



ETA Public Health Board Statement

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Nuclear emergency: Information and recommendations for the general population and patients with thyroid disease

Due to peoples', and particularly thyroid patients', increasing alarm as to the risk of a nuclear emergency, the European Thyroid Association Public Health Board, considers it necessary to issue a reminder concerning the guidelines on the use of potassium iodide (KI) tablets to protect the thyroid from radioactive iodine. Patients with treated thyroid disease should follow the same recommendations given to the general population. On the other hand, they should consult their physician so that their treatment may be adapted to the circumstances.

Nuclear accidents release radioactive iodine into the atmosphere, which can be absorbed by the thyroid, increasing the risk of developing thyroid cancer. Babies and young children are at the highest risk, along with expectant mothers. Consequently, the target population for KI tablets is very young and pregnant women. The risk of thyroid cancer due to radiation exposure is much lower for persons over 40 years. KI administration protects the thyroid only from radioactive iodine and not from other radioactive substances or external radiation. This is why ingesting KI tablets should be accompanied by other protective measures, such as confinement (staying inside a building with doors and windows closed) and avoiding food and vegetables from contaminated regions.

Even when a nuclear emergency occurs, KI administration is required **ONLY** when it is recommended by the local authorities. With regard to KI intake, timing is crucial since the tablets are effective for only 24 hours. Ideally and as is the case in many countries, a

population living near a nuclear power plant at large should have KI tablets at home. There are, in addition, regulatory guidelines for authority storage in e.g., schools, fire departments, and other public places for distribution to the local population.

Inadequate iodine intake from the daily diet is an issue in some population groups in many European countries, as pointed out by the Iodine Global Network and other organizations. In such conditions of low iodine intake, radioactive iodine uptake by the thyroid increases. Regarding children, the risk of thyroid cancer maybe two to three times higher among those who are iodine-deficient as compared to children living in areas where iodine intake is adequate. Optimal iodine intake will not avert the need for KI administration, but may to some extent protect those who have not received KI.

We also wish to warn against unauthorized intake of KI, particularly in areas with long-term low iodine intake and among patients with nodular goiters, who are liable to serious adverse effects through KI intake, such as thyrotoxicosis (e.g., as seen after iodine contrast investigations). The intake should therefore also, for this reason, be limited to absolutely necessary protective measures indicated by the authorities

WHO SHOULD TAKE (EMERGENCY) KI TABLETS?

- ❖ Once the competent authorities have confirmed the need for KI tablets, children and pregnant women should take the recommended KI dose. Adults under 40 years are at lower risk but still may benefit from KI intake.
- ❖ In addition to KI, other protective measures are usually necessary, such as confinement (staying inside a building with doors and windows closed) and avoiding the ingestion of contaminated food and drink (water, milk).
- ❖ In most cases, only one KI tablet will be sufficient.
- ❖ Patients with thyroid disease should follow the same recommendations given to the general population. They should seek medical advice when the emergency phase is over.

WHAT ARE THE RECOMMENDED KI DOSES

AGE _____	DOSE
0 – 1 months	6 mg
1 month – 3 years	32 mg
3 – 12 years	65 mg
>12 years	130 mg

KI 130 mg is equivalent to 100 mg iodine and the recommended dose is in agreement with the WHO recommendation.

HOW TO TAKE KI TABLETS

- ❖ Dissolve the KI tablet in a small amount of water, then add this to a drink (juice, milk, water).
- ❖ For babies and children up to 2 years of age, the KI tablet needs to be crushed. The powder is dissolved in a small amount of lukewarm liquid, then additional liquid is added, for example, (breast) milk. The powder can alternatively be added to the child's meal.
- ❖ The resulting solution cannot be stored and must be taken immediately.

March 2022