Source: Excerpt From KI4U Article

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Q: What About Potassium Iodate (KIO3)?

A: Potassium Iodate (KIO3), offered in an 85 mg tablet (200 tablets to a bottle), is the ‘cousin’ of Potassium Iodide (KI). This is the ‘new kid on the block’ commercially offered here in the U.S. for preventative thyroid blocking of radioiodine. With its extra molecule of oxygen, making it KIO3, its U.S. manufacturer, Medical Corps, claims it is/has...

- extended shelf life
- no bitter taste
- cheaper per dose

KIO3 has an iodine content of 60%, so two 85 mg tablets (170 mg total, one adult dose) works out to 103 mg of available iodine. (That's very similar to Potassium Iodide (KI), with its iodine content of 76.5%, to where each 130 mg tablet of Potassium Iodide (KI) has 99.45 mg of iodine available.)
The recently updated 1999 World Health Organization: Guidelines for Iodine Prophylaxis following Nuclear Accidents shows both Potassium iodide (KI) and KIO3 as equals in regards to their bioavailability of stable iodine.

Regarding the extended KIO3 shelf-life; it is more stable as KIO3 is non-hygroscopic (very stable in humid air) where Potassium iodide (KI) will readily dissolve in water. However, to put this into perspective, Potassium iodide (KI) tablets sealed in their original packaging have also been tested, many years after it was manufactured and 'expired', and found to be quite stable and maintaining full strength. See Potassium iodide (KI) stability report below here. Additionally, the recently updated 1999 World Health Organization: Guidelines for Iodine Prophylaxis following Nuclear Accidents states: "There is no decisive difference in shelf life between KIO3 and KI."

Regarding the lack of a bitter taste; this is quite true, you can actually chew these tablets as they have no taste at all. However, the tablet forms of Potassium iodide (KI) offered by two of the other sources for it are actually quite small, like sublingual nitro pills. For most adults, they should go down quite readily and offer no problems. (Note: The newer Potassium iodide (KI) tablet, from KI4U™ is actually coated to assure no bitterness taste.) However, if even the thought of having to swallow a pill (regardless of the size) is a challenge, and it is for some, this might be a more important feature.

More importantly, though, because the KIO3 formulation (and KI4U™ KI) requires the taking of two tablets for a complete adult daily dose, children then can more easily be correctly dosed, too, as they will always require less than a full adult dose.

For instance, children age 3-12, who require exactly half of an adult dose, can simply take one single/whole tablet of KIO3 (or KI4U™ brand of KI) for their required full daily dose. In comparison, the Potassium iodide (KI) tablets offered by two of the formulations, where their single tablet is a full adult dose, dosing children would thus require effectively splitting, and sometimes even quartering or eighthing those already tiny tablets and they are also quite bitter. That would certainly make it much harder to quickly and properly dose children, who are always at the greatest risk from radioiodine, both from accurately attaining the proper dose amount and then the need to mask or dilute the bitterness. Especially when everyone concerned would likely be in a very stressful and urgent emergency situation.

Regarding the reduced per dose cost; KIO3, as offered and priced by its manufacturer, is clearly competitive with the available Potassium iodide (KI) tablets current pricing.
Labeled dosing recommendations for the new Medical Corps KIO3, 200 tablets per bottle (85 mg tablets), closely mirrors the most recent 1999 World Health Organization: *Guidelines for Iodine Prophylaxis following Nuclear Accidents* and are as follows:

- **Adults, and Children over 12 years of age:**
  - Take: 2 tablets per day for 15 days (minimum) to 85 days

- **Children 3 years to 12 years:**
  - Take: 1 tablet per day for 15 days (minimum) to 85 days

- **Babies 1 month to 3 years**
  - Take: 1 tablet per day for 15 days (minimum) to 85 days

- **Newborns to 1 month:**
  - Take: 1/2 tablet per day for 15 days (minimum) to 85 days

- **Pets:**
  - **Large Dog**-- 1-2 tablets per day
  - **Medium Dog**-- 1/2 to 1 tablet per day
  - **Cats**-- 1/4 to 1 tablet per day

We are continuing our research into KIO3 and have learned that a number of other countries have been stockpiling it for nuclear emergencies. Among those we've been able to confirm are the United Kingdom and South Africa, where they both utilize KIO3 for protecting their populations surrounding their nuclear power plants.

Information request to the United Kingdom National Radiological Protection Board produced this reply (11/11/99) from Frances A. Fry, Division Head, NRPB:

> *Potassium iodate tablets are manufactured in the UK by Cambridge Laboratories. Most of the production is held by the nuclear industry for emergencies. A small amount is sold to hospitals. Some is retained by Cambridge Laboratories.*

> *The use of potassium iodate, rather than iodide, was current practice in the UK. A UK working group on iodine prophylaxis following nuclear accidents concluded that there was no obvious benefit of potassium iodide over potassium iodate. Reference: Department of Health, Report on Health and Social subjects 39, Nuclear Accident Countermeasures: Iodine Prophylaxis, 1991.*

Another information request to the Australian Nuclear Science and Technology Organization (ANSTO) was an inquiry into their preference for having acquired potassium iodide over iodate in 1999. The response from Brian Holland, Senior Health Physicist at ANSTO on Mon, 8 Nov 1999 was:
The choice of potassium iodide or iodate was made purely on a cost basis, iodide was significantly cheaper than iodate. The important fact is that the stable iodine content of both tablets is the same (100mg). The only information I have regarding a difference in the two forms is the storage life. As TGA do not seem to like more than 5 years for an expiry date this did not seem important.

The 'TGA' referenced above is the Australian government Therapeutic Goods Administration, their version of the U.S. FDA. Also, it should be noted, the potassium iodate tablet source they were considering was not the U.S. manufactured, or priced, Medical Corps brand.

Because KIO3 is new to the U.S. market for this application, compared to Potassium Iodide (KI), we eagerly invite additional submissions of any resources, reports, or authoritative quotes, regarding KIO3 use for radiation protection. We will promptly post, or link to, them all here in this new Potassium Iodate (KIO3) section.

Q: How Do You Make a Potassium Iodide (KI) Solution?

A: Prepared Potassium Iodide (KI) solutions are only available by prescription, such as Lugol's Solution. However, anyone can buy Potassium Iodide USP at a chemical supply house (and even some larger photo supply outlets) and readily mix up their own Potassium Iodide (KI) solutions that is every bit as effective as the tablets. Also, we were recently reminded by a science teacher, that every town in America likely has a ready and waiting supply of KI sitting in their high school science labs that could protect hundreds of their students and local residents! A single 500 gram bottle of KI, now already on many of their shelves, could provide 3,846 adult daily doses or 7,692 child (age 3–12) thyroid-blocking doses! Community leaders need to pull together their resourceful science teachers, local pharmacists and doctors to fully explore the resources already at hand and available for any future nuclear emergency that might befall their locale. You might could be responsible for saving many in your community from future thyroid cancer by simply bringing this to the attention of your local officials, science teachers, pharmacists and doctors!

There are two kinds of Potassium Iodide (KI) solutions that can be made. Saturated and anything less than saturated.

With a saturated Potassium Iodide (KI) solution you are adding a little more Potassium Iodide (KI) to a fixed amount of water until some of the crystals or granules will not dissolve. They will be visible at the bottom of the solution, even after vigorous mixing. The solution is now considered saturated when it won't take up and dissolve any more Potassium Iodide (KI).

From Cresson H. Kearny, the author of Nuclear War Survival Skills by Oak Ridge National Laboratory, states on page 114:
"To prepare a saturated solution of potassium iodide, fill a bottle about 60% full of crystalline or granular potassium iodide. (A 2-fluid-ounce bottle, made of dark glass and having a solid, non-metallic, screwcap top, is a good size for a family. About 2 ounces of crystalline or granular potassium iodide is needed to fill a 2-fluid-ounce bottle about 60% full.) Next, pour safe, room-temperature water into the bottle until it is about 90% full. Then close the bottle tightly and shake it vigorously for at least 2 minutes. Some of the solid potassium iodide should remain permanently undissolved at the bottom of the bottle; this is proof that the solution is saturated.

Experiments with a variety of ordinary household medicine droppers determined that 1 drop of a saturated solution of potassium iodide contains from 28 to 36 mg of potassium iodide."

Two ounces of granulated Potassium Iodide (KI), mentioned above, is about 56.7 grams.
Also, from the above, an adult would be wanting four drops of the saturated solution as an expedient dosage. This would amount to between 112 to 144 mg of Potassium Iodide (KI) total. Remember, 130 mg of KI is an adult daily dose and half that (65 mg) is a child (age 3-12) daily dose.

Less than saturated Potassium Iodide (KI) solutions, when properly mixed, should give even more accurate dosages because there is more solution overall to be measured out per dose. For example, mixing and dissolving exactly 26 grams of Potassium Iodide USP into a one liter bottle of water, for example, produces 1000 ml of Potassium Iodide solution with a strength of 130 mg for each 5 ml of that Potassium Iodide (KI) solution. There are 200 of those 5 ml servings in that 1000 ml (1 liter). 5 ml can be easily and accurately measured out with a common graduated medicine dropper. 5 ml is also equal to one measuring teaspoon.

Following the above formula, you could make up most any size and/or strength Potassium Iodide (KI) solution needed with accurate scales and enough bulk Potassium Iodide (KI).

Also, Stanley L. Rapaport, M.D. shared with me (2/15/03) that he has been trying to point this out to the Surgeon General, Homeland Security, and Armed Forces Surgeon Generals. If the government bought KI in bulk, which then is not very expensive and would work out to about .01 cents per child dose, an easy distribution program could be at the ready in every community in the nation! As Dr. Rapaport explains;

"Bulk purchases must be repackaged from 100# to appropriate sized packages depending on city size and proposed stockpile locations. There are 3492 adult doses per pound or 6984 children’s doses per pound.

Stored in appropriate location viz. pharmacies, fire or police stations."
Made up into a solution of 130mg per 5cc. (1 pound of Potassium Iodide to 17.5 liters of water) gives a solution where one teaspoonful equals one adult dose, 1/2 teaspoonful equals a children's dose and so forth as per schedule below.

Dispensed from appropriate sites including the hospital, parking lots, drive bys, etc. in any container as is very stable. Paper cups, drink bottles, with dosage directions.

Taken for ten days (even one dose is markedly effective) or as directed via appropriate authorities. Solution is somewhat unpleasant and can be masked by honey, syrup, soft drink, additional water, etc.

The solution as made up is equal to 130mg per 5cc (1 teaspoonful)
Adult dose is 1 teaspoonful
Ages 3-18 1/2 teaspoonful
Ages 1 month to 3 years 1/4 teaspoonful
Age 1 month or less 1/8 teaspoonful

* Since this was first written in 2003, the FDA doses for children has changed slightly to the following...

Children over 12 years to 18 years: 5ml or 1 teaspoonful every day (130 mg) who weigh at least 150 pounds

Children over 12 years to 18 years: 2.5ml or 1/2 teaspoonful every day (65 mg) who weigh less than 150 pounds

Children over 3 years to 12 years: 2.5ml or 1/2 teaspoonful every day (65 mg)

Children over 1 month to 3 years: 1.25ml or 1/4 teaspoonful every day (32.5 mg)

Babies at birth to 1 month: 0.625ml or 1/8 teaspoonful every day (16.25 mg)

Pregnant or breastfeeding women, or babies under 1 month of age:

Take as directed above and call a doctor as soon as possible. Repeat dosing should be avoided. It is recommended that thyroid function be checked in babies less than 1 month of age that take KI. Women who are pregnant or breastfeeding should also be checked by a doctor if repeat dosing is necessary. Although these precautions should be taken, the benefits of short-term use of KI to block uptake of
radioactive iodine by the thyroid gland far exceed its chances of side
effects.

As Dr. Rapaport details above, this is all too easy to have in-place and ready to go, and
rightly deserves serious consideration by our government officials tasked with
safeguarding public health at all levels; federal, state, and municipal.

Remember, regardless of what kind of Potassium Iodide (KI) solution might be utilized,
Potassium Iodide (KI) is very bitter. You must always then mix that dose (whether 4
drops saturated or 5 ml from the above formula) into another glass of juice, milk, or, at
least, water to dilute it further before drinking.

As with the Potassium Iodide (KI) tablets... NEVER TAKE ANY MEDICINE OR DRUG
WITHOUT FIRST CONSULTING YOUR PERSONAL PHYSICIAN! YOU COULD HAVE
ALLERGIES, OTHER MEDICAL CONDITIONS, OR REACTIONS TO OTHER
MEDICATIONS YOU ARE TAKING, THAT COULD BE VERY DANGEROUS OR LIFE
THREATENING! ASK YOUR DOCTOR NOW, BEFORE A NUCLEAR EMERGENCY,
AND THEN YOU'LL KNOW IF/WHEN IT'S NEEDED! (That's just part of being truly
prepared, getting that assurance now while you still can!)

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(WARNING: Iodine is NEVER to be ingested or swallowed, it is poison to
drink.)

There are two kinds of Potassium Iodide (KI) solutions that can be made. Saturated and anything less than saturated, and both of these two simple formulas and dosing recommendations, along with more details, are at the Potassium Iodide Anti-Radiation Pill FAQ at the Q&A section entitled: How Do You Make a Potassium Iodide (KI) Solution?

While it is poisonous to ingest (drink/swallow) elemental iodine, like what's in tincture of iodine, or Povidone-iodine solutions (like the Betadine brand solution), besides being largely ineffective for thyroid-blocking and very dangerous, perhaps even fatal to have a child drink any of them, they can be used topically, on the skin to great effect.

There has been some research with both humans and dogs into topically (on the skin) applied Povidone-Iodine (10%) solution (such as Betadine or Povidex solutions), and also with tincture of iodine, to test the absorption rates of iodine directly, and safely, through the skin.

According to research by Health Physicist Ken Miller, Hershey Medical Center, using 24 healthy adult male subjects, an adult could get a blocking dose of stable iodine by painting 8 ml of a 2 percent tincture of Iodine on the
abdomen or forearm approximately 2 hours prior to I-131 contamination. The abstract of his study titled "Effectiveness of Skin Absorption of Tincture of I in Blocking Radioiodine from the Human Thyroid Gland" from Health Physics, June 1989, Vol. 56, No. 6, pages 911-914, states:

"Although there were large variations within each subject group in regard to serum-I levels and thyroid uptakes, the increase in serum-I concentration after topical-I application was effective in reducing the thyroid uptake of I131. The authors conclude that in the absence of KI, most humans would benefit from topical application of tincture of-I, and that in some the effectiveness would equal that of oral KI."

More details (and links to this research) on these topical applications (readily available at your local pharmacy) can be found at the Potassium Iodide Anti-Radiation Pill FAQ at the Q&A section entitled: Is Iodized Salt, Tincture of Iodine, Water Purification Tabs, or other Iodine Sources Effective?

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**Q: Long Term Stability of Stocked Potassium Iodide (KI)?**

**A:** Jerome A. Halperin, Executive Vice President-CEO of The United States Pharmacopeial Convention, Inc., wrote to the Chairman of the U.S. Nuclear Regulatory Commission on January 30, 1998 of a recent assay of 'expired' Potassium Iodide (KI) tablets.

The Thyro-Block Tablets (Potassium Iodide Tablets, USP, Lot T242N, Exp. November 89), after the USP Drug Research and Testing Laboratory analyzed samples, showed that approximately 11 years after their manufacture and eight years after their expiry date, the tablets assayed at 99.1% of the labeled content of potassium iodide. (This result was well within the rubric range of 92.5 to 107.5% required by the monograph.)

See the complete letter and laboratory reports here.

(Mr. J. Halperin should know what he is talking about. In 1979, while deputy director of the Bureau of Drugs of the Food and Drug Administration, he had directed the effort to get Potassium Iodide Solution, USP, manufactured and stockpiled in Harrisburg, Pennsylvania during the Three Mile Island incident!)

Also, in conversations with one of the largest Potassium Iodide manufacturers in the U.S., they shared that the shelf-life of their USP grade Potassium Iodide (KI), in their original factory drums, was 'indefinite', when kept dry and at room temperature or below. Furthermore, that the shelf-life of their USP grade Potassium Iodide (KI) dissolved into a water solution contained in a closed, dark colored, bottle at room temperature or below, was also 'indefinite'. It's expected that mandatory USP expiration dating will have them revising these downward some publicly, but the point is, properly stored, Potassium
Iodide (KI) is inherently very stable. (If you have a need to know the name of this manufacturer, write: webmaster@ki4u.com)

Both KI and KIO3 tablets can show some discoloration with age, temperature and humidity that will not affect their viability. KIO3 tablets will often turn slightly grey in color, and cellulose coated KI tablets will often have an orange surface discoloration that is only cosmetic while the underlying tablet, if you break one open, is still original white. Also, some of the cellulose coated KI tablets may stick together slightly and need to be shaken to be released.

**Q: How Much Personally Stocked Potassium Iodide (KI) is Enough?**

**A:** Unfortunately, there is no simple or standard response that could ever be applicable to all American families with their wide variety of concerns, locations, and situations. There are too many variables involved, both in the nature of the possible nuclear radiation threats and your particular family exposure to those threats.

From the following observations, tempered with your own knowledge and expectations, you'll have to try to arrive at a comfortable, prudent balance, tailored to your situation.

The currently available foil packaged and small bottled KI formulations both contain 14 Potassium Iodide (KI) adult dose tablets. The KI4U™ Potassium Iodide (KI) bottle contain 200 tablets (100 adult doses) per bottle.

For a single and 'simple' nuclear facility radiation emergency event where a gaseous or aerosol radiiodine plume is released, and the source is soon contained so as additional radiiodine contamination is not ongoing, and that released radiiodine is soon dispersed by the wind, then the FDA Potassium Iodide (KI) product insert statement "You will probably be told not to take the drug for more than 10 days." would be applicable. In fact, you may only need to take it for a couple days. That amount (10 days of tablets) would be available in any of the products mentioned above.

However, if the radiiodine is, instead, in the form of a particulate or fallout, not a quickly dispersing gas or aerosol, it will continue to be a threat via inhalation (dust) or ingestion (food, milk, etc.) there in the area it's deposited in. (However, aggressive interdiction of radiiodine contaminated food stuffs and milk will greatly minimize the ingestion route.)

That's why, while radiiodine has a short half-life of only eight days, health physicists have suggested that it could continue to be dangerous for up to as many as ten half-lives...80 days! Staying in, or not being able to get out of, that radiiodine fallout contaminated area will require more than the 14 day supply provided by some formulations.
It should be noted here that you may also be directed to try and evacuate the area altogether well before you exhaust your Potassium Iodide (KI) supplies, and you should do so immediately, if directed, both because of persistent radioiodine and the potential for other additional, and very dangerous, radioisotope fallout contaminations in that area.

The absolute minimum protection then, assuming successful evacuation in less than two weeks if needed or directed, would require stocking, at least, a two week supply per family member. Again, this is for the above scenario of a one-time ‘simple’ and brief nuclear facility radiation emergency event and your families safe exit to a non-contaminated location before exhausting your Potassium Iodide (KI) supplies, if required.

Preparing your family for future nuclear radiation emergencies will be based on your best perception of the possible and probable threats and nature of those nuclear radiation emergencies. You will have to gauge for yourself, and your family, the likely possibility for future nuclear radiation accidents, terrorism or war and your families potential exposure to radiation contamination, if/when it occurs.

You also have to make some assumptions regarding the likely nature of those possible future nuclear radiation emergencies from study of current events and reviewing past nuclear radiation emergencies and the governments response. Short term, single event, where the radioiodine is gaseous/aerosol and soon dispersed. Or, something bigger, possibly multiple events, nuclear terrorism and/or ongoing continuing new contaminations being unleashed.

Additionally, you have to assess the probable threat from nuclear war, either directed at the U.S. or, even more likely, fallout contamination originating from elsewhere in the world. Russia, China, North Korea, Pakistan, India, Iran, Israel, other Middle East countries, etc. where any of them are exchanging nuclear blasts with any of their neighbors could have the prevailing west-to-east trade winds carrying the resultant radioactive fallout here to our shores, too. (See Trans-Pacific Fallout.)

You'll have to decide whether that's an impossible scenario in your family’s lifetime, or not. And, prepare accordingly.

In light of all of the above, some civil defense experts recommend Americans should be stocking closer to 100 Potassium Iodide (KI) doses per family member. They are also cognizant of the fact that if we ever have need for these products in a nuclear emergency that they would immediately be in short supply for some time. Getting re-supplied, if you ever need to utilize your stock of Potassium Iodide (KI), could be difficult. Also, the probability goes up dramatically that if/when we do have a nuclear 'event' it will then be much more likely that additional subsequent 'events' will follow requiring the use again of your remaining supply, too.
With this in mind, some families’ nuclear radiation emergency preparations should include a bottle each of 100 doses of Potassium Iodide (KI) or KIO3 tablets for each family member. This would allow for the convenience of each adult member being able to keep some with them for initial and immediate use whenever and wherever they might be when a nuclear emergency is first declared or recognized. (Also, to give immediately to your children if/when you decide to go and retrieve them from school, etc.)

Also, for families where the funds are snug, they might also have stocked some of the less expensive granular Potassium Iodide USP for mixing a larger Potassium Iodide (KI) solution for the whole families use for the rest of the duration of the nuclear radiation emergency. (Thus also helping to save some of the remaining, and more expensive, Potassium Iodide (KI) or KIO3 tablets.)

Need to give thought here, too, to extended family, friends, neighbors, etc. Either stocking extra Potassium Iodide (KI) or KIO3 for them or advising them of their need to do so for themselves. It'll be hard not to help them all out, if needed, but it would be even better to have tried to awaken them to the need to get their own stock first!

**Bottom Line:** Everyone will have to decide for themselves, and their families, the possible and probable threats, their personal and families potential exposure to them, and their comfort level to rely solely on outside government solutions to their future nuclear radiation emergencies. It's not hype to state that it's unlikely you'll have too much --- when it's needed! Nor will you likely be able to easily get any more!

**Q: When Should I Take Potassium Iodide (KI)?**

**A:** The FDA potassium iodide [product insert](#) says:

"Potassium iodide should be taken as soon as possible after public health officials tell you. You should take one dose every 24 hours."

Also, from the Health Physics Journal, Volume 78 No. 6, June 2000, "EFFECTS OF TIME OF ADMINISTRATION AND DIETARY IODINE LEVELS ON POTASSIUM IODIDE (KI) BLOCKADE OF THYROID IRRADIATION BY 131-I FROM RADIOACTIVE FALLOUT" Pat B. Zanzonico and David V. Becker (Read abstract by searching title at [Health Physics Journal](#)):

"KI administered up to 48 h before 131-I exposure can almost completely block thyroid uptake and therefore greatly reduce the thyroid absorbed dose. However, KI administration 96 h or more before 131-I exposure has no significant protective effect. In contrast, KI administration after exposure to radiiodine induces a smaller and rapidly decreasing blockade effect. KI administration 16 h or later after 131-I exposure will have little effect on thyroid uptake and absorbed dose and therefore little or no protective effect."
Regarding Nuclear Power Plant Radiation Emergencies:

You might also want to leave yourself the option to discover, learn, and be vigilant for other pending nuclear power plant emergency warning signs to act upon, even before public declarations. For instance, if you have a nuclear plant near you, you probably already know somebody (or at least they know somebody that knows somebody) that works there. Talk to them, ask them how they plan to have their own families get a quick and prompt 'heads-up' if something starts happening. You might even ask to get on their phone list of people to call, it certainly couldn't hurt to ask, and could be a life-saver!

Another opportunity to learn what others are doing locally to keep abreast of any future emergency situations developing at the plant is to seek out the local nuke 'concerned citizens' group. Regardless of their politics, and your affinity to them or not, they may be a great source of contacts, procedures and suggestions for monitoring and reporting on any potential future emergencies brewing inside the plant. (They may even have some simple Radio Shack™ scanner suggestions, like what the news reporters and crime watch folks use, for monitoring plant and local emergency communications yourself in an unfolding emergency.)

You may also have friends (or they may have friends) who are in law enforcement, local emergency/disaster coordinator's office, or other government or emergency services who would be on early call-up lists for any potential problems at the local nuclear plant. Seek them out, too. You may even find a volunteer branch for some of these public safety functions that you could participate in and thus be even closer to the inner circle getting a heads-up to pending news announcements before the general public.

If, by cultivating a network of 'early warning' contacts, you do get indications of a pending announcement of a nuclear emergency being publicly declared soon, then you'll be in the enviable position to immediately launch your families nuclear emergency response plan. Whether you then commence Potassium Iodide treatments for your family, before official public declarations to do so or not, at least you will have earned for them and yourself the opportunity to choose.

You need to be aware, though, that just because there is an 'alert', 'unusual event', 'site area emergency', or even 'general emergency' at a nuclear power plant does not
automatically mean that radioactive iodine will be released. You've got to strike the right balance of being alert, informed, and prepared to act.

For individuals not already cautioned not to use Potassium Iodide (KI) (such as those known to be allergic to Iodine, having a medical condition that forbids it, or currently taking another medication(s) that would adversely react with it) the downside of beginning Potassium Iodide (KI) treatment, when later revealed not to have been needed, is statistically minimal. (However, you should always consult your personal physician, well ahead of any potential need for it, to assure that you and your children are unlikely to encounter any problems using it. That’s just a part of being truly prepared!) You’ll have to balance your final decisions against the potentially deadly downside of not having started early enough to have saturated your thyroid, and your children's thyroids, with stable iodine to then avoid later uptake of a possible plume of radioactive iodine being carried in on the winds.

There are numerous incidents of nuclear power plant emergency releases of radioiodine that did not also have the public being immediately and effectively notified. You need to do what you can to network yourself into the nuclear plant emergency information loop, closer to the action, to be better assured of a prompt and informed notification.

This author was recently challenged by an employee of the NRC (speaking unofficially) suggesting it was 'somewhat irresponsible' to be recommending above here that people should be encouraged to try to attain information outside and beyond solely relying on the public warning systems and public notification procedures already in place. (Especially, didn’t like the suggestion of utilizing scanners, where people might could then be listening in on "...transmissions between workers at power plants and then drawn their own conclusions from these discussions.") Specifically because, this person stated: "...at each nuclear power plant, there is an emergency notification siren system to alert citizens to a general emergency condition at a nuclear power plant. local officials will be notified and will notify citizens."

This author responded:

"If I could be convinced, that at the onset of a nuclear power plant emergency, that no employee there with family downwind, would ever think to call home, but would instead rely on the sequence of public notifications above to unfold and alert their loved ones to evacuate, then I could delete that whole section."

And, of course, for nuclear terrorism here at home we need to employ all of the above relationship building with local police/fire/rescue authorities, second-tier contacts and communication tie-ins as we would for monitoring a nuclear power plants status. Anything that gets you news before it's public news could eventually prove to be lifesaving for your family.
Regarding Nuclear Explosions Radiation Emergencies:

There is a wealth of early warning nuclear explosion information here on this site at clear War Survival Skills Ch. 2: Warnings and Communications. It covers both strategic and tactical warnings and the effectiveness of in-place public warning systems. Beyond the obvious, it also details recognizable nuclear bomb effects, like bright lights, noise, and wide-spread electrical and communication failures that can alert you to the commencement of hostilities, even well away from your location, too.

Additionally, you should even try to cultivate contacts within the military similar to those you would establish above for early warnings of nuclear power plant emergencies. Once you start inquiring you might be pleasantly surprised to discover who knows who that knows somebody that might help you recognize a 'heads-up' coming or an heightened level of military alert.

And, of course, any close following of world-wide political and current events can reveal increased nuclear saber-rattling with a corresponding increased potential to break out into a nuclear exchange. You need to go beyond just the national media here in America and also explore the international overseas generated news sources. The BBC and some of the translated World News on satellite TV can give you unfiltered insights into what the governments in the Middle East, or China, Russia, Iran, and North Korea, etc. are telling their people is important to focus on. It's often insightful 'news' and glimpses of emerging trends that their peoples are being prepped for. It's also routinely overlooked and either delayed or 'missed' altogether by the general U.S. press.

Also, shortwave listening to worldband broadcasting and discerning use of the internet can connect you with important stories hours, days, and sometimes, even months, before the mainstream press 'discovers' and reports on it. And, often, even when they eventually do report on it, it is a brief overview that doesn't give it the treatment deserved nor adequately reveals the implications of that event or news item. This is especially true in the cases where foreign countries are increasingly belligerent to each other and no US concern or future involvement is readily obvious to report on.

We need to remember, too, that even nuclear war engaged in far from America, with the prevailing west-to-east trade winds, can carry the resultant radioactive fallout to our shores, too. (See Trans-Pacific Fallout.)

And, of course, for nuclear terrorism here at home we need to employ all of the above relationship building with local police/fire/rescue authorities, second-tier contacts and communication tie-ins as we would for monitoring a nuclear power plants status. Anything that gets you news before it's public news could eventually prove to be lifesaving for your family.

**Bottom Line:** While there may be much to be done in a developing nuclear emergency; evacuation or sheltering, you will also have the choice to commence your families Potassium Iodide protective treatments, early, when they can do the most good, if
you've been vigilant and observant of the potential around you for future nuclear threats, both here and abroad.

Q: For How Long Should I Take Potassium Iodide (KI)?

A: The FDA potassium iodide product insert says:

"You will probably be told not to take the drug for more than 10 days."

The reason for this cut-off date is the presumption that, in a nuclear power plant radiation accident, if the radioiodine was gaseous or an aerosol it would also probably be fully dispersed by this time. If it was not yet dispersed and/or there was ongoing continuing radioiodine releases, then the affected population would have likely been evacuated to a safer location well within that 10 day time frame.

However, it must be noted, that radioiodine can be present as a much more persistent fallout, rather than a quickly dispersing gas or aerosol. There are also many other very dangerous radioactive isotopes that can be released during a nuclear emergency for which immediate or subsequent evacuation could be declared, and should be immediately heeded, regardless of radioiodine presence.

So, for how long do you continue to daily take the Potassium Iodide (KI) or KIO3?

The newly released (November, 2001) FDA document entitled Potassium Iodide as a Thyroid Blocking Agent in Radiation Emergencies makes it plain that:

"For optimal prophylaxis, KI should therefore be dosed daily, until a risk of significant exposure to radioiodines by either inhalation or ingestion no longer exists."

Many others also believe that you should not stop until you have been, for at least a day or more, out of the possibility to ingest or inhale any more radioiodine. Either because its finally gone or you have gone out of the contaminated area to safer ground.

Why take any more Potassium Iodide (KI) or KIO3 at all, after getting safe? Because, even after you leave the contaminated area you could still be bringing some radioiodine with you...in your blood. While excess iodine, either stable or radioactive, will be quickly eliminated via the kidneys, you need to assure that your thyroid doesn't fall below fully saturated, until then. For this reason, you should strive to maintain a high blood level of stable iodine, with daily intakes of Potassium Iodide (KI) or KIO3, for at least another day.

Related to this topic, some experts reviewing the Chernobyl accident now feel that even much less than 130 mg Potassium Iodide (KI) daily dose works well to initially fill up and saturate the thyroid sufficiently. (FDA is also reviewing modifying its recommendations down to a much lower dose for children, too, though not for fewer expected total days, currently 10.)
Whether this is true, or not, a person might could go onto a reduced maintenance dosage, at some later stage, for a much longer extended period with a further reduced potential for any negative side effects, too. It should be repeated here, though, many thousands of people, for thyroid ailments, take more than twice the 130 mg Potassium Iodide (KI) dose daily and have for years. There is quite a bit of safe medical history for that particular application. (BTW, those thousands of thyroid patients, with their personal stocks of Potassium Iodide (KI), might could become pretty popular folks in their local neighborhoods, if word gets out during a nuclear emergency!)

**Bottom Line:** Regardless of our enthusiasm for Potassium Iodide (KI) and KIO3, and their extremely effective and safe track record, we must also say (according to legal eagles): The materials and information on this web site are intended for educational and informational purposes only. In no way should it be considered as offering medical advice. NEVER TAKE ANY MEDICINE OR DRUG WITHOUT FIRST CONSULTING YOUR PERSONAL PHYSICIAN! YOU COULD HAVE ALLERGIES, OTHER MEDICAL CONDITIONS, OR REACTIONS TO OTHER MEDICATIONS YOU ARE TAKING, THAT COULD BE VERY DANGEROUS OR LIFE THREATENING! ASK YOUR DOCTOR NOW, BEFORE A NUCLEAR EMERGENCY, AND THEN YOU'LL KNOW IF/WHEN IT'S NEEDED! (That's just part of being really prepared!)

**Q: Which Product To Choose & How Much To Stock?**

<table>
<thead>
<tr>
<th>Candid Product Evaluations by FAQ Author:</th>
</tr>
</thead>
<tbody>
<tr>
<td>With exploring here all the Potassium Iodide (KI) and Potassium Iodate (KIO3) formulations currently available on the market, and showing you the 'do it yourself' alternatives, too, we are often asked for our 'short answer' or personal opinion of what's really the best and how much should be acquired.</td>
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**Bottom Line:** Be assured that they all work, as all the formulations listed below here have the required 100mg Iodine for an adult dose and with similar bioavailability, and while the KI4U FAQ is lengthy in its exploration of the various potential scenarios requiring different strategies, and quantities of pre-stocked supplies, here's our most concise recommendations:

Acquiring some bulk Potassium Iodide (KI), to create a Potassium Iodide (KI) solution, is the cheapest per dose, but not everyone wants to fool with the mixing up of a Potassium Iodide (KI) solution. (Especially now with the introduction of the relatively cheap KI4U™ KI tablets.) However, even for those who will mix and use a Potassium Iodide (KI) solution, and we show how on the FAQ, we still strongly recommend they also acquire some tablets, too, both for their inherent portability and ease of immediate dosing upon the first alert of a nuclear emergency.

Among the KI tablet offerings, the KI4U™ KI is clearly the 'best buy', price-wise. More
importantly, though, because the KI4U™ formulation requires the taking of two tablets for a complete adult daily dose, we can then more easily dose our children, too, as they will always require less than a full adult dose. (Ease of quickly and accurately dosing children is essential as it's always our children who are at the greatest risk from radiiodine and its effects.)

For instance, children age 3-12, who require exactly half of an adult dose (see chart below), can simply take one single/whole tablet of KI4U™ for their required full daily dose. In comparison, the less popular Potassium Iodide (KI) tablets offered by others, where their single tablets are already full adult doses, dosing children with them would thus require effectively splitting and, for younger children, even quartering or 'eighthing' those already tiny tablets. And, they are also quite bitter, especially with powder fragments. (KI4U™ formulation would also require splitting of their coated tablets for children under the age of three down to one month olds.)

The 3X's more expensive one-tablet-per-adult dose formulations make it much harder to quickly and properly dose the majority of children, those who are between the ages of 3-12. Both, because of the difficulty of quickly and accurately attaining the proper dose amount and then the need to successfully dilute or mask the inherent bitterness of Potassium Iodide (KI) before it will ever be swallowed by a child.

This is especially important because that initial first dose is so time sensitive to get it into the bloodstream quickly upon that first alert. Consider, too, that most everyone concerned would also likely be under much stress in a very tense and urgent developing nuclear emergency. Perhaps, too, not even at home, but in your car, or elsewhere, at the time you first hear 'the news'.

Finally, to clear up any confusion between KI and KIO3, understand that...

- Both deliver the required 100mg of elemental iodine for an adult thyroid-blocking dose. (The tablet mg size of the KIO3 is always larger simply because it takes more KIO3 to deliver the same amount of iodine as is in less KI.)
- The 1999 World Health Organization 'Guidelines for Iodine Prophylaxis following Nuclear Accidents' shows both Potassium Iodide (KI) and Potassium Iodate (KIO3) as equals in regards to their bio-availability and efficient uptake of stable iodine for thyroid-blocking. That report also states: "There is no decisive difference in shelf life between KIO3 and KI."
- However, the FDA does not recognize KIO3 in its recently revised dosing guidelines and recommendations released in November 2001: 'Potassium Iodide as a Thyroid Blocking Agent in Radiation Emergencies', but only Potassium Iodide (KI).
- KI4U™ KI and typical KIO3 formulations contain 200 tablets sufficient for 100 adult daily doses, or 200 child (age 3-12) doses, etc.
- KIO3 is non-bitter and would require less masking and/or diluting to administer
partial tablets to children under the age of three.

Of course, either will work, and the choice is simply selecting whichever formulation you personally find most convenient, economical and currently available.

Dosing chart from the recently updated 1999 World Health Organization: 
**Guidelines for Iodine Prophylaxis following Nuclear Accidents**

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Mass of iodine mg</th>
<th>Mass of KI mg</th>
<th>Mass of KIO3 mg</th>
<th>Fraction of 100 mg Iodine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adults and adolescents (over 12 years)</td>
<td>100</td>
<td>130</td>
<td>170</td>
<td>1</td>
</tr>
<tr>
<td>Children (3-12 years)</td>
<td>50</td>
<td>65</td>
<td>85</td>
<td>1/2</td>
</tr>
<tr>
<td>Infants (1 month to 3 years)</td>
<td>25</td>
<td>32</td>
<td>42</td>
<td>1/4</td>
</tr>
<tr>
<td>Neonates (birth to 1 month)</td>
<td>12.5</td>
<td>16</td>
<td>21</td>
<td>1/8</td>
</tr>
</tbody>
</table>

Regarding 'how much to stock':
We recommend a minimum of at least 100 daily doses for every person you'll be ultimately responsible for protecting. That's one bottle of 100 doses per adult and one bottle for every two children under the age of 12. *(Only you can decide if that'll also need to include putting some extra aside for extended family, friends, and neighbors, too. It's unlikely you'll have too much --- when it's needed! Nor will you likely be able to easily get any more!)* - Shane Connor