

Radiation Exposure

"No truly safe dose exists; all radiation damage is accumulative from all sources over time."

When the Fukushima accident occurred, I said it will be years before we know the ramifications.

There are a lot of things we still don't know but here are some facts that we do know:

Fact, a massive amount of radiation was involved; one report estimates it was at least two and a half times bigger than the accident at Chernobyl.

Fact, the problem is still ongoing; the radiation is still being expelled and it will take another 10-20 years to clean up.

Fact, wind and water currents are bringing radiation toward the USA and are endangering seafood and wildlife.

Fact, food in America such as milk and tuna are contaminated with radiation albeit in "small" amounts.

Fact, reports are showing increased rates of congenital hypothyroidism, a classic and sensitive marker for radioiodine exposure in children on the American west coast.



Fact, no truly "safe" dose exists; all radiation damage is accumulative from all sources over time whether from short-term acute exposure or from long-term low dose exposure.

My thanks to Dr. Alex Vasquez who recently recorded a sobering webinar update on the effects of radiation and natural therapies we can use to protect ourselves. After pointing out that nobody wants to look at what is going on, he jumps right into the fact that the winds and ocean currents are moving contaminated seawater toward the pacific shores of the US. He points out that acute radiation damage occurs on a physi-

cal, chemical and biological level.

In the physical and chemical stages "macromolecules and water molecules in the body are excited and ionized, producing large amounts of free radicals such as the superoxide anion, hydrogen peroxide (H₂O₂) and the hydroxyl radical (OH). Free radical induced DNA damages include base pair injury, DNA strand rupture, and cross-link between same DNA strand, two strands of DNA and between DNA and protein."

The scariest part of the equation is that nobody knows what

effect long term "low dose" radiation has upon living tissue.

One scientist, Dr. Abram Petkau, discovered by accident that "low dose" long term radiation ruptures cell membranes. He published his work in Health Physics in March 1972 while working at the Atomic Energy of Canada, Whiteshell Nuclear Research Establishment. Petkau had been measuring the dose that would rupture a particular cell membrane. He found that 3500 rads delivered in 2¼ hours, that's (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, or (1 millirad/min) would also destroy the membrane.

The radiation was of ionizing nature, and produced negative oxygen ions. You might be more familiar with the term reactive oxygen species or ROS. Those ions were more damaging to the membrane in lower concentrations than higher. Because in higher concentrations they move faster and recombine more readily 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." So whether the damage is acute or long term, free radicals are involved.

Antioxidants will be an important part to the preventative or therapeutic picture to protect DNA, cell membranes and the gut lining. Remember, when we eat food that has been exposed to radiation it will affect how we absorb nutrients.

So what can we do therapeutically? Dr. Vasquez readily admits the number of nutrients that can be employed is overwhelming. For a full discussion see his webinars on this subject. However, he highlights a few broad areas to focus on namely antioxidant support, enhance detoxification pathways and gut and mucosal nutrition.

I have known Dr. Vasquez for over six years and he always suggests his Five-Part Nutritional Wellness Protocol as a basis for any treatment but now especially with the added stress of radiation exposure. The Five-Part Nutritional Wellness Protocol by Dr. Alex Vasquez includes:

1. A Paleo-Mediterranean type diet with an emphasis on seeds, nuts and plants;
2. A high dosed multi vitamin / mineral supplement like ProMulti-Plus;
3. Probiotics like Bio-Doph-7 Plus;
4. A balanced essential fatty acid product like Optimal EFAs (which Dr. Vasquez designed); and
5. Sufficient levels of vitamin D.

Some people can only afford the basic nutrients listed above but if your patients want to be more aggressive like me, consider adding NAC, Lipoic Acid, NitroGreens and Chlorella to the Five-Part Nutritional Wellness Protocol.

Lipoic Acid and NAC (N-acetyl-L-cysteine) are potent antioxidants also known for their chelating abilities and to raise natural glutathione.

NitroGreens and Chlorella to support the detoxification pathways and heal the gut. Chlorophyll is a major gut healer and both NitroGreens and Chlorella are loaded with it. Chlorella is also a food grade natural chelating agent. Biotics Research Corporation's in-house phytochemistry laboratory certifies that their Chlorella is free of contaminants, heavy metals and bacteria. Some researchers have identified 20 neutralizers to radioactive poisons in Chlorella.

As clinicians, we should be aware of therapeutic precautions and therapies for radiation exposure. Sooner or later we will find ourselves in a situation where radiation is an issue. Now more than ever we need to have heart to heart talks with our patients encouraging them to live a wellness lifestyle rich in antioxidants.

Thanks for reading this week's Tuesday Minute. I will see you next Tuesday.