

## **Glutathione: Boost Your Health and Help Protect Yourself From Radiation**

By <u>Washington's Blog</u> Global Research, November 25, 2013 <u>Washington's Blog</u> Theme: <u>Environment</u>, <u>Science and</u> <u>Medicine</u>

Glutathoine is your body's "master antiojxidant".

Every cell of your body contains gluathione.

And glutathione makes any other antioxidant which you ingest more effective.

Numerous studies have shown that glutathione can help protect cells against radiation damage, including studies published in the following journals:

- Proceedings of the National Academy of Sciences; and here and here
- International Journal of Radiation Biology
- Official Journal of the Radiation Research Society
- Cellular and Molecular Neurobiology
- The Biological Bulletin
- Methods and Findings in Experimental and Clinical Pharmacology
- Photochemistry and Photobiology
- <u>The journal Nutrients</u>

This is not entirely surprising, given that it's well-documented that <u>all antioxidants help to</u> <u>protect against damage from radiation</u>. Specifically, one of the main ways in which lowlevel ionizing radiation damages our bodies is <u>by the creation of free radicals</u>.

Columbia University <u>explains</u> the damaging effects of low-level radiation through free radical creation:

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Some radiation experts <u>argue</u> that the creation of a lot of free radical creation is *the most dangerous*mechanism of low level ionizing radiation:

During exposure to low-level doses (LLD) of ionizing radiation (IR), the most of harmful effects are produced indirectly, through radiolysis of water and formation of reactive oxygen species (ROS). The antioxidant enzymes – superoxide dismutase (SOD): manganese SOD (MnSOD) and copper-zinc SOD (CuZnSOD), as well as glutathione(GSH), are the most important intracellular antioxidants in the metabolism of ROS. Overproduction of ROS challenges antioxidant enzymes.

We've previously told you how to get past the hype <u>to find the foods that are highest in</u> <u>antioxidants</u>.

But glutathione – as the "master antioxidant", which is in every cell of your body – is probably the most important one to focus on.

Dr. Jimmy Gutman – a practicing physician, former Undergraduate Director and Residency Training Director of Emergency Medicine at McGill University in Montreal, Quebec, who has served on the Board of Directors of the Canadian Association of Emergency Physicians – claims:

Raising glutathione levels protects cells from damage from the most dangerous of free radicals, the hydroxyl-radical, is released when ionizing radiation hits us.

Note also that <u>exposure to radiation *depletes* glutathione</u> in your body. You basically use up glutathione neutralizing the free radicals created by radiation. So it is important to keep your glutathione levels up when you are exposed to radiation.

How Can We Boost Glutathione Levels?

Despite the hype from the supplement industry, glutathione supplements don't do anything. Specifically, our stomach acid destroys glutathione ... so you'll be throwing money away if you buy supplemenets.

But you can eat foods that are high in the *precursors* to glutathione ... and your body will use them to make more glutathione.

Specifically, 3 amino acides – cysteine, glycine and glutamate – are the precursors to glutathione production.

Protein-rich foods tends to be high in all 3. But heating or pasteurizing them destroys many of the glutathione-producing properties.

For example, raw eggs and raw meat are high in cysteine, but cooking destroys the cysteine. Most industrially-raised meat is of <u>poor quality</u>, and large-scale egg producers have been riddled with <u>salmonella</u> and other problems in recent years.

If you raise your own animals for meat or egg-laying hens, then you'll know they're safe. Otherwise, it may be a little risky eating raw eggs or meat.

Raw milk is apparently <u>very high</u> in glutathione precursors. But the USDA says that raw milk can be dangerous ... and the police may go to <u>some length to shut down</u> raw milk producers.

Raw cruciferous vegetables (brocolli, cauliflower, brussel sprouts, cabbage, cress, and bok choy) are also a good source of cysteine. But you would have to eat a *lot* of them ... which would cause stomach distress in many people.

So what's the answer?

<u>Exercise</u> boosts glutatione (and see <u>this</u>). <u>Lack of sleep</u> can deplete glutathione. So exercise and get enough rest.

Numerous scientific studies show that "undenatured whey protein" raises glutathione levels. See <u>this, this</u>, <u>this</u>, <u>this</u>, <u>this</u>, and <u>this</u>. (Whey protein is derived from milk or cheese, and "undenatured" just means that it is heated enough to kill bacteria ... but not high enough to destroy the glutathione precursors.)

If you are a vegan – eating neither meat or dairy products – then you may want to make sure you get enough brown rice protein (because it's <u>high in the glutathione precursor</u> <u>cysteine</u>).

For more information on glutathione from physicians, see <u>this</u>, <u>this</u> and <u>this</u>.

Postscript: <u>Read this</u> for more information on how to protect yourself from radiation.

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