

TERRORISM AND NUCLEAR REACTORS: POTASSIUM IODIDE

- One of the largest immediate public health threats in the event of a large release of radiation from the reactor core is radioactive iodine, which causes damage and often cancer to the thyroid.
- Iodine concentrates in the thyroid where the internal dose of radiation from inhaled or ingested radioiodine is magnified.
- The largest observed health consequence of the Chernobyl disaster (measured in terms of people affected) has been a dramatic increase in the incidence of thyroid cancer among children exposed to radioactive iodine (mostly in the form ^{131}I). As many as 2,000 people exposed have already developed thyroid cancer, and the United Nations estimates another 8,000 to 10,000 cases over the next 10 years.
- Although radiation-induced thyroid cancer does not usually result in death, it is still a serious disease requiring lifelong hormone-replacement therapy. A significant number of thyroid cancer patients also develop potentially serious complications.
- Thyroid damage and cancer can be prevented by the use of stable iodine in the form of the salt potassium iodide (KI).
- KI saturates the thyroid with stable iodine and blocks the gland's uptake of radioiodine.
- When administered properly, KI has a high degree of success in preventing thyroid cancers among children.
- In the aftermath of the Chernobyl accident, KI was distributed over a wide area of Poland with a low incidence of side effects (mild gastrointestinal distress or rash). Those with known sensitivity to iodine should avoid taking KI, because they may suffer an allergic reaction.
- KI is most effective in blocking the uptake of radioactive iodine when administered shortly before exposure and with reduced effectiveness within a few hours afterward.
- Both the Food and Drug Administration, and World Health Organization recommend that KI administration be included in emergency planning along with evacuation, sheltering, and food control in the event of a large radioactive release.
- KI only protects against the health effects of radiation from radioactive iodine. It is to be used in conjunction with evacuation, sheltering, and/or other emergency procedures to prevent adverse effects from exposure to other harmful isotopes such as ^{137}Cs (cesium-137).
- The Nuclear Regulatory Commission has offered states with or near nuclear power plants KI for residents within a 10-mile radius of a reactor. New Jersey has accepted this offer, but a final decision on stockpiling or distribution has not yet been made.



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