

# RESVERATROL

Experts estimate 100 million Americans are now age 50 or older. What's more, demographics show that even after retirement, people still have another 20% to 25% of their lives ahead of them. Do you want to spend nearly a quarter of your life feeling less than the best? Or can we reserve your place on the dance floor or hiking trail? Good enough! Then read on...

#### Dear Vitality-Seeking, Health-Conscious Friend,

Resveratrol is a phenomenal age-defying discovery. As *60 Minutes* reported in January 1991, scientists across the country have identified a substance in red wine called resveratrol that they believe might do more than just protect the heart, but could in very high concentrations significantly extend life by preventing a number of age related illnesses. Many health experts hail resveratrol as the miracle molecule behind the "French Paradox"... and for good reason.

The French drink more wine than most any people, eat loads of rich foods and smoke like chimneys—yet live 30% longer and have significantly better heart health than Americans. Reports suggest red wine seems to have twice the average resveratrol concentration of the equivalent commercial juices. In general, wines made from grapes of the Pinot Noir and St. Laurent varieties showed the highest level of *trans*-resveratrol.

#### Testosterone

A Korean study showed that *trans*-resveratrol supplementation increased testosterone levels in mice which have led to its marketing as a bodybuilding supplement. A Spanish study has also shown the antioxidant to increase sperm production in rats.

**Health Overview** 

By now, many people have heard that oxidized low-density lipoprotein (LDL) is a problem in heart disease. This is why vitamin E helps prevent heart problems—it scavenges the radicals that *oxidize* this fat/protein. However, the kind of radicals that vitamin E blocks are not the only kind of free radicals people have to worry about. There are other types, which is why it's important to take all of the known **antioxidant vitamins**. In a study published in *Free Radical Research*, resveratrol was put to the test against vitamin E and a synthetic antioxidant. All three were very good at scavenging artery-damaging radicals, but resveratrol emerged as the best defense against certain types of radicals. This points out the importance of using a multi-approach to antioxidants. One of the serious complications of free radical damage is hardening and thickening of arteries. A "vicious cycle" of radicals, artery damage, and narrowing due to scar tissue that, in turn, promotes more free radical activity and more damage, has been described. Resveratrol, melatonin and Probucol are suggested as treatments for this progressive process. Resveratrol's antioxidant action helps stop free radical damage and opens the arteries by enhancing nitric oxide.

Nitric oxide is a critical component of heart/artery function. It allows blood vessels to "relax," which enhances blood flow. In a recent study, a high-cholesterol diet decreased nitric oxide by about a third. **Resveratrol supplements** significantly reversed the trend. In this respect, resveratrol is similar to Viagra, which also affects nitric oxide. However, whereas Viagra only affects small vessels, resveratrol affects the main arteries.

Finally, resveratrol also stops the proliferation of cells in blood vessels that narrow the arteries, and it also keeps blood cells from sticking together. Both are very important for preventing heart attacks. The ability of resveratrol to keep blood cells from sticking together was investigated by Canadian researchers who wanted to know what role, if any other components of wine might play in the process. They found that ethanol itself inhibited one type of stickiness-promoter (thrombin), and Quercetin (another polyphenol) inhibited a different one (12-HETE), but nothing else they tested was active against this aspect of heart disease except resveratrol, which inhibited not only thrombin, but a host of other stickiness-promoting factors.

## Alzheimer's and Resveratrol

It was shown recently that resveratrol possesses a "novel mechanism" for scavenging radicals. Might this novel mechanism protect the brain from free radical-driven diseases like Alzheimer's?

Although the research is very preliminary, studies indicate that resveratrol supplements may be particularly important for those at risk for Alzheimer's, or those who have it. It is theorized that free radicals might initiate the process that leads to the disease. The brain is composed mostly of fatty acids, and just as the heart needs to be protected against oxidized fat, so does the brain.\*

Alzheimer's patients produce an abnormal peptide (a piece of a protein) known as "beta-amyloid" in their brains. Beta-amyloid provokes oxidative stress, and eventually cells are killed because of the abnormally high levels of free radicals. The killing of brain cells causes the gradual decline in Alzheimer's patients. It has been proven that resveratrol can protect the brain against oxidative stress, and keep cells alive. Research shows that adding antioxidant vitamins C and/or E to resveratrol provides a greater degree of brain protection than any of these antioxidants alone.

## Spinal Cord Injury, Stroke and Resveratrol

A recent study by Chinese researchers is notable. If confirmed by other researchers, it could be very important for people who undergo serious brain/spinal trauma or stroke. In these types of injuries, the body's response causes further injury, and for that reason, people are treated with drugs like cortisone, and in the case of stroke—aspirin. The idea is to reduce the body's inflammatory response to the injury.

The study from China showed that resveratrol reversed the signs of inflammatory response to spinal cord injury on a level comparable to prednisone (a steroid used to reduce inflammation), but with better energy compensation and protection against free radicals, when injected immediately after injury. Besides helping to ameliorate this type of injury through free radical blockade, resveratrol actually inhibits specific enzymes that change the way individual cells respond to the injury. It's possible that if a person regularly takes **resveratrol supplements**, they will be more likely to withstand a stroke or other injury to the brain. This has been demonstrated in rodents pretreated 21 days with resveratrol. Less motor damage and less brain damage occurred post-stroke.

### **Cancer and Resveratrol**

Cancer is, perhaps, the most dynamic area of resveratrol research. Resveratrol is the first natural medicinal to have solid evidence behind it showing that it blocks or may stop many stages of cancer. Resveratrol not only may prevent cancer, it's being proposed as an additional treatment.

The number of studies has exploded in the past three years, with the depth of knowledge about this polyphenol increasing with each report. Resveratrol is a broad-spectrum agent that may stop cancer in many diverse ways, from blocking estrogen and androgens to modulating genes.

Some of the latest information about it shows that resveratrol causes a unique type of cell death, and kills cancer cells whether they do or do not have the tumor suppressor gene. It also works whether cancer cells are estrogen receptor-positive or negative.

In addition to these findings, researchers are beginning to uncover the ability of resveratrol supplements to augment other chemotherapies. For example, vitamin D3 converts to a steroid that inhibits the growth of breast cancer cells. Researchers at the University of Notre Dame have shown that resveratrol increases the effects of vitamin D3. Other research shows that it causes drug-resistant non-Hodgkin's lymphoma cancer cells to become susceptible to chemotherapeutic drugs (Gemcetabine, Navelbine, cisplatinum, Paclitaxel, and TRIAL).

Researchers in Austria have done elaborate studies showing that resveratrol blocks the ability of cancer cells to metastasize to bone (30-71%). The highest results were for pancreas, breast, and renal cancer. Prostate and colon cancers were also inhibited, but not as much.

Resveratrol also acts against a component of the Western diet that promotes cancer cell growth: linoleic acid. Linoleic acid is converted to arachidonic, which is converted to hormone-like substances (such as prostaglandin E2 and leukotriene B4) that can promote inflammatory processes that stimulate cancer cell growth, among other things. It has been demonstrated that the Western diet can cause colon cancer in rodents without any other chemical or factor being necessary. In a study from Japan, resveratrol in an amount easily obtained by supplementation, inhibited the growth of breast cancer cells, and blocked the growth-promoting effects of linoleic acid from the Western diet.

Resveratrol works against a wide range of cancers, both at the preventive and treatment stages. Its ability to stop cancer is connected to its capability, first, to distinguish a cancer cell from a normal cell. Unlike chemotherapeutic drugs that affect normal as well as cancer cells, resveratrol does not

damage healthy cells. Not only is it not harmful to normal cells, it protects them. Second, resveratrol is sophisticated in its actions. It doesn't just scavenge free radicals, it activates and deactivates critical enzymes and genes, hormones and chemicals



#### **Other Ingredients in our Resveratrol:**

What is Cellulose? It is a fibrous carbohydrate, but it's a carb VERY different form starch. Cellulose is a straight chain polymer: unlike starch, no coiling occurs, and the molecule adopts an extended rod-like conformation that's why you'll find that plant cell walls are made of cellulose. This strength is important in cell walls, where they are meshed into a carbohydrate matrix, helping keep plant cells rigid.

So although it is technically a carbohydrate, it's so fibrous in nature that the bonds prevent it from acting like other carbohydrates.

If you're inquiring regarding its glycemic index values, I would categorize it as very low, unlike many other carbs. You can have it even if you can't have sugar, because cellulose is the slowest carb you can consume, since it's digested as strictly fiber. It's actually the healthiest "carb" possible.

What is magnesium stearate? Magnesium stearate is a white substance, solid at room temperature, used in the manufacture of pharmaceutical and supplement tablets and capsules. The primary role of magnesium stearate in supplements is to act as a lubricant to prevent tablet and capsule contents from sticking to the machinery that process them. The magnesium stearate we use is vegetable based and batch tested for purity by government standards.

What is silicon dioxide? Silicon dioxide is found in many multivitamin and mineral supplements because silicon is necessary for good health. As a necessary nutrient for the health of your skin, hair, nails and bones, dietary silicon may also help to prevent arthritis and osteoporosis. But silicon dioxide also works as an anti-caking agent, and is added as an ingredient in foods to help keep your processed foods appetizing. Silicon is the second most common element on Earth, and the eighth most abundant element in the universe. Silicon makes up nearly 28 percent of the Earth's crust by weight. But in nature, it doesn't occur by itself. Instead, it usually takes the form of an oxide, meaning that the silicon atom combines with one or more oxygen atoms. Silicon has been known to be an essential nutrient in human health for some time. Silicon contributes to the health of your bones and arteries, and may also helps your body by maintaining a healthy blood pressure level.

What is Lemon Grass? Lemon grass is an herb with a mild citrus flavor. It's commonly used in Asian cuisine to flavor soups, seafood and curries. In the late 1980s, lemon grass was studied as a possible therapy to lower cholesterol. In early trials conducted by the Department of Nutritional Sciences of the University of Wisconsin, lemon grass proved

effective in lowering cholesterol and some of the patients experienced a drop of almost 40 points, almost equivalent to what a prescription drug would provide. Lemon grass also has antimicrobial effects, so it could be used to treat bacteria in the gastrointestinal tract. Check with your doctor before using herbal remedies to treat an ailment.

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