

Lesson: *Downwind: Radioactive Iodine-131*

Class Periods: 1-2

Date:

Objectives

- *Understand the means by which radioactive iodine-131 can enter the human food chain and its role in hypothyroidism.*
- *Analyze the relationship between the incidence of hypothyroidism and the release of radioactive iodine-131 from the Hanford Nuclear site in the years immediately following World War II.*
- *Evaluate first person accounts of the effects of radioactive iodine-131 releases against conclusions drawn from analysis of GIS data.*
- *Compare & contrast conclusions drawn from analysis of GIS data with those based on a large scale Center for Disease Control study.*

Materials/Equipment

- *computer access to the [Downwind](#) webpages.*
- *video projector*
- *student access to computers*

Lesson Outline

- *Introduction - Hypothyroidism & Iodine-131 Exposure*
 - *Have students Google **hypothyroidism**.*
 - *List these headings on charts around the classroom: **effects, causes, symptoms, treatment, prognosis** and have students add related facts about hypothyroidism under appropriate headings*
 - *Discuss and clarify understanding of the disease.*
 - *Examine the differing effects of exposure to iodine-131 using the information and graphs on the [Radiation Exposure](#) webpage. Use the questions to guide discussion. Students with a background in Advanced Algebra should be able to deal with question #3.*
- *Computer activity*
 - *Have students work at computers in groups of 2-3 to complete the [Radioactive Iodine-131](#) activities and questions #1-3.*
- *Checking the Evidence*
 - *Discuss the [Downwinder](#) stories and evaluate them using the questions provided and, more generally, address the idea that first person accounts are not necessarily equally reliable.*

Assessment

Address question #4 on the [Radioactive Iodine-131](#) webpage comparing and contrasting conclusions drawn from the group activity with the conclusions of the Centers for Disease Control study.