

# Radiation: A Wellness Perspective

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As a result of the devastating earthquake and Tsunami on the Fukushima nuclear power plant, it may be many years before we know what the ramifications are for Japan and the rest of the world. I think most of us have a gut feeling that there is more to the story than meets the eye. The western world has acted with compassion and concern for the Japanese people, yet we also have a self preservation perspective and wonder what we should do to protect ourselves. Besides, there may be other radiation events in our life time.

The reality is, currently we are being exposed to low levels of radiation. It makes sense to be aware of radiation and what we can do to protect ourselves and our patients. Commonly we are exposed to radiation by traveling on airplanes, smoking cigarettes, getting x-rays, mammograms and CT scans. We are also exposed to low levels of cosmic radiation. The earth itself gives off radiation, called radon. People can be exposed occupationally. So



regardless of a "nuclear incident," we are exposed to radiation. And low levels of consistent radiation can be equally as dangerous as short high intensity doses.

Why is radiation so dangerous? Radiation creates, among other things, free radicals which have a particular affinity or effect on membrane tissue, cell membranes, mitochondrial membranes, etc. The good news is that our bodies are equipped to deal with free radicals.

Let's consider nuclear and radiation accidents and how they unfold. The first threat is what goes into the atmosphere and eventually falls as radioactive rain and dust. As the upper air currents repetitively cycle around the globe over and over again, radioactive airborne materials will "fall out" as part of normal rainfall or as dust particles. Secondly, radioactive agents will begin to show up in food and water.

We are starting to hear of small increases of radioactive levels in milk here in the US

and in Europe. Milk reflects the food chain. Cows eat grass which has been affected by radiation. Radiation then gets incorporated in their digestive tracts and ultimately affects their muscle tissue and released as food for their young. It stands to reason that if milk is affected so too will all our food supply. By measuring the radioactivity of milk we can track the seriousness of any radiation accident or event. Food is important because it represents a level of exposure inside our bodies.

The third effect could be the most important not only for the short term but long term. It is called the "Petkau effect." It was discovered by Dr. Abram Petkau at the Atomic Energy of Canada and published in "Health Physics" March 1972.

Petkau had been measuring the dose that would rupture a particular cell membrane. He found that 3,500 rads delivered in 2¼ hours (26 rad/min) would do it. Then, almost by chance, he tried again with much weaker radiation and found that 0.7 rads delivered in 11½ hours (1 millirad/min) would also destroy the membrane.

The radiation was of an ionizing nature, and produced negative oxygen ions. You might be more familiar with the term reactive oxygen species or ROS. Negative oxygen ions are MORE damaging to the membrane in lower concentrations than higher; because in higher concentrations, they more readily recombine with each other instead of interfering with the membrane. Extremely low level radiation over time can cause oxidative damage. In other words, once our antioxidant stores are exhausted, cellular damage can occur.

From a Wellness perspective, here's one more reason for people to increase foods rich in antioxidants and supplement appropriately. You can see the link below for more details but here are my recommendations:

- Iodine is a valuable nutrient for many reasons but primarily as a protective agent for the thyroid.
- N-Acetyl-L-Cysteine or NAC is a high potency chelating factor that is valuable in raising natural glutathione.
- Chlorella is a food grade form of a natural chelating agent. Biotics Chlorella Caps is free of contaminants, heavy metals and bacteria.
- Superoxide dismutase, as Dismuzyme Plus Granules, naturally quenches reactive oxygen species.
- Consider E-200 Hy (high gamma) a vitamin E complex providing mixed tocopherols with a heavy dose of the Delta tocopherol fraction.
- ProMulti-Plus: Dr. Allan Gaby in his medical textbook "Nutritional Medicine" individually discusses the value of vitamin C, vitamin E, flavonoids, zinc, selenium, B1, B5, B6, B12 and folate as treatments for radiation burns. ProMulti-Plus supplies foundational levels of these nutrients.

More and more, radiation is becoming a factor in everyday life. But in the aftermath of a nuclear accident, let's watch closely to see if baseline levels of radiation increase. But whether we see the levels increase or not, let's try to keep the mindset that we are a role model for our family and patients. Our example can encourage them to live a healthier life style, one that is rich in antioxidants, natural chelators, healthy oils, probiotics, phytochemicals and food that will encourage life.

Thanks for reading this week's edition. I'll see you next Tuesday.