

How do I receive a thyroid scan bioassay?



Environmental Health & Safety

"How do I...? Guide

These guidelines pertain to anyone who uses one millicurie (mCi) or more of volatile radioactive iodine (I-125 or I-131). People working in the immediate vicinity of unsealed radioiodine should also participate in the thyroid bioassay program.

1. **Baseline scan:** Before using any radioiodine, contact the Radiation Safety Officer (766-3277 or by email herrold@uwyo.edu). You will be asked to come to the Environmental Health & Safety office to obtain a personal dosimeter badge if you do not already have one. You will also be given a baseline thyroid scan in which a radiation detector is placed against your throat for a few minutes. It is essential to have a baseline with which to compare subsequent bioassays. (It is normal to have a baseline count slightly above the ambient natural background.)
2. **Note:** All radioactive materials must be procured through Environmental Health and Safety. Please refer to the "How do I order radioactive materials?" guide on the Environmental Health & Safety web site (<http://www.uwyo.edu/ehs/default.html>).
3. **Note:** All work with volatile forms of radioiodine must be performed in a fume hood! This includes iodinations with I-125 sodium iodide (NaI). Charcoal filtration of the radioiodine effluent may also be deemed necessary by the Radiation Safety Officer.
4. **Routine scans:** Not before 6 hours, but no later than 72 hours after radioiodine is used, contact the Radiation Safety Officer again to schedule a routine thyroid scan. You will again be asked to come to the E.H.S. office. (At least an hour is needed to set up the instrumentation and perform necessary calibrations before you appear for your thyroid scan.) The radiation counts in this procedure will be compared to your baseline counts to determine if your body has taken up any of the radioactive iodine.
5. **Diagnostic scans:** If the thyroid burden (the count minus the baseline) is less than 0.12 microcuries (uCi) no action is necessary. If the measurement exceeds this level, the worker will be asked to return at a later date for further tests to estimate the effective half-life of the radioiodine in the thyroid.
6. **Frequency:** You need to have a thyroid scan at least every two weeks. After three months, if counts are constantly below the action level and working conditions are unchanged, the RSO may change the frequency to quarterly.
7. **End-of-use scans:** After terminating a research product and closing out your radioiodine permit you need to schedule a final thyroid scan for our records.

For more information, please contact E.H.S. or consult the Radiation Safety Manual, which is available in your laboratory or on the E.H.S. web site.