

CDC Communications in a Nuclear Reactor Accident



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Radiation Disasters are Different

- **Radiation is:**
 - Invisible
 - Silent
 - Odorless
 - Can only be detected with specialized equipment
- **Radiation concepts, terms, and risks are poorly understood by the public**
 - Fear
 - Fatalism



Target Audience

- **Public**
- **Professionals**
 - **Public Health Professionals**
 - **Clinicians**
 - **First Responders**
 - **Emergency Managers**



Key Communications Goals

- Meet audience needs for information
- Bridge the gap between technical information and risk perception
- Describe radiation in ways that promote *responsible* public action



Information Needs in a Nuclear Reactor Accident

- **What should I do to protect myself, my family, and my pets?**
- **Should I take potassium iodide (KI)?**
- **Is the food/water/air safe?**
- **How do I know if I have been exposed to radiation?**
- **How do I seek treatment if I think I have been exposed to radiation?**
- **I am traveling to/from an area affected by a nuclear reactor accident...what should I do?**

CDC's Radiation Emergency Communications Research

- **Protective Action Messages: 2011**
- **Health Effects Messages: 2012**
- **Spanish Language Messages: 2013**
- **Radiation Emergency Infographics: 2013**

Messages and communications products were tested with the public for comprehension, believability, and ability to motivate desired actions

Key Findings: Message Development

- Give prioritized action items in each message.

“I’m more interested in what I can do now. When there’s an accident on the freeway, we’re told which route to take to get around it, not how the accident took place...”

- Create messages for different environments.

“If you are not at home, if you are at work now or at school here’s what you might do.”

Key Findings: Message Development

- **Make messages concise.**

“Time is valuable to deliver your message so you’ve got to make sure that you’re conveying as much helpful information as possible.”

- **Use plain, non-technical language.**

“When you have a disaster happen, you don’t want to have to read the dictionary. You want point blank this is what’s happening. This is what you should do.”

Commonly Misunderstood Radiation Terms

- Background radiation
- Contamination/Contaminant
- Detrimental health effects
- Dose
- In the path/Downwind
- Internal/external contamination
- Low/high radiation levels
- Potassium Iodide
- Protective actions
- Protective measures
- Radiation particles
- Radioactive material
- Rem/Sievert
- Responders
- Risk of exposure
- Sheltering/Shelter-in-Place

Key Findings: Message Delivery

- Radiation scientists are trusted sources of information.

“If your car had a problem, you’d take it to a mechanic. You want to go to the experts.”

- Message consistency across agencies and communications channels is critical

“If I’m confused, I’m not going to do it.”

Key Findings: Message Delivery

- Use Visuals and pictures

What should I do in a radiation emergency?



Key Findings: Message Delivery

- Infographics increase understanding
- 92% of online survey respondents found CDC's Nuclear Power Plant Accident Infographic easy to understand

"I loved that the picture included crops, animals, and water along with the human."

NUCLEAR POWER PLANT ACCIDENTS

Nuclear power plants have safety and security procedures in place and are closely monitored by the Nuclear Regulatory Commission (NRC). An accident at a nuclear power plant could release dangerous levels of radiation over an area (sometimes called a plume).



What are the main dangers of nuclear power plant accidents?

Radioactive materials in the plume from the nuclear power plant can settle and contaminate people who are outdoors, buildings, food, water, and livestock.



Radioactive materials can also get inside the body if people breathe it in, or eat or drink something that is contaminated.

People living close to the nuclear power plant who are exposed to radiation could experience long-term health effects such as cancer.

What should I do to protect myself during a nuclear power plant accident?

If you live near a nuclear power plant, you can get emergency information materials from the power company that operates your local nuclear power plant or your local emergency services office.



GET INSIDE



STAY INSIDE



STAY TUNED



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<http://emergency.cdc.gov/radiation>

Key Findings: Message Delivery

HOW POTASSIUM IODIDE (KI) WORKS

How does KI work?

The thyroid gland cannot tell the difference between non-radioactive and radioactive iodine. It will absorb both kinds.

KI works by keeping radioactive iodine out of the thyroid gland where it can cause damage. When a person takes KI, the thyroid absorbs the non-radioactive iodine in the medicine. Because KI contains so much non-radioactive iodine, the thyroid becomes "full" and cannot absorb any more iodine—either stable or radioactive—for the next 24 hours.

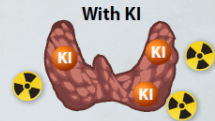
KI is a pill or liquid that can be used in radiation emergencies that involve radioactive iodine. KI contains non-radioactive iodine. Non-radioactive iodine helps prevent radioactive iodine from being absorbed by the thyroid gland.



Without KI



With KI



KI does not keep radioactive iodine from entering the body and cannot reverse the health effects caused by radioactive iodine once the thyroid gland is damaged.



Do not use table salt or food as a substitute for KI. Table salt and foods rich in iodine do not contain enough iodine to block radioactive iodine from getting into your thyroid gland. Too much table salt can be harmful.



Do not use dietary supplements that contain iodine in place of KI. Only use KI products that have been approved by the Food and Drug Administration (FDA).



Only take KI on the advice of a medical doctor, public health, or emergency management officials. Taking too much KI or taking KI when it is not recommended can have serious health risks.



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For more information about KI dosage and side effects visit <http://emergency.cdc.gov/radiation>

- CDC's Potassium Iodide Infographic covers three key questions:

- What is KI?
- How does it work?
- How do I know if I need it?

"The picture of the thyroid with and without KI explains the concept well"

"Simple and effective message"

Communication Channels

- Traditional Channels
 - Radiation Emergencies Website
 - CDC INFO phone number and email
 - TV and Radio
 - Training and support for state and local partners
- Social Media
 - Twitter
 - Facebook
 - Pinterest
 - Buttons/Badges
 - Content Syndication



Questions?

<http://emergency.cdc.gov/radiation>

For more information please contact Radiation Studies Branch, CDC

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The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

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