

Here's a brief review of the human health risk assessment process – as it relates to chemicals found at contaminated sites

We study health risks based on what people do and are likely to do on the site. Our goal is to protect everyone who could come in contact with chemicals from the site especially children, women of childbearing age, the elderly, and others who may be at greatest risk.



We use a four-part process to estimate the chance that contact with chemicals from a site will harm people now or in the future. This process gives us numbers that show how great (or small) the risks may be. It also points to who is at risk, what is causing the risk, and how sure we are about the numbers.

Data Collection and Evaluation

The first step of the process is Data Collection and Evaluation. We find out what has happened at and around the site and where chemicals may have been left. We collect samples of the soil, water, air, fish, garden vegetables, and other things that might contain chemicals from the site. From these samples, we try to find out what chemicals are there and how much. You can help us find out where chemicals might be and how they got there. For instance, you may have seen someone dumping something or know about the history of the site. This information helps us get better samples.

You can help us find out—

- Where chemicals are located
- What people do on or near the site

Exposure Assessment

In the next step—Exposure Assessment—we use the data collected in the first step to find out how much of each chemical people may be exposed to. People must come in contact with the chemicals to be at risk. The amount of exposure depends a lot on how much of each chemical is there, who might be exposed, and how they are exposed. For instance, children might play in a polluted stream. People might drink polluted well water or eat polluted fish. You can tell us about these activities, which helps us identify everyone who could be exposed. Your assistance helps us estimate the highest exposure anyone is likely to receive from the site.

People must come in contact with chemicals from the site to be at risk

Toxicity Assessment

Toxicity Assessment is how we learn about which illnesses or other health effects may be caused by exposure to chemicals. It also says at what dose harmful health effects will occur. This is the same as saying how

“The dose makes the poison” (Paracelsus, 1567) which means as dose rises, the risk of harm rises

much of each chemical it takes to cause harm. The higher the dose, the more likely a chemical will cause harm.

Risk Characterization

Risk Characterization, the final step of the process, sums it all up. It reveals which chemicals are posing the risks and what the health risks are. It also says how sure we are about the results. Since some uncertainty about risk estimates is unavoidable, we build in a large margin of safety to prevent underestimation of the risks. These safeguards are intended to protect the exposed public.

We now can use the risk assessment to develop a cleanup plan that will make the site safe for current and future use.

For more information on Risk Assessment please click on the link below:

[Risk Assessment](#)