

Resveratrol Revelations

The “French Paradox” is not a political conundrum, but rather an idiom used to express the initial surprise of Western epidemiologists as to the apparent contradiction of the juxtaposition of a high fat diet and the comparatively low incidence of heart disease in the population of France. (1)

Though there are several plausible explanations, including the moderate use of alcohol itself, it appears that the abundant supply of *polyphenols* found in red wine are part of the answer to this “riddle”. (2) Polyphenols are a major class of plant nutrients known as *phytonutrients*. Phytonutrients are chemicals found in plants (*phytochemicals*), of which there are tens of thousands, and of which some comparatively few appear to be useful in promoting optimal health in human beings. Polyphenols can be further divided into sub-classifications such as *anthocyanins* and *flavonoids*, the former of which contains the *stillbenes*, of which the most well known and researched is the topic of this “revelation”, *resveratrol*.

Resveratrol is most abundant in fruits of the vine, especially red grapes, pine trees, peanuts, and, most abundantly, in *Polygonum Cuspidatum*, an Asian plant used for centuries for heart and liver ailments.

In the last decade of the twentieth century, the search for a better understanding of the “French Paradox” lead eventually to plethora of scientific investigation of red wine polyphenols and most especially of resveratrol. This research lead to the “resveratrol revelations” summed up in such descriptions as:

- powerful anti-oxidant
- anti- proliferative, anti-atherosclerotic
- anti-clotting
- senescence preventive
- central nervous system protective
- non-toxic chemo-protective
- anti-cancer cell protective
- hormone, gene, and enzyme modulator
- longevity activator!

Heart Helper

Most everyone knows that there is a connection between cardiovascular disease and cholesterol. Those with a bit more familiarity appreciate that the type of cholesterol which is most damaging are the low density and very low density “fat/proteins” (the bad lipoproteins LDL and VLDL). Generally, it is the more informed of us who appreciate that it is only when these “bad’ lipoproteins are oxidized by free radicals that they become the artery clogging menaces for which they are feared. This is why it is thought that the water and fat soluble vitamins, like C and E, appear to help prevent heart disease, as they each protect against certain free radicals that oxidize the bad “fat/proteins” in the

blood. Resveratrol's own marked antioxidant activity is most fortuitously accompanied by

- its ability to boost nitric oxide, an endogenous chemical that relaxes arteries
- its ability to halt proliferation of the cells responsible for narrowing our arteries,
- its ability to inhibit thrombin, and a legion of other pro-clotting conspirators! (3,4,5,6,7)

Minding Your Memory

Like it or not, we are all “fat heads” in that our brains are composed most especially of fatty acids! Therefore our minds as much as our hearts need antioxidant protection. Indeed, those suffering from *Alzheimer's disease* produce an abnormal protein, or more exactly a peptide, the now infamous *beta-amyloid*. These pitiless peptides produce so much free radical damage that the brain cells are slowly “burned” to death, leading to this universally dreaded dementia. Resveratrol, most especially when combined with vitamins C and E, provides the much sought for protection from these monstrous mind-munchers.

It is even possible that resveratrol will be used medicinally in therapeutic doses post stroke and central nervous system ischemia and injury. Resveratrol injected into laboratory animals proved better than prednisone as a post traumatic spinal cord injury anti-inflammatory. Researchers speculate that regular supplementation may be neuro-protective as well. (8 -13)

Cancer Risk Reversal with Resveratrol

Very recent research strongly suggests that resveratrol is a broad spectrum cancer inhibiting agent. Research reveals that resveratrol:

- promotes normal cell death (apoptosis),
- kills cancer cells, (both with and without tumor suppressor gene p53)
- increases vitamin D3's steroid mediated inhibition of breast cancer
- increases cancer cells vulnerability to chemo toxic agents (as in Hodgkin's Lymphoma)
- inhibits cancer cell metastasis to bone, (especially for renal, breast and pancreatic carcinomas)
- inhibits cancers associated with high linoleic fatty acid Western diets (omega 6 EFA's) and,
- concurrently protects healthy cells via its abilities as an antioxidant, and as a modulator of genes, hormones, enzymes and other endogenous (self made) cell signaling chemicals! (14-25, 28-30)

Long Live Resveratrol!

As wonderful as resveratrol sounds, I have saved what is the most exciting news for last.

Just recently, scientists at Harvard Medical School and BIOMOL research labs have discovered that this most remarkable phytonutrient activates a “longevity gene” that increases the life span of yeast cells by 70%! This is not just good news for yeast cells. For up to this discovery, the only proven method of life extension was *calorie restriction*. But if calorie restriction is also to be “successful” for us humans, it means being very skinny, tired, and cold all the time, not to mention hungry! Sounds more like a life sentence than life extension to most of us!

Calorie restriction in yeasts, worms and flies occurs, at least in part, by activating a gene called sirtuin (SIR). The potential good news is that we have our own version of a “Methuselah gene” and resveratrol supplementation turns on (via deacetylation) our SIR as well as calorie restriction!

Another theory of aging, the *Waste Accumulation Theory*, holds that we “suffocate in the ashes of our own metabolic fires”. It is known that as we pass our prime, we lose our ability to perfectly replicate our DNA in every new cell. Slowly, these less than perfect copies accumulate, resulting in what has been termed as “junk DNA”, which debris eventually chokes optimal functioning. Resveratrol antioxidant power has been shown to protect oxidation of both cellular and mitochondrial DNA, thereby helping to minimize these errant copies that kill!(31-32)

Resveratrol Reservations

Being a board certified anti-aging specialist, I am well aware of the desire in medical and nutritional ventures to find (and sell) the “magic bullet” that will stop aging. And while I am very excited to share this research on resveratrol, I feel strongly that health and aging are multifactorial and no single “magic” elixir exists.

Having said that, I will close with some words about increasing resveratrol and polyphenol intake via diet and supplements. Polyphenols are richest in fruits in general. The berries are the generally richest source of anthocyanins subgroup of polyphenols. Red wine polyphenol concentration depends on many factors, such as type, climate and soil. Even the best red wines may have little more than 2 mg per liter. But research in the scientific literature suggests that at least ten times that amount (20 mg) is needed to begin to optimize the health benefits potential in resveratrol and a hundred times that or more (100 to 200 mg +) for actual potential therapeutic purposes.(33)

Because resveratrol is highest in *Polygonum Cuspidatum*, combining this single phytonutrient in pharmaceutical grade with red wine whole grape polyphenols (RWP), as naturally found in nature, is likely the best supplemental approach. Quercetin, another polyphenol especially abundant in green apple skins and onions, enhances viability. As with most supplements, there is a great deal of variability in quality, quantity, and activity. Unfortunately, as Consumer Report type exposes continually inform us, it is hard to tell what is in a bottle just by reading the label. Health professionals and lay persons alike should stay with high quality companies of which they are familiar.

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