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. We’ll take a look at its amazing abilities in this Terry Talks Nutrition®.

Protects Your Cardiovascular System
Most people probably know grape seed extract because of its benefits for the heart. There’s good reason for this. Grape seed extract reduces high blood pressure, protects the blood vessel walls from damaging free radical activity, 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—300 mg daily—noticed more dramatic effects. In fact, blood pressure numbers normalized in 93 percent of those in the higher dosage group.

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.

This study showed that grape seed procyanthocyanidins promoted nitric oxide (NO) release and an increase in cyclic GMP levels. Nitric oxide is a molecule that is only active for a few seconds at a time in the bloodstream. Even though it is considered a free radical, it actually has beneficial effects for blood pressure, helping signal the

Grape Seed Extract is the Heart’s Best Friend

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

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

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

Figure A Figure B

Unblocked Artery Blocked Artery

http://www.nhlbi.nih.gov/health/health-topics/topics/atherosclerosis
French OPC Grape Seed for Diabetes, Heart, Cancer and More

opening of blood vessels and arteries. Cyclic GMP (cGMP) also relaxes smooth muscles, including blood vessels.

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 blood clotting (without adverse effects on blood thinning) and other cardiovascular disorders.

Other scientific studies have found similar results: grape seed extract helps prevent blood clots from forming, lowers blood pressure, and shields blood vessels and arteries from free radical damage. There may be no more powerful natural medicine to protect against heart disease than French OPC grape seed extract.

Stops Diabetes and Obesity
While I believe that the single most important thing you can do to manage your weight and prevent diabetes is 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 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.

Another study in 2009 found that a grape seed extract reduced both buildup of abdominal fat and blood sugar levels. This was due, in part, to an increase of adiponectin, a protein responsible for regulating blood sugar, insulin metabolism, and cholesterol, 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 scientific studies have found similar results—grape seed extract activates cyclic AMP, protects against fat accumulation, and improves blood triglyceride and plasma lipid 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.

Prevents Cancer and Tumor Growth
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 come with a host of serious adverse effects.

Cancer develops through many mechanisms, and that’s why it is so difficult to treat. However, a breakthrough study found that a tannin-free
French OPC Grape Seed for Diabetes, Heart, Cancer and More

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 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 cancer cells.

Other research has examined the effect of grape seed extract on breast cancer cells when used alone or with a conventional treatment. The results showed that the two interventions worked well together, but that grape seed extract alone was a strong inhibitor of breast cancer cells. 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. Certain types of cancer grow and spread in the presence of 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.”

Aside from helping inhibit tumor cells, grape seed has other applications for cancer treatment. 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 prostate cancer cells through direct stimulation of tumor suppressing cells, and bladder cancer by increasing oxidative stresses only to cancer cells, halting their growth, while leaving healthy cells alone.

### Antioxidant ORAC* Value

**Per 100 grams**

Oxygen Radical Absorbance Capacity (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. I believe that the best grape seed OPC supplement is one that can show high ORAC value. French OPC grape seed extract has an ORAC value of 20,000 per gram—compare this to the blueberry, which has an ORAC value of only 600 per gram!

<table>
<thead>
<tr>
<th>Fruit</th>
<th>ORAC Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blueberries:</td>
<td>6,552</td>
</tr>
<tr>
<td>Dark Chocolate Powder:</td>
<td>40,200</td>
</tr>
<tr>
<td>Maritime Pine Bark Extract:</td>
<td>800,000</td>
</tr>
<tr>
<td>French Grape Seed Extract:</td>
<td>&gt;2,000,000</td>
</tr>
</tbody>
</table>

*Figure 1.* Oxygen Radical Absorbance Capacity.
connecting to blood vessels, and depriving them of oxygen and nutrients.

If you spend a lot of time outdoors and skin cancer is a concern, grape seed extract may offer protection here as well: 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 UVB radiation protected them from damage.

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

**Slows Alzheimer’s Progression and Promotes Cognitive Health and 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).

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.

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

Other OPC research 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 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 body. While we often associate antioxidant power with anti-aging, it also controls the immune system 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.

Because autoimmune inflammation also 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.

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 as well as the amount of inflammatory markers in lung tissue. The researchers felt that grape seed extract could be a valuable therapeutic ingredient for acute and chronic asthma. Considering French OPC 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 French OPC grape seed extract to your regimen.

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 OPC grape seed extract. 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, blood pressure levels, and an increase in lean muscle mass. Specific menopause symptoms, including hot flashes and insomnia, improved in the high-dose group.

In other work, researchers in Austria have found that OPCs from grape seed are effective antibacterial agents against ten different pathogens. A 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 resistance 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.”

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.

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. Grape seed extract reduced the accumulation of fat deposits in the liver, stopped oxidative damage, and lowered levels of alanine aminotransferase levels in the blood.

The antioxidant power of grape seed extract may one day help those undergoing radiation treatment. Because the liver reacts so poorly to radiation treatment, (regardless of whether 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, and from protein and lipid oxidation. Their work showed that grape seed actually restored levels of antioxidant parameters after radiation treatment. While this is cutting-edge work, and more studies need to be done, it's exciting to think that grape seed extract could have this kind of powerful result.

Not All Grape Seed Extracts Work!

While there have been astounding results from grape seed studies, you must be careful in selecting a product.

There are many grape seed extracts available. OPCs must be small enough to be absorbed and effective. Many extracts contain tannins, which are too large to be effectively absorbed and don’t contribute to your health the same way that OPCs do. However, these tannins are counted as OPCs and enhance the label claim, even though they cannot be absorbed! Tannin-free is best.

That's why I recommend a French OPC grape seed extract that is standardized to contain only OPCs that are small enough to be absorbed, so you'll get the maximum benefits. I urge you to add a French OPC grape seed extract to your regimen.

Tannin-Free OPCs are Absorbed Best

<table>
<thead>
<tr>
<th>Tannin-Free French OPC Grape Seed Extract</th>
<th>Grape Seed with Tannins</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of Absorbable OPCs</td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>90</td>
<td></td>
</tr>
<tr>
<td>80</td>
<td></td>
</tr>
<tr>
<td>70</td>
<td></td>
</tr>
<tr>
<td>60</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

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.