



Navajo Birth Cohort Study
FREQUENTLY ASKED QUESTIONS (FAQ)
Meaning and Interpretation of Home Environmental Assessment (HEA) Results

What is gamma radiation and why do we test homes for it?

Gamma radiation is all around us, but we cannot see, smell, feel or taste it. We test homes for gamma radiation to see if any radioactive materials, such as mine wastes, may have been used to construct the homes. Long-term exposure to gamma radiation increases health risks, especially for children.

How is “background” radiation determined? And what are “Investigation Levels”?

Radiation levels were measured on undisturbed land within sight of your home to establish “background,” or normal radiation for your area. The average background radiation level in your area was used to establish **Investigation Levels (ILs)** for your home. Two different methods of calculating ILs that take into account differences in natural gamma radiation were established by the Navajo EPA and applied by NBCS. If the maximum gamma level measured at the home exceeds either IL, a referral is made to NNEPA.

What is Radon and why do we test homes for it?

Radon is an invisible, odorless radioactive gas that comes from the decay of natural uranium in rocks and soils. High levels of radon gas inside homes increase lifetime risks of lung cancer. Testing air inside homes is the only way to determine indoor radon levels.

What do I do to lessen radon levels in my home?

To reduce radon levels inside your home, especially during winter months when the house is closed and there is little air flow, the NNEPA Radon Program recommends you increase ventilation and humidity inside your home. You can increase air flow by turning on an electric fan and blowing inside air to the outside through a window left slightly open. You can increase the humidity, or air moisture, by running a humidifier, keeping a pot of water steaming on the stove, or periodically boiling water in a pan on top of the stove. Further information about radon is provided separately in NNEPA’s Radon Fact Sheet. Call 928-871-7703 for more information.

Why do we take samples of dust from homes?

Dust that builds up in homes may contain metals and other contaminants found in natural soils and rock, from the burning of wood or coal, from making jewelry, or from emissions from area power plants. Some of these metals are known to cause cancer at high levels of prolonged exposure; breathing coal smoke is linked to birth defects in Chinese children. Large pieces of dust may irritate the upper respiratory system (the nose and throat), and exposure to wood smoke is linked to lower respiratory illness in Navajo children. The larger dust particles that we collect on cloth wipes give indications of the presence of much smaller particles. The smaller particles can be inhaled deeply into the lungs where they may contribute to fibrosis, silicosis or lung cancer.

What does it mean to exceed Screening Guideline Values (SGVs)?

The NBCS Screening Guideline Values (SGVs) for metals in dust serve as an early-warning system that alerts you to the presence of potentially dangerous substances in your home long before they present health risks to you and your family. The SGVs are based on indoor dust screening levels developed by a working group of federal and state agencies to evaluate the potential health impacts of breathing indoor dust and have been modified to reflect exposures likely to occur in your home over long periods of time.

Is dust containing metals higher than SGVs dangerous to my health?

Metals exceeding their SGVs do not necessarily present an immediate danger, nor warrant medical attention. They may not, however, be considered safe over a lifetime of exposure. We are providing the results of these one-time tests to give you information that can help you reduce exposures and possible future health effects.

What can I do to lessen dust levels in my home?

Metals observed in dust identify possible sources of exposure in your home that you can take steps to minimize. It is not uncommon to find dust next to electric, gas and wood-burning stoves, even dust that is hard to see. We recommend homeowners regularly clean around stoves and other places where dusts accumulate. We also recommend burning only dry wood, and we recommend that you NOT burn coal or any other materials, such as plastics, in a wood-burning stove.

What is the risk to my child if my indoor metals levels exceed the SGVs?

Children are more sensitive to many environmental contaminants. Children spend more time crawling around on floors, and putting things into their mouth, potentially increasing their exposure. If your home has metals in the dust that exceed the screening guidelines, you can reduce the risk to your child by trying to identify potential sources that can be removed from your home and by keeping children, especially infants, from crawling around areas where dusts may accumulate. Often we see higher levels of metals in dust around heating stoves as a result of leaking seals, burning of wet fuel, or burning of fuel that is not intended for that stove (for example, burning coal in a wood stove). Often the metals that are a normal part of the fuel may not be apparent, but may deposit on the floor around the stove. Cleaning these areas regularly, minimizing the time your child crawls around in those areas, or improving the burning process may reduce these exposures.

Are there programs to fix my home if elevated metals or radiation are found?

In most cases, these results are provided for your information, and any actions taken as a result will be on your own initiative. We have provided information on how to reduce exposures to metals, wood-burning dusts, and radon in the home. Programs operated by USEPA and by Navajo EPA may be able to provide help if the radiation levels are high enough to present long-term health risks. If we have seen elevated radiation levels and you gave us permission to share your results with Navajo EPA, we will have referred you to their program already. They may conduct a more detailed investigation. In other cases, we will provide you with any information we have to help you reduce exposures.

Why do I need to know the quality of the water I drink?

Drinking water is another potential source of exposure to contaminants that may be harmful to your health. You may obtain drinking water from a community water system that is connected to your home. This piped-in water is “regulated,” meaning that it is tested regularly by the utility company that provides the water and usually is treated to lessen or remove potentially harmful substances and organisms. Community water must comply with water quality standards to be called “safe” to drink. The quality of the water is reported to customers in Consumer Confidence Reports (CCRs) that you may obtain from your water utility.

Or, you may drink water from “unregulated” water sources, such as windmills, dug wells or developed springs. These water sources are not tested or treated; often, we do not know the quality of the water, that is, is it safe to drink? The NNEPA discourages people from drinking water from unregulated, “livestock-only” water sources. If we cannot find water quality data for unregulated water sources, we will sample the wells or wells you drink from and provide the laboratory results of the tests back to you, usually in 2 to 4 months.

Are the HEA results related to the biomonitoring results I received?

In addition to a letter describing the results of your HEA, you also received a letter providing results of tests done on the blood and urine samples you provided at the time you enrolled in the study and later at the delivery of your baby. You can compare the results of the dust samples with your biomonitoring results. If you see similar patterns in the metals at high levels in your blood and urine *and* in the dust samples in your home, this might indicate that at least some of the exposures are resulting from activities or materials in your home. If the patterns are not the same and you see metals in blood and urine that are not in the home, looking outside the home, such as your place of work, or in your diet, may identify opportunities to reduce exposures.

For more information on exposures to metals and their potential health effects, consult CDC’s toxicological facts sheets:

<http://www.bt.cdc.gov/chemical/toxfaqs.asp>; <http://www.atsdr.cdc.gov/toxfaqs/index.asp>.