



Smithsonian Center for Materials Research and Education

Topics in Conservation Science Lecture

EPA's Tribal LifeLine™ Project:

An Overview Calculating the Exposure and Risk to Tribal Communities from Chemicals in the Diet and Environment

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Substances***



Over the past two decades, the Environmental Protection Agency has used software models to make the link between residues of toxins in food or environment to human health consequences. Those software tools have evolved as the underlying sciences and computer technologies improve.

Representatives of EPA and The LifeLine Group will present an overview of how exposure and risk scenarios are captured in the software. The presentation will include illustrations of the kind of data and analysis functions already in the software, as well as those elements “on the drawing board.” Focus will be on the exposure profiles and risk assessment options relevant to the museum objects. Liz Resek will discuss the collaborations being set up with US agencies, as well as international groups to expand these capabilities for all interested parties through a cost sharing plan.

Prior to 2004, the risk assessment tools used by EPA, including the early versions of the LifeLine™ software, only considered the “general population” and not those persons living unique or traditional lifestyles. The new Tribal LifeLine™ software takes into account traditional diets (hunting, fishing, gathering), seasonal changes in lodging, use of sweat lodges, and other unique exposure scenarios. For the first time, tribal communities are “visible” when assessing exposure and risk to chemicals.



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Rose Room · National Museum of Natural History · 10th & Constitution Ave.
Washington, DC

January 13, 2006 1-2 pm

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A presentation to the Smithsonian Institution

January 13, 2006

Over the past two decades, Program Offices of the Environmental Protection Agency have used software models to make the link between residues of toxins in food or environment to human health consequences. Those software tools have evolved as the underlying sciences and computer technologies improve and the tools have been carefully scrutinized for relevance and quality. Over the past few years, the utility of such exposure/risk assessment models have caught the attention of other agencies and organizations. The common thread among these organizational missions is the need to quantify the potential risk posed to the population (or a subgroup) by toxic chemicals in some medium.

The task before the Smithsonian Museum and many other museums in the United States includes a definition of the risk that could be presented to tribal communities by objects returned to them after years of chemical-enhanced storage. The tools already developed by the Environmental Protection Agency can accomplish this task after some modification. Fortunately, the EPA has already recognized the need to modify their risk assessment tools to address the unique dietary, environmental and activity profiles of individuals in tribal communities.

Prior to 2004, the risk assessment tools used by EPA, including the early versions of the LifeLine™ software, only considered the “general population” and not those persons living unique or traditional lifestyles. In 2002, OPPTS responded to the need to expand that capability to consider Native Americans and Alaska Natives living and practicing traditional lifestyles. The new Tribal LifeLine™ software takes into account traditional diets (hunting, fishing, gathering), seasonal changes in lodging, use of sweat lodges, and other unique exposure scenarios. For the first time, tribal communities are “visible” when assessing exposure and risk to chemicals.

Many new components of the software are under construction in response to the increased interest by groups outside of EPA for which these exposure and risk assessment capabilities are needed for their missions and project objectives. For example, the work being done by OPPTS to consider exposures to artisans and people living in nearby environments is closely related to the work necessary to develop a module that addresses exposure and risk posed by museum objects that were preserved with pesticides and heavy metals.

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For additional information, please contact Liz Resek (EPA, Office of Prevention, Pesticides and Toxic Substances) at resek.elizabeth@epa.gov, or Dr. Christine F. Chaisson (The LifeLine Group) at cfchaisson@thelifelinelgroup.org, or go to the website www.thelifelinelgroup.org.