RESVERATROL

Surely, you have heard countless claims by the (unscrupulous) health food industry of the seemingly unlimited conditions that are "cured" by Resveratrol. Resveratrol is presented as particularly "cool" because its highest concentration is found in red wine. As it turns out, 90% of the claims about Resveratrol are totally false (--- and would be false even if the principal researcher behind many of the outlandish Resveratrol claims had not admitted he fabricated many of his findings).

Resveratrol is one of the heavily hyped "phyto-nutrients" for which the health food industry has been extracting money from health food nuts for years now. These increasingly popular phyto-nutrients are actually all chemically related. --- They are polyphenolic compounds; they are found in highest concentrations in foods of vegetable origin; they do, (under ideal circumstances) have beneficial biological activity. In addition to Resveratrol, these polyphenolic compounds include flavonoids (such as quercetin, rutin, and hesperidin), isoflavones, flavonols, flavonones, proanthocyanidins, anthocyanins, catechins, and carotenoids.

The anthocyanins are found in grapes, red wine, and berries. The catechins are found in red wine, green tea, and cocoa --- and are responsible for the big green tea craze, as well as making chocolate into a "health food." Proanthocyanidins were responsible for the health food craze over grape pips and pine bark that began in the 1980s. The isoflavones are found in extracts of soy, and are largely responsible for the perception of soy as a health food. The flavonoids, flavones, flavonols and carotenoids are widely distributed among foods of vegetable origin. There are hundreds and hundreds of polyphenolic compounds --- each with its own biological activity. Many of them cannot be considered nutrients, but have a biological activity that can only be classified as a drug action. Some of them do function as nutrients. Many, many of the polyphenolic compounds are estrogenic in activity --- which is considered good or nasty --- depending on whose hype you are reading.

1. Resveratrol, like most other polyphenolic herbal garbage has two damaging effects --- it has some degree of estrogen activity (which is almost always a disaster), and it causes a Dysaerobic test pattern (despite being promoted as an "antioxidant").

2. Most of the "antioxidant" activity attributed to Resveratrol is actually associated with its antireductant properties, but potentially good nonetheless.

3. We have seen many patients who were taking Resveratrol recommended by another practitioner. None of these patients had experienced any

improvement in their condition from the Resveratrol. There were no particular metabolic imbalances found in these patients, which indicates that the Resveratrol did not cause any particular metabolic imbalances. It seems to have done virtually nothing.

4. Is Resveratrol a "natural" aromatase inhibitor? ----- Anything that inhibits a natural enzyme is unnatural. Resveratrol is natural only in the sense that it occurs "in nature" as does, for example, poison ivy. --- Resveratrol is a polyphenolic compound that structurally resembles estrogen, and which has some estrogenic activity. It does inhibit the formation of endogenous estrogen. Resveratrol is thus an unnatural but minimally effective therapy for breast cancer.

5. Several truly legitimate studies on human subjects show that Resveratrol performs no better than a placebo in many inflammatory conditions.

6. Resveratrol is probably entirely a health food industry hoax and at very best useless. One study shows that to reproduce any of the effects that are highly publicized from the positive research on the substance would require a person to take 78 tablets every day.

7. One interesting fact about Resveratrol is that it exists in plants as an antifungal. On the plus side there are a few human studies that show clear benefits of Resveratrol. One study showed that it decreases insulin resistance in Type II diabetics. Another study shows Resveratrol's benefit in patients with coronary artery disease. In that study of patients with coronary artery disease, left ventricle diastolic function was improved as was endothelial function, while LDL cholesterol was lowered somewhat. Regarding Resveratrol's potential effects on inflammatory cytokines, there is a study showing that a supplement containing Resveratrol decreased TNF-α, IL-6, and C-reactive protein. There are a couple other studies purporting to show that Resveratrol lowers cholesterol and triglycerides a bit. --- But --- the problem with most of these studies is that a pure Resveratrol supplement was not used, but rather a conglomeration of "phytonutrients."

   These heavily hyped benefits of Resveratrol supplementation are almost certainly derived from a Resveratrol metabolite, not the Resveratrol itself, and that metabolite or metabolites has yet to be identified.

8. The anti-inflammatory benefits of Resveratrol have been demonstrated almost entirely in cell cultures, rather than in real, live critters. --- So --- a lot of the most hyped benefits of Resveratrol may be little more than wishful thinking.

9. Perhaps the biggest problem with Resveratrol is its poor bioavailability. Quoting from a study done by Wenzel, et al, and published in the Journal of Molecular Nutrition and Food Research, "The oral bioavailability of Resveratrol is almost zero…" The problem is that Resveratrol is absorbed from the intestines to a certain extent, but is metabolized and conjugated so rapidly that it is excreted in the feces and urine long before it can have any beneficial effects.

10. There is the chance that Resveratrol does indeed have the highly publicized benefits that the health food crowd wishes for --- but that those benefits come not from Resveratrol itself, but from its metabolites, which include various sulfates and glucuronides.

11. To understand the benefit or harm done by the various polyphenolic phyto-nutrients, you must first realize that almost all nutrient research begins with studies done on cell cultures. The next step is to do studies on animals. Then, only limited, if any, studies are done on human beings. Here is what has happened with Resveratrol and almost all the polyphenols. The initial studies were done with human cell cultures and all sorts of wonderful things happened --- inflammation was reduced; fibrosis was reduced; oxidative damage was reduced; reductive damage was reduced; cancer cells self-destructed; cells increased their receptivity to certain hormones and decreased their receptivity to others.

    --- So then what? The health food industry rushed to market with its new wonder cure phyto-nutrient, enthusiastically quoting all the benefits revealed by cell culture studies. People were snookered into spending lots of money, and entirely frustrated by the absence of benefits.

    The next stage of research involved study on animals --- and wonder of wonders --- these phyto-nutrients yielded amazing clinical results in critters with every disease you can imagine. But the fishy part of the polyphenol studies was that the miracles achieved in animals, while truly exciting, were entirely different than the miracles achieved in cell cultures. Why was that? No one bothered to ask. --- The health food industry ramped up the propaganda machines, now advertising the benefits achieved in animal studies --- snookering more victims who wasted even more money.

    Another interesting aspect of the polyphenol studies on animals was that the clinical benefits (as well as side effects) were entirely different in animals given the phyto-nutrient by injection vs. those who were supplemented orally. You would think by this point researchers (if they were true men of science) would begin to ask the right questions and begin putting two and two together.

Finally, studies on some of these polyphenolic compounds were done on humans. Again, the results were "fishy" --- and no one really bothered to ask questions about why. Many of the human studies showed absolutely none of the benefits that had been obtained in cell cultures or in animal studies. Some of them showed benefits, but benefits that were entirely different than those found in cell culture and animal studies. Human studies with the polyphenol taken by injection yielded entirely different results than those involving polyphenols taken orally. In some cases injection yielded greater benefits, yet some yielded none whatsoever. For other polyphenols it was the reverse --- taking it orally yielded benefits far greater than taking it by injection.

Okay --- not all scientists are stooges. A few began to ask the right questions and look at the obvious. --- There were major problems with absorption of these phyto-nutrients, and there were major differences in how they were metabolized once they were absorbed. ------ So now --- We can spare you all the details and skip to the bottom line:

- Almost none of the "unlimited" benefits of Resveratrol come from Resveratrol itself. Similarly, very few of the benefits from any of the flavonoids, catechins, proanthocyanidins, or any of the other polyphenolic compounds come from the parent compound itself.

- Almost none of the polyphenols are efficiently absorbed.

- The little bit that is absorbed, is immediately altered on the first pass through the liver. The liver either conjugates these polyphenols to be dumped into the gall bladder for elimination, or methylates them or converts them into sulfates or glucosides.

- Some of these metabolites created in the liver, not the original phyto-nutrient from which they are derived, are the actual biologically active chemical. Some of these polyphenol derivatives have nasty drug effects, and a few of them have positive biological effects. --- But in general, these polyphenols have little clinical impact.

- The desired benefits from polyphenolic supplementation are evident in a certain percentage of people, yet are completely absent in others. --- Why such biological individuality?

- Almost all the biological activity of polyphenolic compounds comes not from the phyto-nutrient, and not from the liver metabolite of the original polyphenol, but from derivatives of the phyto-nutrient produced by the intestinal microbiota. Those with healthy intestinal microbiota convert these phyto-nutrients into extremely beneficial polyphenol derivatives that are absorbed into the bloodstream and have tremendous biological

activity. Those with rotten intestinal flora produce little or no beneficial phyto-nutrient derivatives, and in many cases have nasty bacteria that produce entirely different polyphenols that are actually toxic.

Do you get it? There are hundreds of polyphenolic compounds in foods of vegetable origin that have high biological activity, and are extremely beneficial. --- But --- you will only benefit from these nutrients if they are converted to their biologically active form by healthy colonic bacteria. So --- if you want all the advertised benefits of proanthocyanidins, flavonoids, catechins, and all the rest --- eat your vegetables --- and --- supplement with Immuno-Synbiotic.