

LE Magazine September 2002

Q&A

Thiol Nutrients...

And the use of curcumin as an adjuvant cancer therapy

Q In the note at the end of your most recent article on curcumin (July 2002, p.26), you stated: "Cancer patients using curcumin may want to avoid high doses of thiol nutrients... because these nutrients might interfere with curcumin's PKC inhibiting effects in actively growing cancer." I have been taking both curcumin and thiols for adjuvant cancer therapy. What should I do?



A Thiols are certain sulfur-related compounds that boost glutathione levels inside cells. Examples of thiol supplements are N-acetylcysteine and lipoic acid. Both are powerful antioxidants. Curcumin, a supplement from the root of a ginger-like plant, is also a potent antioxidant. In addition, it possesses many important anti-cancer effects. One of curcumin's known molecular properties is inhibiting the growth of tumors by blocking an enzyme known as PKC (protein kinase C) [Carcinogenesis 1993;14:857-61].

The problem with taking curcumin and thiols together for cancer treatment is that thiols can interfere with curcumin's ability to block PKC. However, the extent of the effect, and the type of cells in which the interference happens, are an unknown. In addition, there are many forms of PKC, and it's not clear which form of PKC curcumin inhibits and under what conditions. To be on the safe side, our recommendation is to avoid "high doses" of thiols when taking curcumin for cancer adjuvant therapy. By high doses, we mean taking a wide variety of thiols and/or a higher-than-what-is-stated-on-the-label of any one thiol [Free Radic Biol Med 2001;31:670-8].

It should be noted that the problem might not be unique to curcumin. Ellagic acid is another antioxidant (from berries) that inhibits PKC. In a study from the University of Southern California, thiols and vitamin C impeded its blockage of the enzyme. Again, however, this does not mean that these supplements will impede each other in any particular type of cancer cells—more research will have to be done. We only want to make people aware that the possibility exists [Proc Annu Meet Am Assoc Cancer Res 1997;38:A1395].

In addition to promoting cell growth, signals sent through PKC participate in the initiation of cell death known as apoptosis—the destruction of abnormal cells. But the process is extremely complex and curcumin's effects are not completely understood. Does this mean that thiols might impede curcumin's apoptotic effect, too? There is no good indication of it in literature at this time. In addition, it was recently discovered that curcumin causes apoptosis in a novel way that does not involve PKC [Exp Cell Res 1999; 249:299-307].

In sum, it is not clear whether the potential weakening of effects of thiols and possibly other antioxidants on curcumin's anti-cancer effects is important in the long run or not. But for adjuvant cancer therapy, we recommend erring on the side of caution and avoiding high intakes of thiol nutrients. For prevention, the story is different. Here, curcumin works through many different processes that do not rely on PKC.

Q I am a very healthy 35-year-old male who became aware of your great organization through some friends. In reading your magazine and other literature, I am fascinated by many of the products and their potential to help me stay relatively young and healthy. How do I determine what products my body needs?

A The Foundation's Prevention Protocol includes a list of the top 12 supplements that a healthy adult may want to consider using to help prevent age-related diseases. If you want to further fine-tune your supplemental regime, the "Male Panel" blood test profile offered by Life Extension's blood testing service can provide critical information about what supplements will be of help to you. For example, high homocysteine levels exhibit no symptoms, yet can predispose you to heart disease. Only the proper blood tests can determine what your levels are or how much of homocysteine-lowering supplements you may need. To inquire about Life Extension's blood testing service, call 1-800-208-3444.



Q I wanted to take DHEA but my doctor says that because I have Chronic Fatigue Syndrome (CFS), DHEA won't follow the correct pathways in my body and it will not get absorbed. Is that correct?

A DHEA is readily absorbed, especially when taken with some dietary fat (or fatty acid supplements), but it does follow slightly different hormonal pathways depending on the individual. In some people, DHEA will elevate estrogen levels, while others will see a higher testosterone level. The best way of ascertaining how DHEA functions in your body is to test your blood for free testosterone, estradiol and DHEA about six weeks after you initiate DHEA supplementation. This blood test will also indicate whether you need to increase or decrease your DHEA dosage. While each person has a different hormone response to DHEA, we are not aware of any studies indicating that this pathway would be altered because of a certain illness or disorder. DHEA supplementation might benefit those with CFS. Studies show that DHEA-S levels were significantly lower in those with CFS compared to healthy people [J Affect Disord 1999 Jul;54(1-2):129-37]. Other studies indicate that a deficiency of DHEA-S in patients with CFS may also be related to the neuropsychiatric symptoms [Int J Mol Med 1998 Jan;1(1):143-6].

Q How much deprenyl should I take daily for life extension and can I combine it with 20 mg of Prozac daily?

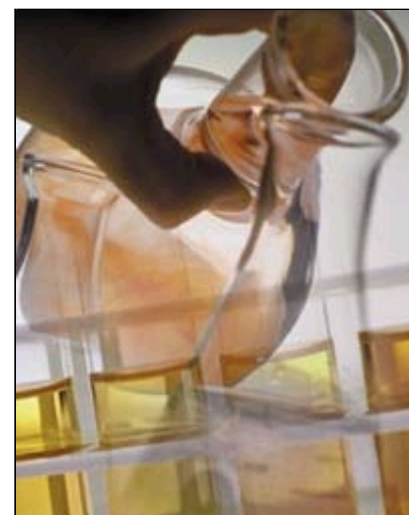
A The general recommended dosage for deprenyl for life extension is 5 mg twice a week. Deprenyl is a selective, irreversible inhibitor of monoamine oxidase B (MAO-B), and Prozac is a serotonin selective reuptake inhibitor (SSRI). While you should consult your physician before combining the two drugs, the very low dose of deprenyl needed for potential life extension purposes (10 mg each week) may not interact adversely with Prozac. Parkinson's patients who take 5 mg to 10 mg of deprenyl a day have been warned of potential harmful interactions if they take SSRI drugs like Prozac, Zoloft and Paxil. In fact, the package insert for deprenyl specifically warns that people contemplating deprenyl should discontinue the SSRI for at least 14 days before initiating deprenyl. This warning, however, is based on a daily dose of 5 mg to 10 mg of deprenyl, whereas the dose of deprenyl being used for life extension purposes is only 5 mg to 10 mg a week. We are not aware of any adverse reports from people taking very low dose deprenyl (10 mg a week) along with SSRI drugs like Prozac, but there have been no published studies that address this complicated issue.

Q What is the difference between Acetyl L-carnitine and L-carnitine?

A Acetyl-L-carnitine is the acetyl ester of the amino acid L-carnitine. Acetyl-L-carnitine is absorbed into the bloodstream more efficiently than L-carnitine, passes more easily through cell membranes and is utilized more efficiently in the mitochondria of the cell.

Q I have read that high fructose from corn syrup can cause hardening of the arteries and cross linking of the skin. Is this accurate?

A Overconsumption of high glycemic foods can cause excess production of insulin and can contribute to chronic inflammation and glycation. Glycation is the binding of a protein molecule to a glucose molecule resulting in the formation of damaged, non-functioning structures. Many age-related diseases such as arterial stiffening, cataract and neurological impairment are at least partially attributable to glycation. Taking supplements like Carnosine or Chronoforte can help reduce glycation. Since the intake of high-glycemic foods like fructose induces a sharp insulin spike, and chronic high insulin levels (hyperinsulinemia) is associated with increased risk of artery diseases, reducing intake of foods that state "high fructose from corn syrup" is a good idea. Many people tend to overlook the value of moderation.



These statements have not been evaluated by the FDA. These products are not intended to diagnose, treat, cure or prevent any disease. The information provided on this site is for informational purposes only and is not intended as a substitute for advice from your physician or other health care professional or any information contained on or in any product label or packaging. You should not use the information on this site for diagnosis or treatment of any health problem or for prescription of any medication or other treatment. You should consult with a healthcare professional before starting any diet, exercise or supplementation program, before taking any medication, or if you have or suspect you might have a health problem. You should not stop taking any medication without first consulting your physician.