

## Natural Antioxidant **Resveratrol: Mystery and Reality**

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There is a consensus among scientists that free radicals generated by oxidative stress damage cells leading to pathological conditions. Medical research has demonstrated that antioxidants – a superfamily of molecules that inactivate free radicals – have beneficial effects.

Atherosclerosis is major health problem in the USA and Europe. Its mortality is higher than death associated with cancer, lung disease, and HIV infection combined. Diabetes and obesity are two other crucial problems in the USA. Mechanisms of atherosclerosis as well as those of type 2 diabetes are directly linked with inappropriate accumulation of oxidized lipids in the vessel wall, leading to atherosclerotic plaque formation and accelerated atherosclerosis in diabetes. It was suggested that treatment of atherosclerosis and diabetes should include the protection of lipids from oxidation. It is important to remember that free radicals are not always harmful. Free radicals generated by macrophages are crucial for defense mechanisms against infection. This complex role of free radicals requires balanced therapeutic treatments to maintain physiologically relevant responses and to maintain overall health. Unfortunately, chemical antioxidants turn out not to be as effective as it was earlier suggested. By contrast, natural antioxidant products did demonstrate positive results in multiple population studies, although these products are still not generally accepted by the formal medical establishment.

One of the most powerful natural antioxidants is **Resveratrol**. It is more effective even than the widely recognized antioxidant vitamin E. Resveratrol is present in natural products, such as red grapes, red wine, peanuts, some berries, dark chocolate, and Japanese knotweed. The most widely recognized source of Resveratrol is red wine. Treatments with conventional synthetic free radical acceptors often result in side effects. By contrast, no side effects of natural antioxidants have been reported. In statistically significant population studies it was demonstrated that nations that include red wine in their diet have low levels of atherosclerosis and diabetes (“French Syndrome”).

Resveratrol is not a classic drug defined by conventional medicine. Resveratrol is a food supplement which increases the body’s resistance to pathogenic intervention by the elimination of oxidized molecules. It supports native defense mechanisms and thus helps to maintain the optimal physiological balance in our body. The positive effect of Resveratrol for atherosclerosis and diabetes is well documented. Generalized effects of Resveratrol on free radicals elimination suggest that it could be effective for other pathologic conditions. This possibility is very attractive for clinical and basic research of oxidative stress.

### **Resveratrol Summary**

- Elimination and neutralizing of free radicals
- Normalize the level of oxidized lipids (particularly cholesterol)
- Anticancer effects by inhibiting the growth of cancer cells
- Anti-inflammatory and antibacterial effects
- Control of obesity and diabetes

## **Biographic sketch**

Galina N. Antonova, M.D., Ph.D

Galina Antonova has been living in Augusta since 1992. She held several research positions at the various divisions of the Medical College of Georgia, including Vascular Biology Center, Sickle Cell Center, Department of Biochemistry, and Department of Pathology. Galina earned her M.D. as a Biochemist/Physician and Ph.D. in Biochemistry from the Russian Academy of Medical Sciences (RAMS). She also completed three years of NIH-funded postdoctoral training in Integrative Medicine program.

Galina's education uniquely combines biomedical science and practical medicine. Her dual vision of the perspective of pathogenesis of human diseases allows Galina to critically analyze existing research literature and suggest the most promising applications of natural products, herbal medicine, and homeopathic approaches. Galina has a longstanding interest and an outstanding knowledge of the power of natural products as compared with traditional medicine. She believes that many pharmacological treatments can be replaced by much less dangerous therapy by natural products that have been used from the beginning of our civilization.

Galina's husband, Alexander, is a cell biologist also holding M.D. and Ph.D. degrees. He was employed at MCG in various capacities for almost twenty years. Galina's son Sergei has a Ph.D. in Russian history and teaches at Columbia University and City University of New York. Galina's lovely granddaughter is four years old.