

Potassium Iodide (KI)

Frequently Asked Questions

What is KI?

KI is a salt of stable iodine. Stable iodine is an essential nutrient needed in very small quantities for the thyroid gland to function properly. KI comes in tablet form and can be easily swallowed.

How does KI work?

When swallowed just prior to or shortly after exposure to radioactive iodine, KI fills up the thyroid with stable iodine so it cannot absorb any other iodine for a period of time. This prevents the thyroid from absorbing harmful amounts of radioactive iodine so that the radioactive iodine will not accumulate, and the body will naturally excrete it. This process is also called iodine thyroid blocking.

The thyroid gland does not know the difference between non-radioactive (stable) and radioactive iodine and can absorb both. Absorption of harmful levels of radioactive iodine can increase the risk of thyroid cancer later in life, especially in children.

Does KI protect against all forms of radiation?

No. KI provides protection only to the thyroid gland and only against internal contamination from radioactive iodine. Radioactive iodine may be found in emissions from a nuclear generating plant during an accident. KI will not protect against exposure to other contaminants contained in those emissions.

When should I take KI and how will I know to take it?

If possible, KI should be taken before exposure to radioactive iodine during a nuclear emergency. The optimum time is two to six hours earlier. If that is not possible, KI should be taken as soon as possible after first exposure, ideally within three hours. There is no benefit to taking KI if there has been a 24-hour delay.

If there is a threat of a significant exposure to radioactive iodine from a nuclear power facility during an accident, the Chief Medical Officer of Health for Ontario will provide instructions through radio, TV, Internet and other available channels on where, when, how, and by whom KI should be taken.

KI is only to be used during an emergency situation at a nuclear generating station.

KI is only to be taken when instructed to do so by provincial authorities.

Who benefits most from taking KI?

Pregnant and breastfeeding women, infants, children and adolescents should be among the first to receive KI as they are at higher risk for developing thyroid cancer after exposure to radioactive iodine.

How many KI tablets should be taken and how often?

People who are at risk from exposure to radioactive iodine may be directed by provincial authorities to repeat dosage every 24 hours for the duration of the exposure and/or until it is possible to evacuate.

Unless otherwise instructed, pregnant and breastfeeding women and newborn babies should take only one single dose of KI and not repeat dosages.

The dosages that follow are consistent with Health Canada and World Health Organization recommendations. Larger doses than those indicated have no additional benefit and may increase the risk of side effects.

Age Group	Potassium Iodide (KI) Dose (mg)	# of 65mg tablets
Adults (18 years+) including pregnant and breastfeeding women ¹	130	2
Adolescents (12-18 years) ²	65	1
Children (3-12 years)	65	1
Infants (1 month-3 years)	32	1/2
Newborns (<1 month) ¹	16	KI Liquid Solution ³

- ¹Pregnant or breastfeeding women and newborns should take only one single dose of KI
- ²Adolescents approaching adult size (over 150lbs/70kg) should receive the full adult dose (130mg)
- ³See "Preparation of a KI Liquid Solution"

What if I have a family member who cannot swallow a KI tablet?

People unable to swallow a KI tablet, and children under three years of age will require a KI liquid solution.

What about my pets?

The KI tablets being provided are only approved by Health Canada for use in humans. If you are concerned about your pets, speak to your veterinarian for advice.

Wouldn't a nuclear emergency happen too quickly to respond?

No, in the very unlikely event of a radioactive release, it would take many hours and days to unfold. There would be time to respond to emergency instructions.

How long are KI tablets good for? How should they be stored?

The expiry date is printed on the label of the KI packaging. The KI tablets should be kept sealed at room temperature and away from the light.

Are there any side effects from taking KI?

The risk of side effects from taking a dose of KI is extremely low for all age groups who have normal thyroid function. The overall benefit during a nuclear emergency outweighs the risks of side effects.

There is an increased risk of side effects for people with thyroid disorders i.e., autoimmune thyroiditis, Graves' disease, iodine deficiency, and nodular goiter. These disorders are more common in adults and the elderly, and are rare in children.

Rare side effects in other parts of the body, such as gastrointestinal effects or hypersensitivity reaction, may occur but are generally mild. People who are sensitive to iodine or who have an existing or previous thyroid disorder or any other concerns should consult their doctor or nurse practitioner prior to taking KI.

Who should NOT take KI?

People should discuss with their doctor if they have any of the following disorders:

- Hypersensitivity to iodine. This is a very rare disorder that should not be confused with more common hypersensitivity to contrast agents which contain iodine used in certain radiological examinations. A seafood or shellfish allergy does not necessarily mean that you are allergic or hypersensitive to iodine.
- Dermatitis herpetiformis (a chronic skin condition)
- Hypocomplementaemic vasculitis (an uncommon inflammation of the vascular walls, which can occur in certain immunological disorders)
- Myotonia congenita (extremely rare congenital defect involving muscle stiffness).

Why don't I qualify for KI?

KI is offered to those that are within 80km of a US nuclear facility. It is important to note that KI is not a 'magic pill' that protects against all threats. The order to take KI will always be accompanied by other orders, such as evacuation. If you live outside the 80km zones and wish to have KI in your home, it is available for purchase at www.kicanada.com or some other online retailers like Amazon.

I live outside the eligible zone but work/volunteer/go to school inside the zone. Can I get tablets for work/volunteering/school?

KI tablets are only being offered to eligible addresses in the affected zones. If you work/volunteer or go to school in the zone, speak to your employer or person in charge about carrying a stock for all employees/volunteers/students.

Preparation of a Potassium Iodide (KI) Liquid Solution

People who are unable to swallow a KI tablet and children under three years of age will require a KI liquid solution. See the instructions for preparing the KI liquid solution below.

To make the KI Liquid Solution, you will need:

- Two 65mg KI tablets
- Teaspoon
- Small Bowl
- 4 Teaspoons of water
- 4 Teaspoons of a drink, i.e. milk, chocolate milk, orange juice, breastmilk etc.

Directions for making KI Liquid Solution:

1. Soften the KI tablets: Put two 65mg KI tablets into a small bowl. Add 4 teaspoons of water. Soak the tablets for one minute.
2. Crush the softened KI tablets: Use the back of a teaspoon to crush the tablets in the water. At the end of this step, there should not be any large pieces of KI. This makes the KI and water mixture.
3. Add a drink to the KI and water mixture: Choose a drink from the list above. Mix 4 teaspoons of the desired drink with KI and water mixture made in Step 2. Adding the desired drink makes the final KI solution.

4. Give the right amount of the final KI solution, using the chart below.

Age	Once daily dose of KI Solution
19 years or older	8 teaspoons (40ml)
13-18 years (over 150lbs/70kg)	8 teaspoons (40ml)
13-18 years (under 150lbs/70kg)	4 teaspoons (20ml)
4-12 years	4 teaspoons (20ml)
Over 1 month through 3 years	2 teaspoons (10ml)
An infant from birth through 1 month*	1 teaspoon (5ml)

*This is the amount to give for one dose. Infants less than 1 month of age should receive only one single dose

Storage of Prepared KI Mixture

KI mixtures keep for up to seven days in the refrigerator. Discard unused portions.