

# Potassium Iodide (KI) Prophylaxis

## Answers to Frequently Asked Questions

### What is potassium iodide?

Potassium iodide (also called KI) is a salt of stable iodine. Stable iodine is an important chemical needed by the body to make thyroid hormones and 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. This can cause damage to the thyroid gland.

KI works by blocking radioactive iodine from entering the thyroid. The thyroid gland cannot tell the difference between stable and radioactive iodine and will absorb both. 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.

### What doesn't KI 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.



[Click to watch the video "How does KI Work?"](#)

Or scan the QR code below with your smartphone



### 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 exposure to radioactive iodine and taking KI (the sooner a person takes KI 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.**

### Who can take KI?

#### Infants (including breast-fed infants)

Infants have the highest risk of getting thyroid cancer after being exposed to radioactive iodine.

Infants (particularly newborns) should receive a single dose of KI. More than a single dose may lead to problems with normal development later.

#### Children (1 year to 17 years)

The U.S. Food and Drug Administration (FDA) recommends that all children exposed to radioactive iodine take KI, unless they have known allergies to iodine.

#### Young Adults (18 years to 40 years)

The FDA recommends that young adults exposed to radioactive iodine take the recommended dose of KI. Young adults are less sensitive to the effects of radioactive iodine than are children.

## **Pregnant Women**

Because all forms of iodine cross the placenta, pregnant women should take KI to protect the growing fetus. Pregnant women should take only one dose of KI following exposure to radioactive iodine.

## **Breastfeeding Women**

Women who are breastfeeding should take only one dose of KI if they have been exposed to radioactive iodine.

## **Adults (40 years+)**

Adults older than 40 years have the lowest chance of developing thyroid cancer or thyroid injury after exposure to radioactive iodine.

Adults older than 40 are more likely to have allergic reactions to or adverse effects from KI.

## **Who shouldn't take KI?**

It may be harmful for some people to take KI. You should not take KI if:

- You know you are allergic to iodine.
- You have certain skin disorders (such as dermatitis herpetiformis or urticaria vasculitis).
- You have nodular thyroid disease with heart disease.

## **When should I take KI?**

After a radiological or nuclear event, local public health or emergency management officials will tell the public if there is a need to take KI or other protective actions.

If you have any concerns about KI, using KI, or its possible health effects, contact your physician.

## **References**

Centers for Disease Control and Prevention.  
Potassium Iodide (KI)  
<http://emergency.cdc.gov/radiation/ki.asp>

Oak Ridge Institute for Science and Education.  
How Does KI Work?  
[https://www.youtube.com/watch?feature=player\\_embedded&v=AEz1gJoKI9Y](https://www.youtube.com/watch?feature=player_embedded&v=AEz1gJoKI9Y)

US Food and Drug Administration. Guidance: Potassium Iodide as a Thyroid Blocking Agent in Radiation Emergencies.

<https://www.fda.gov/downloads/Drugs/GuidanceComplianceRegulatoryInformation/Guidances/ucm080542.pdf>

## **Where can I get additional information?**

Ohio Department of Health  
Bureau of Environmental Health and Radiation Protection  
Radiological Health and Safety Section  
246 North High Street  
Columbus, OH 43215

(614) 644-2727

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