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## Q&A

### Apoptosis, Cholesterol and More

**Q** *What does apoptosis mean? I see this word mentioned in your cancer articles and protocols, but I cannot find it in the medical dictionary.*

The term means programmed cell death. The main purpose of cancer therapy is to induce cancer cells to differentiate in a way that promotes programmed cell death or apoptosis. Apoptosis is also involved in healthy normal aging to remove damaged cells that are not functioning properly.

**Q** *Does a high level of LDL cholesterol ensure that one will have arterial plaque deposits and be at risk for heart disease? Conversely, does a low level of LDL ensure that one will not?*

An elevated LDL does not guarantee that you will have blockage in the arteries, but it is definitely a risk factor. LDL carries most of the blood's cholesterol, and the cholesterol from LDL is the main source of damaging accumulation and blockage in the arteries. It is, however, only one part of the cholesterol equation. An elevated HDL also plays an important role in heart health. HDL can help keep LDL cholesterol from building up in the artery walls, and also is responsible for picking up and transporting cholesterol in the blood back to the liver, leading to its elimination from the body.

**Q** *I know you sell a few different products that can help with mental decline due to aging. What product would help with mental decline due to a closed head trauma accident? I suffered this accident more than seven years ago but still experience problems with memory, concentration, and word recall. Any suggestions?*

The Foundation offers a product called CDP Choline Caps. CDP-choline stands for cytidine-5-diphosphocholine, a form of choline that several studies have shown may be beneficial for brain injury and head trauma. A recent study in the Journal of Neurosurgery shows that treatment with CDP-choline decreased brain damage following traumatic brain injury.<sup>1</sup>

In another study, 400 mg/kg of CDP-choline significantly decreased brain edema and blood-brain barrier breakdown after traumatic brain injury.<sup>2</sup> This study demonstrates the neuroprotective effects of CDP-choline in the injured cortex as well as in the hippocampus, a brain region known to be vulnerable to injury, after experimental traumatic brain injury.

A prescription drug called Nimotop® (nimodipine) is also very beneficial for treating head trauma in the dose of 30 mg three to four times a day. As always, if you are under a doctor's care, please be sure to inform your physician of any supplements or advice you receive from the Foundation.

**Q** *Do you have any information on the use of acetyl- cysteine and nephrotoxicity prevention?*

According to a study in the Journal of the American Medical Association (JAMA),<sup>3</sup> the antioxidant acetylcysteine has been shown to help prevent nephrotoxicity in individuals with moderate renal insufficiency who undergo CT scans. In the study, 600 mg of acetylcysteine was administered orally twice on the day of the procedure and twice the previous day. Within the 48-hour period following a CT scan, serum creatinine on average was lower in the acetylcysteine group, and creatinine clearance was increased. The JAMA study recommends the use of acetylcysteine, also known as N-acetylcysteine (NAC), to prevent contrast nephrotoxicity in patients with kidney impairment.

**Q** *Can I take ginkgo biloba if I am taking Lipitor®? Someone told me that I should not mix the two.*

According to the Physician's Desk Reference for Herbal Medicines, ginkgo biloba is contraindicated with anti-thrombotic medications such as warfarin, but there is no mention of any contraindication between ginkgo biloba and statin drugs such as Lipitor®. Whenever you are under a doctor's care, however, it is always best to inform your doctor of any supplements or advice



you receive from the Foundation. Refer to the Thrombosis Prevention protocol to read how one may safely take anti-platelet nutrients like ginkgo with anti-coagulant drugs like Coumadin®.

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## References

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2. Baskaya MK, Dogan A, Rao AM, Dempsey RJ. Neuroprotective effects of citicoline on brain edema and blood-brain barrier breakdown after traumatic brain injury. *J Neurosurg* 2000 Mar;92(3):448-52.
3. Kay J, Chow WH, Chan TM, et al. Acetylcysteine for prevention of acute deterioration of renal function following elective coronary angiography and intervention: a randomized controlled trial. *JAMA* 2003 Feb 5;289(5):553-8.

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