study, individuals with pre- or mild hypertension were divided into three groups, two with grape seed extract, at lower and higher dosages, and one with a diet and exercise intervention only, serving as a control group. At the end of the four-month trial, both grape seed extract groups saw an improvement in blood pressure, although those at the higher dosage noticed more dramatic effects. In fact, blood pressure numbers normalized in **93 percent of those in the higher dosage group.**¹

Research published in the *Annals of the New York Academy of Sciences* examined the vasodilating—blood vessel relaxing—properties of grape seed fractions. By allowing blood vessels to open rather than restrict, blood travels with less force, reducing pressure. Grape seed increased the level and activity of compounds (nitric oxide and cyclic GMP) that reduce blood vessel tension.²

Another clinical study, published in the *Journal of Medicinal Food*, compared the results of individuals with mildly high cholesterol taking a grape seed extract versus a placebo for 8 weeks. Lipid profiles and oxidized LDL (bad) cholesterol were improved in those taking grape seed extract. The researchers concluded that grape seed extract decreased the risk of abdominal blood clots and other cardiovascular disorders.³

What are OPCs?

OPCs are compounds found in grape seeds that have great protective value for our cells by stopping oxidative damage and reducing inflammation. But to be beneficial, OPCs need to be a certain size so that they can be absorbed by the body.

Size Matters. Small OPCs Only, Please!

Tannins are OPCs that are too big to be absorbed by the body, but many grape seed extracts are simply *all* tannins. Technically, tannins and OPCs are both proanthocyanidins. But tannins have no nutrient value, so when it comes to your health, size matters—think small. OPCs are water soluble and highly bioavailable, and that's what will make the difference for your health.

Grape Seed Extract is the Heart's Best Friend

Figure A

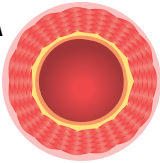


Figure B

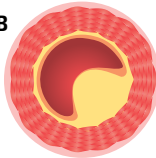
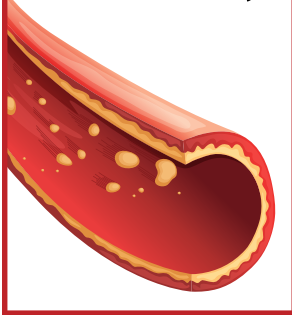


Figure A shows a normal artery with normal blood flow. The inset image shows a cross-section of a normal artery.

Unblocked Artery



Blocked Artery

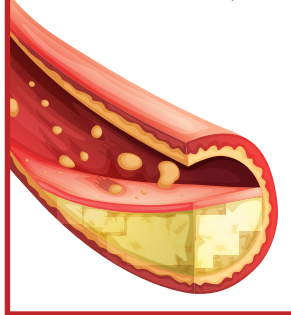


Figure B shows an artery with plaque buildup. The inset image shows a cross-section of an artery with plaque buildup.

<http://www.nhlbi.nih.gov/health/health-topics/topics/atherosclerosis>

Grape seed extract can help stop the oxidation of LDL-cholesterol that leads to clotting and inflammation in the arteries and blood vessels.

Other scientific studies have found similar results: grape seed extract helps prevent blood clots from forming without thinning the blood, lowers blood pressure, and shields blood vessels and arteries from free radical damage.^{4,5}

A Yale review of grape seed extract studies concluded from the existing research that this powerful botanical lowers systolic blood pressure and heart rate, so a broad spectrum of medical experts have taken notice of this clinically proven natural medicine. I think this definitely shows how well regarded grape seed extract has become.⁶

There may be no more powerful natural medicine
to protect against heart disease
than grape seed extract.

Stops Diabetes and Obesity

As the number of people dealing with type 2 diabetes grows, (at this point close to 30 million Americans⁷) researchers will continue to find natural answers that work with the body to normalize blood sugar levels and heal the damage to blood vessels and nerves. Since grape seed extract is well known for its anti-inflammatory, antioxidant, and cardiovascular protecting abilities, I think it's well-positioned to help stop the epidemic of diabetes.

While I believe that the single most important thing you can do to manage your weight and prevent diabetes is to follow a healthy eating plan, there is no denying that grape seed extract can be a key part in getting healthy and recovering from sugar addiction. For example, a pilot clinical study in Thailand found that grape seed extract reduced blood sugar levels after a high-carbohydrate meal. The OPCs in grape seed can help stop the sugar spikes that affect insulin levels and possibly lead to diabetes.⁸

Type 2 diabetes often corresponds with cardiovascular trouble, brought about by inflammation and unbalanced cholesterol levels. A British clinical study of individuals with type 2 diabetes reported that grape seed extract improved inflammatory markers, blood sugar, and glutathione (the body's natural protective antioxidant) levels over 4 weeks. The researchers concluded that the extract could potentially have a "therapeutic role in decreasing cardiovascular risk."⁹

A laboratory study in 2009 found that a uniquely standardized French grape seed extract reduced the buildup of abdominal fat—commonly called "belly" fat—and reduced blood sugar. This was due, in part, to an increase of adiponectin, a protein responsible for regulating blood sugar levels, insulin metabolism, cholesterol levels, and inhibiting NF-kB activation and other inflammatory markers. Compared to the control group, the adiponectin level of the grape seed group increased 61 percent! Other laboratory studies have found similar results—that the use of grape seed extract protects against fat accumulation and improves blood triglyceride and plasma lipid levels.¹⁰⁻¹³

Further laboratory studies show that grape seed extract can protect against damage caused by diabetes, including diabetic neuropathy and the risk of cardiovascular complications, like heart disease. Other laboratory work found that an exercise regimen combined with grape seed extract reduced triglycerides, improved total cholesterol levels, aided weight loss, and lowered systolic blood pressure.^{14,15}



Grape Seed Extract for Metabolic Syndrome

Metabolic Syndrome is a clustering of disease factors: high blood pressure, imbalanced cholesterol levels, high blood sugar, and unhealthy weight. All of these conditions are either caused by, or themselves cause, inflammation and oxidation. Because grape seed extract fights each of these disease states, it is in a unique position to prevent and fight this potentially deadly combination known as Metabolic Syndrome.¹⁶

At Risk for Metabolic Syndrome?

Check the list below—if two or more of the factors apply, you may be.



Extra Weight Around The Middle: A good diet is so essential. It's not just a matter of "calories in and calories out" it's what's in those calories that count. I recommend a ketogenic or "caveman" diet that doesn't cause inflammation and spikes in blood sugar. Make sure it is rich in wholesome animal proteins, fats, fruits, berries, vegetables, seeds and nuts.

As for weight and waistline, here are some numbers to keep in mind:

- **For men, a waist measurement of 39 inches (101 cm) or less**
- **For women, a waist measurement of 34 inches (87 cm) or less**



High Blood Pressure: High blood pressure (hypertension) is called "The Silent Killer" because it typically doesn't show any symptoms, and the people who have it are often not even aware of it. Healthy blood pressure for a resting adult is 120/80. It can change with exercise or stress, but 120/80 is considered average. A range of 140/90 is high blood pressure, and the range of

121-139/80-90 is what is known as pre-hypertension. Basically, that is blood pressure that is above what is typically considered normal, but not elevated enough to classify as high blood pressure. However, it can still lead to damaged arteries and should never be ignored.



Type 2 Diabetes/Insulin Resistance/High

Blood Sugar: The statistics of high blood sugar are alarming. According to the Centers for Disease Control (CDC), about 30 million Americans have diabetes, but 8 million of them remain undiagnosed. That means many people may not even realize they have the disease even while it damages their blood vessels, nerves, and puts their health at serious risk.

If you have elevated fasting glucose—a high amount of sugar in your bloodstream even when you haven't been eating—you could be on track to getting Type 2 diabetes and by extension, Metabolic Syndrome. A high blood sugar reading is a fasting blood glucose that is in the 100-125 mg/dL range. That's pre-diabetes. Higher than that, and you have diabetes.

Poor Cholesterol Balance: My opinion about cholesterol differs quite a bit from the



established practice, but let's think of it this way: boosting HDL levels is a good idea, and you can't do that with the Standard American Diet. Focus on this aspect of cholesterol—boost the HDL ratio. A balanced cholesterol profile, i.e. low in LDL, high in HDL and HDL to LDL ratio, is considered an important constituent of the scientific evidence of healthy cholesterol metabolism, helping individuals remain healthy and reducing the risk of cardiovascular disease.

High Triglyceride Levels: Although triglyceride levels tend to get lumped in with cholesterol levels, they really are different. Triglycerides are stored as fats from carbohydrates, not from animal proteins. Carbohydrate intake is what contributes to high triglyceride levels.

Speeds Recovery from Exercise and Injury

The anti-inflammatory power of grape seed extract has brought it to the attention of researchers studying its effects on muscle recovery. In these investigations, grape seed OPCs have boosted anti-inflammatory cytokines (IL-10), and helped regenerate damaged muscle fibers. Macrophages, known for their ability to stop bacteria and viruses, also help heal injured tissue. One study found that elevated levels of macrophages and neutrophils (white blood cells found at the scenes of inflammation) were completely resolved in just 5 days when using grape seed extract.¹⁷⁻¹⁹

Grape Seed Extract: A Great Multitasker

Grape seed extract addresses a multitude of health concerns. It is one of nature's "do everything" ingredients.

heart

cardiovascular disease

oxidative stress

high blood pressure

diabetes

exercise recovery



cancer

focus & cognition

inflammation

Alzheimer's disease

obesity & weight gain

Prevents Cancer and Tumor Growth

Cancer is a leading cause of mortality around the world, and the diet is seriously implicated. A decline in the consumption of fruits, vegetables, berries, nuts, and seeds almost always corresponds with a rise in cancer rates in any given population. (There are few exceptions to this—populations that historically have adapted to diets of mostly fats and meats, but most of us need polyphenols, fiber, and other compounds from the vegetable kingdom.)

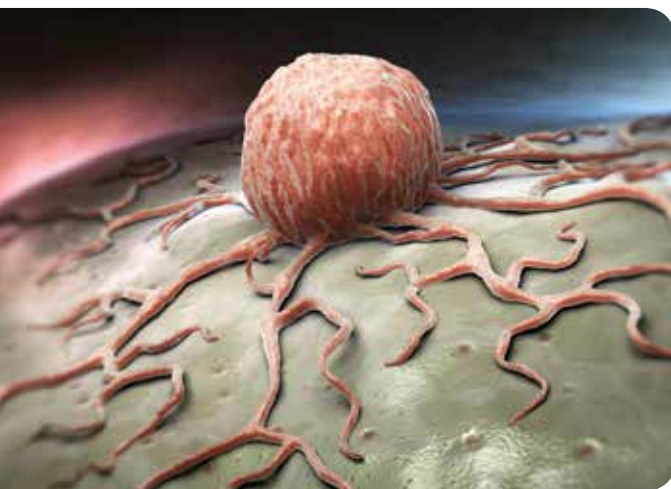
One of the reasons that grape seed extracts are potentially so valuable in the fight against the development of cancer is that they concentrate the beneficial compounds found in plant-based foods that stop DNA damage. An Italian review found that grape seeds have higher phenolic acid and flavonoid content (up to 70 percent of some extracts) than whole fruit extracts or grape skin.²⁰

While there are other strong ingredients that fight cancer like epigallocatechin from green tea, grape seed extracts have shown extraordinary abilities to fight human and animal cancer cells and prevent tumor proliferation.^{21,22}

Because of this demonstrated anticancer activity, grape seed OPCs are on the front line of cancer research. Some of the most exciting studies have been done at the University of Colorado Anschutz Medical Campus. Their research of grape seed extracts has shown that this powerful botanical ingredient has the ability to target specific colon cancer cells, and stop them from growing and replicating.²³

Another study examined the effect of grape seed extract on breast cancer cells when used alone or with a conventional treatment. Their results showed that the two interventions worked well together, but that grape seed extract alone was a strong inhibitor of breast cancer cells.²⁴

These results have been mirrored in other research showing that grape seed extract polyphenols have a strong ability to stop tumor growth.



One of the reasons for this is that grape seed extract inhibits aromatase, an enzyme that converts androgen into estrogen. Breast and prostate cancer tissues typically have higher levels of aromatase. A study published in the journal *Cancer Research* discussed the valuable potential of grape seed extract, when their

research showed that it inhibited aromatase activity and reduced growth in MCF-7 breast cancer cells. They concluded, “*We believe that these results are exciting in that they show grape seed extract to be potentially useful in the prevention/treatment of hormone-dependent breast cancer through the inhibition of aromatase activity as well as its expression.*” I think this is very exciting news for women who are concerned about their family histories regarding breast cancer. With all of the evidence we’re seeing, I consider grape seed extract to be a big improvement over synthetic aromatase inhibitors such as the drug tamoxifen, which may cause side effects.²⁵

According to the American Cancer Society, prostate cancer is second only to skin cancer as a common cancer in men. Like other cancers, prostate cancer progresses

through multiple stages. The goal for research is finding the right combination of ingredients—in this case grape seed extract—and timing. If cells can be protected preventively, then there's less chance of a problem in the first place. But, once tumor cells have started to form, the challenge is twofold: how to stop them from growing further, and ideally, reducing them altogether.²⁶

Research at the University of Colorado examined the effect of grape seed extract on prostate cancer cells and found that proanthocyanidin fractions from grape seed extract had the greatest effect of inhibiting—and killing off—tumor cells.²⁷

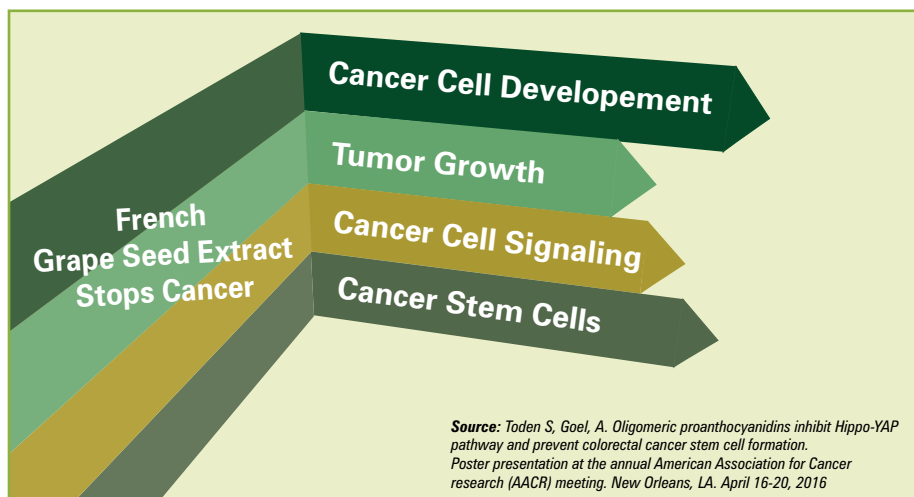
French Grape Seed Extract Suppresses Cancer

Colorectal cancer has the second highest mortality rate in the United States. While lifestyle and diet can prevent or modify the risk, there is an urgent need for effective therapies that don't create havoc with the quality of life, and fully extinguishes the threat.

Cancer develops through many mechanisms, and that's why it is so difficult to treat. However, a breakthrough study found that a tannin-free grape seed extract (French Grape Seed VX1™) was found to suppress colorectal cancer cells in a variety of ways.

It inhibits the growth of tumors, stops the cycle of cancer cell signaling, and induces apoptosis—the death of cancer cells by stopping them in the growth phase. But perhaps even more importantly, it also kills cancer stem cells.

This is an amazing breakthrough because even though conventional chemotherapy can kill cancer cells, it doesn't finish off cancer stem cells—the very reason cancer can recur and spread throughout the body. The OPCs from this grape seed extract eliminated the cells and the way that they survive, a pathway known as HIPPO-YAP.



Source: Toden S, Goel, A. Oligomeric proanthocyanidins inhibit Hippo-YAP pathway and prevent colorectal cancer stem cell formation. Poster presentation at the annual American Association for Cancer research (AACR) meeting. New Orleans, LA. April 16-20, 2016

Aside from helping inhibit tumor cells, grape seed has other applications for cancer treatment.²⁸⁻³¹ An Australian scientific study found that grape seed extract reduced the severity of mucositis, a painful inflammation of the mucous membranes of the digestive tract, including the mouth and small intestines due to chemotherapy. The researchers also found that grape seed extract killed colon cancer cells outright, other grape seed studies have shown that it stops bladder cancer by increasing oxidative stresses *only* to the cancer cells, halting their growth, while leaving healthy cells alone.²⁸

An additional way grape seed extract stops cancer is by preventing cancer cells from connecting to blood vessels, and depriving them of oxygen and nutrients. The process of blood vessel creation—*angiogenesis*—involves quite a few steps. And in each of these, grape seed extract can intervene to stop it from occurring. One of the natural proteins most associated with the development of blood vessel growth is Vascular Endothelial Growth Factor (VEGF). The fact that this protein can help tumors grow has been known for some time—the drug Avastin is an inhibitor of VEGF. However, the drug's actions come with side effects, including high blood pressure, headache, dry skin, and rectal bleeding, to name a few.

But research at the Beckman Research Institute in California showed that grape seed extract could inhibit the ability of tumors to stimulate VEGF activity and blood vessel creation. The *in vivo* research, (as opposed to the cellular studies) showed that higher dosages were needed to slow down the activity, but the extract was extremely well tolerated.

Aside from inhibiting the development of new blood vessels, it appears that grape seed extract also decreased the number of existing blood vessels in the tumors. The researchers concluded that the procyanidins—water-soluble fractions from grape seed extract—appeared to be responsible for its anti-angiogenesis effect.^{32,33}

If you spend a lot of time outdoors and skin cancer is a concern, grape seed extract may offer protection: a Romanian study reported that keratinocytes (the major type of cells in the outer layer of the skin) treated with grape seed extract 30 minutes before exposure to UVB radiation were protected from damage. Additional skin cell research shows that grape seed proanthocyanidins reduce oxidative stress markers, reducing the risk of exposure.^{34,35}

Overall, I believe the antioxidant power of grape seed is excellent for preventing cancer and it is a natural partner for my other favorite natural cancer treatment—curcumin.

Slows Alzheimer's Progression and Promotes Focus

Because of their antioxidant and anti-inflammatory activity, grape seed OPCs are increasingly on the cutting edge of Alzheimer's research. Studies have shown that they protect the delicate circuitry of the brain. For example, an Indian study found that grape seed proanthocyanidins reduce the effects of oxidative stress in the aging brain and consider it a neuroprotectant to prevent cognitive loss. The nutrient's ability was due, in part, to its blood glucose lowering as much as its free-radical fighting power. Considering the growing body of research that points to a connection between blood sugar levels and risk of Alzheimer's, this is an important discovery. Other work has examined more direct effects of grape seed extract on Alzheimer's disease (AD).³⁷

The cause of AD is not entirely known. However, certain characteristic changes in the brain are associated with this condition—accumulated clusters of a protein called beta-amyloid, (sometimes called “amyloid beta”) 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 the death of the cells themselves. As with most diseases, inflammation is also believed to be involved, causing the accumulation of plaques and tangles to have even more damaging effects.

Studies conducted by the Mount Sinai School of Medicine showed that grape seed extract inhibited the formation of plaques and tangles, and aside from preventing the buildup or clustering of beta-amyloid, grape seed extract supported greater brain plasticity—the ability of the brain to adapt and create new neural pathways.^{38,39}

While further studies are needed, I think it's very likely that we'll see more applications of French grape seed extract to bolster cognition and delay Alzheimer's symptoms in the future.^{40,41}



Other OPC research—using OPCs from pine bark—has investigated the application of this natural ingredient to attention deficit/hyperactivity disorder (ADHD) in children. A placebo-controlled, double blind study published in the journal *European Child & Adolescent Psychology* found that after just one month, OPCs boosted attention span, caused a significant reduction of hyperactivity, and improved motor coordination. The researchers noted that the symptoms returned one month after stopping the treatment, so OPCs would need to be part of an ongoing regimen. Although the OPCs in this study are from a different source, their abilities in the body, whether from grape seed or pine bark, would likely be very similar.⁴²

Stops Inflammation and Oxidative Damage

Grape seed extract OPCs fight inflammation and the effects of free-radicals throughout the body. While we often associate antioxidant power with anti-aging, it also balances immune response to reduce everything from damaging chronic joint inflammation in rheumatoid arthritis (RA) to allergic responses. A Saudi Arabian study found that grape seed OPCs were able to regulate the activity of certain immune-regulating T-cells, inducing some and reducing others, in a way that stopped inflammatory markers. The researchers concluded that grape seed extract proanthocyanidins could become an adjunct therapy for RA, or possibly an alternative treatment in its own right.⁴³

Because autoimmune inflammation interferes with the process of bone formation and resorption, individuals with RA often contend with structural joint damage. However, researchers in Korea discovered that the ability of grape seed OPCs to reduce inflammation also stopped the symptoms of collagen-induced arthritis in a laboratory study. It actually helped get the natural process of building bone back on track.⁴⁴

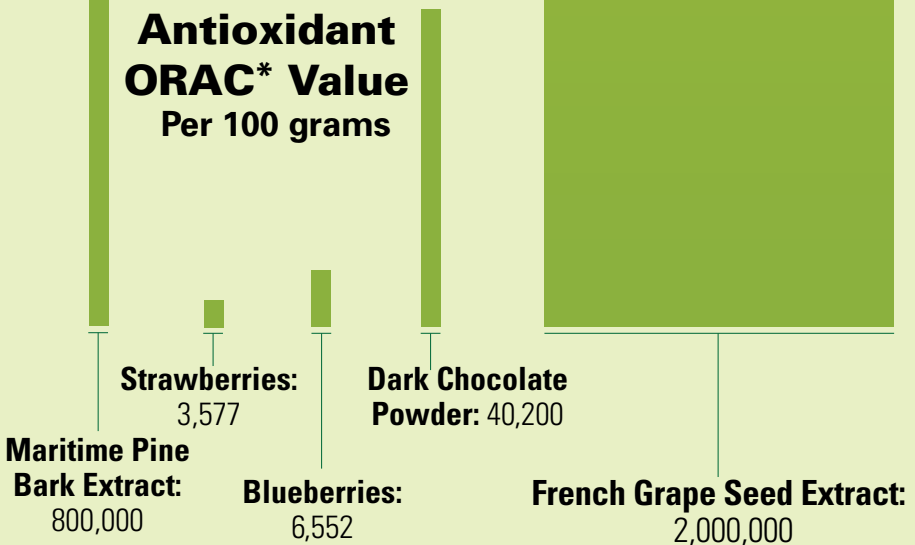


Figure 1 *Oxygen Radical Absorbance Capacity

Aside from combating RA symptoms and bone damage, grape seed extract prevents the inflammation that causes allergy-induced asthma symptoms. A Korean study found that grape seed extract reduced the allergic hyper-responsiveness that restricts bronchial airways, and the inflammatory markers in lung tissue. The researchers felt that grape seed extract could be a valuable therapeutic ingredient for acute and chronic asthma. Considering that French grape seed extract is free of side effects and risks, this could be excellent news for those who are looking for alternatives to asthma treatment. I wouldn't encourage anyone to simply throw away their inhaler, but I certainly would suggest adding a tannin-free, French grape seed extract to your regimen.

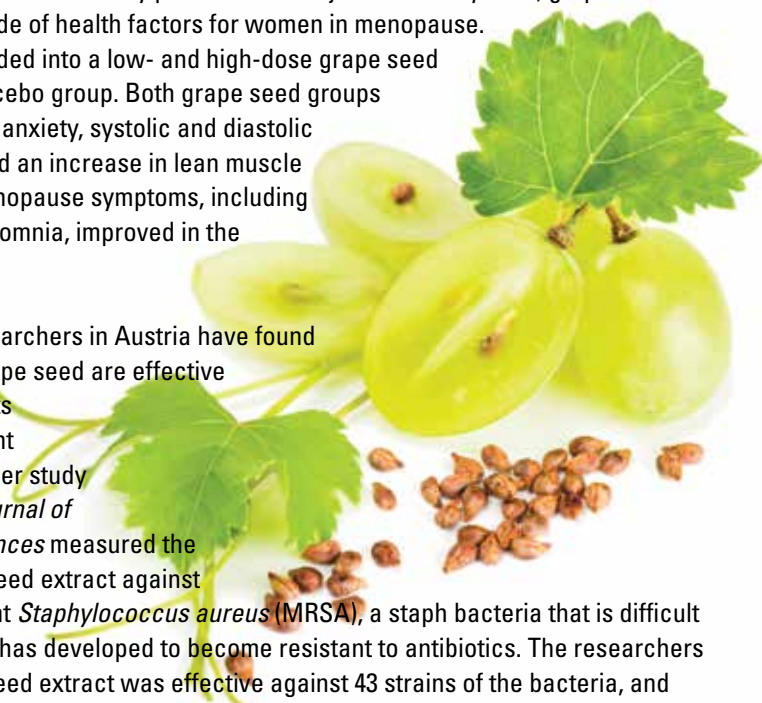
I believe that the best grape seed OPC extract is one that can show high Oxygen Radical Absorbance Capacity (ORAC) value. ORAC values are typically presented as a way of determining how much free-radical fighting power a given fruit or vegetable has. While there's no way of duplicating the complex structure and synergy of a food, there are improved ways of taking some of the best components of fruits and vegetables and concentrating them to the point where you see extremely high ORAC values. The extract I recommend has an ORAC value of over 21,000 per gram!

Other Powerful Benefits of Grape Seed Extract

Of course, with all of these attributes, I think I've just touched the surface of all of the amazing benefits of French grape seed. For instance, in a double-blind, placebo-controlled clinical study published in the journal *Menopause*, grape seed improved a multitude of health factors for women in menopause.

The study was divided into a low- and high-dose grape seed group and one placebo group. Both grape seed groups saw a reduction in anxiety, systolic and diastolic blood pressure, and an increase in lean muscle mass. Specific menopause symptoms, including hot flashes and insomnia, improved in the high-dose group.⁴⁶

In other work, researchers in Austria have found that OPCs from grape seed are effective antibacterial agents against ten different pathogens.⁴⁷ Another study reported in the *Journal of Toxicological Sciences* measured the abilities of grape seed extract against methicillin-resistant *Staphylococcus aureus* (MRSA), a staph bacteria that is difficult to treat because it has developed to become resistant to antibiotics. The researchers found that grape seed extract was effective against 43 strains of the bacteria, and



could, in the words of those conducting the study, “signify a major advancement in the treatment of MRSA diseases.”⁴⁸

Grape seed extract also shows promise for people suffering from non-alcoholic fatty liver disease (NAFLD), a form of hepatic steatosis where the fats are deposited in the liver. The causes can vary—some people are just genetically prone to the disease, while other research points to dietary reasons, including the overconsumption of soft drinks. In fact, 70 percent of the cases of NAFLD associated with metabolic syndrome.⁴⁹

Whatever the reason, it’s important that these fats move out of the liver and are used by the cells for energy, otherwise the damage can be very serious. Once fat deposits begin to limit the liver’s ability to detoxify and process nutrients, health starts an inevitable decline. After all, if the liver is not able to process and remove toxins, the body is vulnerable to damage from a wide range of dangerous substances. The condition can lead to further weakening of the liver, creating a spiraling health condition that can be tough to overcome.

Clinical research in Iran compared the liver restorative power of grape seed extract to vitamin C, which served as a control group medication. While everyone is familiar with vitamin C—and I think it’s a valuable nutrient—fighting NAFLD requires a stronger intervention. One of the ways of measuring liver damage is by taking note of the levels of an enzyme called alanine aminotransferase. When the liver is functioning properly, levels are low. When it is diseased, they can rise dramatically. In this clinical study, Individuals in the grape seed extract group saw significant changes in just three months. This botanical reduced the accumulation of fat deposits in the liver, stopped oxidative damage, and the results showed, including lower measured levels of alanine aminotransferase levels in their blood.⁵⁰

The antioxidant power of grape seed extract may one day help those undergoing radiation treatment. Because the liver reacts so poorly to radiation treatment (whether or not the liver or another part of the body is a target of the therapy), it suffers damage that becomes a serious secondary concern. Turkish scientific research showed that grape seed extract protected liver cellular membranes from oxidative damage, protein and lipid oxidation, and restored antioxidant parameters.⁵¹

OPCs are also critical for healthy eyesight. They can improve eye strain or night vision by up to 98 percent and help heal eye damage due to diabetic retinopathy.

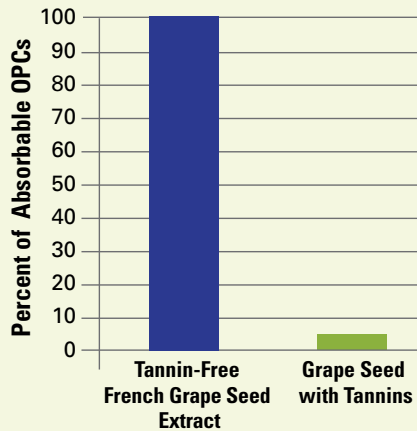
Tannin-Free French Grape Seed Extract = Lifesaving Power!

Not All Grape Seed Extracts Work.

The potential of grape seed extract is astounding. But, like any nutrient, it needs to be effectively absorbed in order to work. And this is where lesser extracts fall down on the job. Many extracts contain tannins, which are OPCs that are too large to be effectively absorbed. Tannins are great in wine—they add body and depth of flavor. But they are of no use to the body, so they are not good in your grape seed extract. Of course, there are a lot of other grape seed extracts available, so choosing one can be tricky. That's because any extract originally from grape seeds is, technically, an OPC. But beware of high-tannin extracts. They'll only give you a false sense of security that they're doing great things, and the money you think you're saving (some extracts appear to be very cheaply priced) is really just money down the drain. The French pioneered grape seed research, and I believe the best extracts are from the same regions of France that produce some of the worlds' finest wines.

Also, I believe that Masquelier's research on OPCs really proved that absorption was key. Some of the clinical work done in the early 1980s found that even small dosages of OPCs were effective because they were so well absorbed. In one study, just 150 mg per day was enough to stop the cramping, swelling, and "heavy" feeling of varicose veins. In others, dosages up to 300 mg stopped symptoms of chronic venous insufficiency in the legs.^{53,54}

Tannin-Free OPCs are Absorbed Best



Tannins are large molecules that aren't easily absorbed by the body and don't provide much benefit. The smaller the OPC, the better chance it will be absorbed.

What About Maritime Pine Bark Extract?

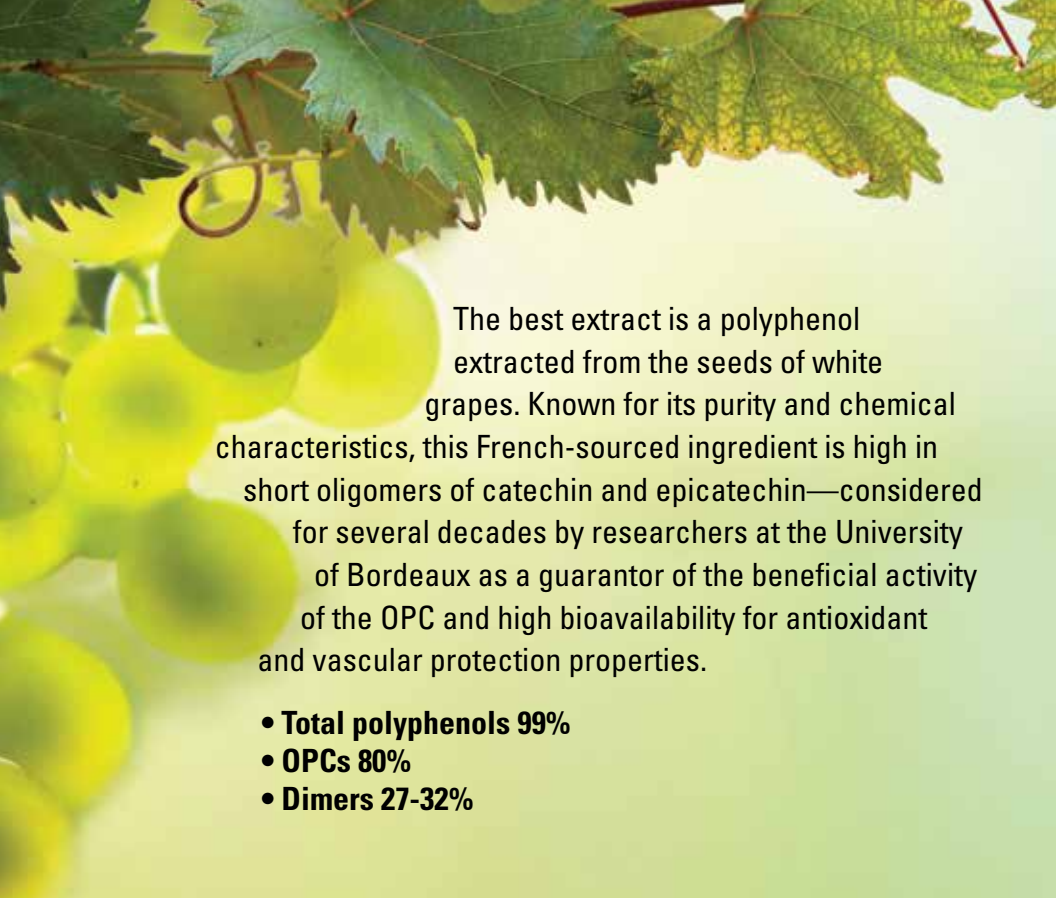
Some of Jacques Masquelier's early research investigated the OPCs found in maritime pine bark extract, and many people still find it to be a valuable ingredient for their health. Certainly, OPCs from pine bark and OPCs from grape seed are beneficial. But I think that French grape seed extract can provide a better, more useful source.

That's because French grape seed extract can provide at least 95 percent absorbable OPCs, where maritime pine bark is typically 80 percent. Also, pine bark extract is more expensive to produce, even though it doesn't provide the same percentage of absorbable compounds. So, while I completely advocate adding high-quality French grape seed to your regimen (as opposed to cheaper, high-tannin varieties) there's no reason to add a higher-cost, less effective ingredient, either. Pine bark is useful and it is a good ingredient. But with its clear advantages, I think that a specialized extract of grape seed extract is a better, potentially life-saving option.



I think we're going to see even more amazing results in the future, especially as tannin-free extracts are chosen specifically for scientific research and clinical trials. Much like curcumin, this ingredient simply does it all. But, unlike curcumin, it is a water-soluble extract that works along different pathways in the body. I urge you to add a French grape seed extract to your regimen starting today.

That's why I recommend a French grape seed extract that is tannin-free and standardized to contain only OPCs that matter—the smallest size for biggest benefits.



The best extract is a polyphenol extracted from the seeds of white grapes. Known for its purity and chemical characteristics, this French-sourced ingredient is high in short oligomers of catechin and epicatechin—considered for several decades by researchers at the University of Bordeaux as a guarantor of the beneficial activity of the OPC and high bioavailability for antioxidant and vascular protection properties.

- **Total polyphenols 99%**
- **OPCs 80%**
- **Dimers 27-32%**

Grape Seed Extract Dosage Levels:

High Blood Pressure: 300 mg daily

Leg Veins/Chronic Venous Insufficiency (CVI): 150 – 300 mg

Cancer: 600 – 1200 mg daily

Cancer Prevention: 150 – 400 mg daily

How To Shop and What To Look For

Choosing the Right Grape Seed Extract

Grape seed extract is a botanical wonder. This amazing ingredient prevents heart disease, kills cancer cells, speeds the healing of damaged muscle tissue, reduces non-alcoholic fatty liver disease, reduces inflammation, improves brain focus and can even stop diabetes and prevent weight gain.

Of course, there are a lot of grape seed extracts available, so finding the right one can be tricky. That's why I recommend a tannin-free French grape seed extract, standardized to contain only OPCs that have a small molecular structure for guaranteed absorption.



Why Tannin Free?

All OPCs of grape seed extract are of various molecular weights and sizes. The smaller components of grape seed extract are known as monomers, dimers and trimers. The very large non-absorbable molecules of grape seed extract are known as condensed tannins. But tannins have no biological value and are not absorbed systemically. To lower the price of grape seed extract, many manufacturers are concentrating and spiking with *additional* condensed tannins. So they can still be called OPCs, but they don't provide any real benefits. This significantly lowers the cost of manufacturing grape seed extract. To ensure the product that you purchase is of significant value, make sure it's tannin free and uniquely standardized for high absorption OPCs.

A Tannin-Free Grape Seed Extract Can:

- Lower blood pressure
- Stop deep vein thrombosis
- Prevent diabetes and obesity
- Speed muscle recovery
- Inhibit cancer cell formation and spread
- Protect the brain
- Stop inflammation
- Prevent oxidative damage

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