CDC Patient Information Sheet - Radiation and Potassium Iodide (KI)

Purpose

This fact sheet from the Centers for Disease Control and Prevention (CDC) gives you some basic information about Radiation and Potassium Iodide (KI). It explains what you should think about before you or a family member takes KI.

What Is Radiation?

Radiation is a form of energy that is present all around us. Different types of radiation exist, some of which have more energy than others.

What Is Radioactive Contamination?

Radioactive contamination occurs when radioactive material is deposited on or in an object or a person. Radioactive materials released into the environment can cause air, water, surfaces, soil, plants, buildings, people, or animals to become contaminated. A contaminated person has radioactive materials on or inside their body.

What is KI?

Potassium iodide (also called KI) is a salt of stable (not radioactive) iodine. Stable iodine is an important chemical needed by the body to make thyroid hormones. Most of the stable iodine in our bodies comes from the food we eat. KI is stable iodine in a medicine form.

What does KI do?

If radioactive iodine is released into the air after a radiological or nuclear event it can be breathed into the lungs. In most cases, once radioactive iodine has entered the body, the thyroid gland quickly absorbs it. After it has been absorbed into the thyroid gland, radioactive iodine can then cause thyroid gland injury. Because KI acts to block radioactive iodine from being taken into the thyroid gland, it can help protect this gland from injury.

It is also important to know what KI cannot do. KI cannot protect parts of the body other than the thyroid from radioactive iodine. KI cannot protect the body from any radioactive elements other than iodine. If radioactive iodine is not present, then taking KI is not protective.

How does KI work?

The thyroid gland cannot tell the difference between stable and radioactive iodine and will absorb both. KI works by blocking radioactive iodine from entering the thyroid. When a person takes KI, the stable iodine in the medicine gets absorbed by the thyroid. There is so much stable iodine in the KI that the thyroid gland becomes “full” and cannot absorb any more iodine—either stable or radioactive—for the next 24 hours.

How well does KI work?

It is important to know that KI may not give a person 100% protection against radioactive iodine. How well KI blocks radioactive iodine depends on:

- How much time passes between contamination with radioactive iodine and taking KI (the sooner a person takes KI after being exposed to radioactive iodine, the better),
- How fast KI is absorbed into the blood, and

- The total amount of radioactive iodine to which a person is exposed.

A single dose of KI protects the thyroid gland for 24 hours. **Taking a higher dose of KI, or taking KI more often than recommended, does not offer more protection and can cause severe illness or death.**

Medical conditions that may make it harmful to take KI

It may be harmful for some people to take KI because of the high levels of iodine in this medicine. You should not take KI if:

- You know you are allergic to iodine (If you are unsure about this, consult your doctor. A seafood or shellfish allergy does not necessarily mean that you are allergic to iodine.) OR
- You have certain skin disorders (such as dermatitis herpetiformis or urticaria vasculitis).

When should I take KI?

After a radiological or nuclear event in the United States, local public health or emergency management officials will tell the public if there is a need to take KI or other protective actions. **After an event in the US, you should follow the instructions given to you by these local authorities.**