

“GOT KI? ”

Frequently Asked Questions about the Pre-Distribution of Potassium Iodide for Nuclear Disaster Emergency Planning

(August 2016)

WHAT HAPPENS WHEN THERE IS A NUCLEAR ACCIDENT?

When a severe accident happens involving damage to the reactor core at a nuclear power plant, radioactive gases, particulates and liquids can be released into the environment, potentially at extremely high levels, depending on the grade of the disaster. Exposure to these radionuclides can be harmful to health with a particularly high risk for pregnant women, lactating mothers, infants, and young children. The National Academy of Sciences states that there is no dose of radiation so low as to be “safe.” Higher radiation exposure comes with greater risk to public health and safety.

Current emergency planning around nuclear power plants focuses on limiting public exposure prompt evacuation, sheltering-in-place and prophylactic protection. But these protective actions are currently limited in scope, underestimate evacuation times and fail to account for the fact that during a nuclear accident radiation can extend tens to hundreds, even thousands of miles away from the reactor site. For example, certain types of food restrictions are still in place across portions of Europe and the United Kingdom due to radioactive fallout from the 1986 Chernobyl nuclear disaster in Ukraine.

WHAT KIND OF RADIOACTIVITY IS RELEASED DURING A NUCLEAR ACCIDENT?

Depending on the type and scale of the nuclear disaster, hundreds of different radioactive isotopes can be released into the environment including cesium, strontium, iodine and even plutonium.

These radioactive materials biologically mimic stable elements. For example, radioactive cesium mimics stable potassium and upon exposure will migrate to muscle tissue including the heart. Radioactive strontium mimics calcium and will migrate to, and attack, bone tissue. Exposure to radioactive iodine will result in the absorption and concentration of the radioactive substance in the thyroid gland that can then lead to thyroid cancer and a host of growth and developmental disorders particular if exposure occurs during early life stages.

HOW CAN I PROTECT MYSELF AND MY FAMILY FROM A NUCLEAR ACCIDENT?

The most effective protection is prevention. There is no reliable protection from immediate and long-term biological exposure to the full range of radioactive elements potentially released during and following a severe nuclear accident. Nuclear accidents can be far reaching, and can result in long-lasting radioactive contamination of the environment. The only safe solution is to close dirty, dangerous and increasingly expensive nuclear power plants and replace them with cleaner, safer and more competitive renewable energy sources such as solar and wind.

Nuclear power is in decline worldwide, including in the United States. But while dangerous and aging nuclear power plants remain in operation, the public must be

adequately prepared to be immediately alerted, promptly evacuated and/or temporarily sheltered in the event of an accident. These steps are essential in order to reduce the harmful exposures to populations caught in the radioactive plume pathway. In the particular case of radioactive iodine, there is also effective prophylactic protection available through oral doses of potassium iodide (KI) to help prevent the uptake of radioactive iodine to the thyroid gland in populations during evacuation and sheltering-in-place.

WHAT IS THE THYROID GLAND?

The thyroid is the endocrine gland located in the lower front of the neck that makes hormones critical to human health and development. It regulates how the body uses energy and stays warm, and keep organs like the brain, heart and muscles functioning.

WHAT IS KI?

KI is potassium iodide. KI is a non-prescription stable compound of iodine more typically used to iodize common table salt. For radiological emergency planning, it is manufactured in concentrated doses approved by the Food and Drug Association (FDA), typically in tablet form but also as a liquid for infants. When promptly taken orally following notification of a nuclear accident, KI can help protect the thyroid gland from exposure to radioactive iodine.

However, KI is not an “anti-radiation pill. KI does not protect other parts of the body or prevent damage from exposure to other radioactive isotopes. It is most effective when taken immediately before exposure to radioactive iodine — one of the fastest moving of the gaseous radioactive isotopes released during a nuclear disaster. Pregnant and lactating women, infants and children are particularly vulnerable so it is especially important to protect them as soon as possible.

WHEN AND WHY SHOULD I TAKE KI?

The American Thyroid Association (ATA) recommends that populations within the 50-mile radius of a nuclear power plant should take KI immediately upon an official announcement of a nuclear accident. The ATA recommends that populations within 200 miles have readily available stockpiles (at police stations, fire departments, schools etc.) for distribution. When a single dose is taken orally, KI floods and saturates the thyroid gland with stable iodine, [] preventing radioactive iodine from being absorbed for 24 hours during exposure from all sources (air, water, food and milk). Since children with developing thyroids are most at risk, they are the priority population for prophylactic protection. However, adults can also benefit from KI protection of their thyroid glands.

HOW DO WE KNOW KI WORKS?

After the April 26, 1986 Chernobyl nuclear disaster in Ukraine, when the reactor exploded and released almost all the radioactivity inside it, the radioactive plume spread across Ukraine, Russia, Belarus and into many parts of Europe. Thyroid cancer is one of the medically documented health consequences from that nuclear accident. Poland immediately distributed KI, whereas Russia, Ukraine and Belarus — the worst affected countries— did not. There were subsequently virtually no cases of thyroid cancer in

Poland attributed to the Chernobyl disaster, whereas Belarus suffered an epidemic of thyroid cancers which are still being found even among populations born long after the accident.

IS KI SAFE AND ARE THERE SIDE-EFFECTS ?

KI has been approved by the federal Food and Drug Administration (FDA) and the World Health Organization as safe and effective. People allergic to iodine as is also found in iodized table salt can be at risk to an allergic reaction from KI ingestion.

HOW CAN I GET KI?

Currently, FDA approved KI tablets are available for sale to the general population through on-line distributors and over-the-counter at select pharmacies. The U.S. Nuclear Regulatory Commission (NRC), provides states the option to have emergency planners and nuclear power operators stockpile and distribute KI within the 10-mile emergency planning zone (EPZ) around nuclear power stations in the United States. In the following states with radiological emergency planning zones, authorities have opted into the federal program: AL, AZ, CA, CT, DE, FL, IL, MA, MD, MI, MN, MS, NH, NJ, NY, NC, OH, PA, SC, TN, VT, VA, WA, WV, WI. Emergency planners and nuclear power plant operators within these states typically distribute KI through redeemable vouchers sent in the mail (utility bills, etc.) for free scheduled pickups at designated stations and pharmacies within the EPZ.

However, studies show that most people are unaware that they can collect KI — or even that they should have it on hand to take in the event of a major nuclear accident. A Michigan public health study found that only 5% of people eligible to have KI voluntarily picked up two free tablets from their local pharmacy. This situation demonstrates that current emergency planning leaves most people unprepared for a nuclear accident.

WHO SHOULD HAVE KI?

According to the American Thyroid Association (ATA), the pre-distribution by direct delivery of KI tablets and instructions should be mandatory to all individuals, schools and institutions within 50 miles of a nuclear power plant. The ATA further recommends that populations out to 200 miles from a nuclear power plant should be educated and have easy access to KI stockpiled at designated locations.

WHAT ARE THE KI LAWS OUTSIDE THE UNITED STATES ?

According to the American Thyroid Association (ATA), the World Health Organization endorses the distribution of KI. In the aftermath of the Chernobyl and Fukushima nuclear disasters, more countries now require the pre-distribution of KI by direct delivery to populations in areas surrounding operating nuclear power plants. These countries include France, Sweden, Switzerland, Ireland, Canada and Belgium.

WHO SHOULD PAY FOR KI DISTRIBUTION?

Pre-distribution by direct delivery of KI should be funded by federal licensing fees collected from nuclear utility operators through the U.S. Nuclear Regulatory Commission and administered by state health departments. It is only right that nuclear

plant owners should cover the cost of protection from a risk for which their reactor operations are responsible.

WHAT IS THE “GOT KI?” CAMPAIGN?

“Got KI?” is a campaign to promote public awareness, public advocacy, legislative action and media coverage. The campaign aims to urge federal and state emergency planners to adopt the recommendations of the American Thyroid Association (ATA) to require the pre-distribution of KI by direct delivery to every resident within the 50-mile Emergency Planning Zone and stockpiling out to 200-miles around every U.S. nuclear power plant.

HOW CAN I JOIN THE “GOT KI?” CAMPAIGN?

Contact Beyond Nuclear (www.BeyondNuclear.org) to see if there is already an active campaign in your area. Beyond Nuclear can provide you with a “Got KI?” toolkit to help you get your own state campaign started. This will include: a fact sheet on KI; tips on how to use direct action like a door-to door canvas, along with draft door-hangers to build support; information about the American Thyroid Association recommendations; draft state legislation and sample petitions to assist sympathetic elected officials to introduce laws mandating KI pre-distribution by direct delivery; and a draft press release on the need for KI direct distribution.

I WANT NUCLEAR POWER SHUT DOWN. SHOULD I SUPPORT THIS CAMPAIGN?

Most people who live within 50-miles of a nuclear power plant have no idea of the threat that nuclear reactors pose. The “Got KI?” campaign provides an opportunity to raise public awareness about emergency planning around nuclear power in general as well as our fundamental right for minimal protection. “Got KI?” serves as a door-opener to the public at large, the media, local and state government, schools, first responders and others, to create dialogue, build momentum and get laws passed that ensure the pre-distribution by direct delivery of KI to populations most at risk. It furthers a critical awareness about nuclear power in general and the many reasons why U.S. energy policy should transition out of the nuclear age, renounce fossil fuels and join the renewable energy revolution.

FOR MORE INFORMATION ABOUT “**GOT KI?**”

Visit www.BeyondNuclear.org to select the “GOT KI?” tab or call 301-270-2209