

# WEIGHT LOSS E-NEWSLETTER

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The information contained in this newsletter is for informational purposes only. It is not to replace the medical opinion rendered by a physician specifically to a patient.

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## Berry Compound Reduces Aging Effect

In a new study, aged laboratory animals that ate a diet rich in the berry and grape compound pterostilbene performed better than those in a group that did not eat the enriched diet, scientists with the Agricultural Research Service (ARS) have reported. Pterostilbene reversed measurable negative effects of aging on brain function and behavioral performance.

Neuroscientist James Joseph, psychologist Barbara Shukitt-Hale and colleagues at the Jean Mayer USDA Human Nutrition Research Center on Aging at Tufts University in Boston, Mass., collaborated on the study with chemist Agnes Rimando of the ARS Natural

Products Utilization Research Laboratory in Oxford, Miss.

For the two-part study, the researchers wanted to determine if pterostilbene would be effective in reversing the effects of aging on mature rats.

For the first part of the study, they tested seven stilbene compounds in cell cultures and found that pterostilbene was the most effective at preventing oxidative stress. For the second part of the study, they fed aged rats one of three diets: control, or control adjusted to include either low or high concentrations of pterostilbene. The results indicated that in aging rats, pterostilbene was effective in reversing cognitive decline and that improved working memory was linked to pterostilbene levels in the hippocampus region of the brain.

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The study results are the latest in a series of ARS cell culture and animal model studies published in the last decade that shed light on relationships between various dietary components and brain function while aging. The authors noted that there are additional berry compounds showing similar potential, which they continue to investigate in animal and cell models.

The researchers followed protocols approved by the Frederick, Md.-based Association for Assessment and Accreditation of Laboratory Animal Care International and a Boston, Mass.-based Internal Animal Care Review Committee.

The study was published recently in the *Journal of Agricultural and Food Chemistry*.

## UCSB Scientists Show How Certain Vegetables Combat Cancer

Women should go for the broccoli when the relish tray comes around during holiday celebrations this season.

While it has been known for some time that eating cruciferous vegetables, such as broccoli, cauliflower, and cabbage, can help prevent breast cancer, the mechanism by which the active substances in these vegetables inhibit cell proliferation was unknown — until now.

Scientists in the UC Santa Barbara laboratories of Leslie Wilson, professor of biochemistry and pharmacology, and Mary Ann Jordan, adjunct professor in the Department of Molecular, Cellular, and Developmental Biology, have shown how the healing power of these vegetables works at the cellular level. Their research is published in this month's journal *Carcinogenesis*.

"Breast cancer, the second leading cause of cancer deaths in women,

can be protected against by eating cruciferous vegetables such as cabbage and near relatives of cabbage such as broccoli and cauliflower," said first author Olga Azarenko, who is a graduate student at UCSB. "These vegetables contain compounds called isothiocyanates which we believe to be responsible for the cancer-preventive and anti-carcinogenic activities in these vegetables. Broccoli and broccoli sprouts have the highest amount of the isothiocyanates.

"Our paper focuses on the anti-cancer activity of one of these compounds, called sulforaphane, or SFN," Azarenko added. "It has already been shown to reduce the incidence and rate of chemically induced mammary tumors in animals. It inhibits the growth of cultured human breast cancer cells, leading to cell death."

Azarenko made the surprising discovery that SFN inhibits the proliferation of human tumor cells by a mechanism similar to the way that

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the anticancer drugs taxol and vincristine inhibit cell division during mitosis. Mitosis is the process in which the duplicated DNA in the form of chromosomes is accurately distributed to the two daughter cells when a cell divides.

Hundreds of tiny tube-like structures, called microtubules, make up the machinery that cells use to separate the chromosomes. SFN, like the more powerful anticancer agents, interferes with microtubule functioning during mitosis in a similar

manner to the more powerful anticancer drugs. However SFN is much weaker than these other plant-based drugs, and thus much less toxic.

"SFN may be an effective cancer preventive agent because it inhibits the proliferation and kills precancerous cells," said Wilson. It is also possible that it could be used as an addition to taxol and other similar drugs to increase effective killing of tumor cells without increased toxicity.

Over the last few weeks, there are a number of patient's who have asked about our Glendale Office.

Here are the answers:

- Any one can make and appointment and see me there for any reason. This can be for pre op, post op, new consults etc.
- Patient can also choose to have their operations done in Glendale either at the the hospital, at Vertigo Hills Hospital or at the Outpatient surgery Center.
- All the appointments and arrangements are made through the same phone numbers and email addresses.