

TRIBAL PESTICIDE EXPOSURE PATHWAYS: AN OVERVIEW

CLINICAL CONSIDERATIONS

INGESTION



- Making baskets, and preparation of traditional materials, involving mouthing of such materials
 - May lead to unintentional ingestion of pesticide residue
- Subsistence agriculture, particularly local sources of seafood and wild game
 - Potential for ingestion of food sources from unprotected waterways and wells contaminated with pesticides
 - Increased pesticide intake via biomagnification
- Herb and tea picking like sage, sweetgrass, and tobacco that are used to treat illnesses and are crucial in ceremonies

Average daily
seafood consumption

Tribal populations on a
subsistence diet:
500g-1000g/day

General population:
17.5g/day

INHALATION



- Pesticide applications in communal living environments
 - Unintentional inhalation exposure may occur due to lack of communication about pesticide application
 - Example: Bug bombs
- Pesticide drift from applications
 - Unintentional inhalation exposure may occur from off-target aerosol exposures
 - Example: Tribal lands used by agricultural companies that do not inform the community at large about potential aerosol exposures

DIRECT CONTACT / DERMAL



- Treatments for head lice, bed bugs, and other pests may be overused or misused
- Residue on surfaces
 - Potential unintentional dermal exposure to pesticide residue on surfaces without proper notice in communal living environments
 - Example: Solid waste materials sprayed with pesticides that are dumped on tribal lands (also presents potential inhalation and ingestions risks)
- Traditional ceremonial materials
 - Potential for exposure to pesticide-contaminated water sources, plants, treated wood, or other resources
 - Example: Gathering of wild foods, medicine, herbs, and materials for ceremonial activities can occur in places where pesticide applications are likely to have occurred without signage indication
- Gathering of plants, and processing of fish and game
 - Potential exposures via polluted waterways, off-target exposures, or direct unknown pesticide application

COMMUNICATION CONSIDERATIONS



- It is important to assure the patient they are not to blame for the exposure. Emphasize that anonymity will be preserved and that the patient will not be subject to retribution for reporting a pesticide exposure or illness.
- Communicate with patients to be certain that recurrent exposure risk is eliminated. Consider working with team members to advocate for PPE and other mechanisms to protect patients and other tribe members with similar pesticide exposure risks.

WHAT CAN CLINICIANS DO?



- Take an initial screening of patient's exposure history and assess symptoms to identify relevant pesticide exposures
- Obtain a detailed exposure history if initial screening suggests potential pesticide exposure concern
- If dealing with a suspected pesticide exposure:
 - Collect information on the pesticide, including the pesticide name, EPA pesticide registration number, and pesticide label
 - Follow decontamination procedures (acute)
 - Collect evidence of contamination, such as on shoes or clothing
 - Obtain a urine sample to freeze for future testing
 - Order laboratory tests
 - Consult with appropriate specialists, such as toxicologists, occupational and environmental medicine specialists, and industrial hygienists
 - Schedule/conduct patient follow-up
 - Report pesticide incident case according to state requirements

ADDITIONAL RESOURCES



Pesticides: Pregnancy and Breastfeeding. Mother to Baby. (2021, July 1). Retrieved January 5, 2023, from <https://mothertobaby.org/fact-sheets/pesticides-pregnancy/>

Roberts, J. R., & Reigart, J. R. (2013). *Recognition and management of pesticide poisonings.* United States Environmental Protection Agency, Office of Pesticide Programs.

Tribal Pesticide Program Council. (n.d.). Retrieved from <https://tppcwebsite.org/>

Exposures listed may not affect all tribes and do not include all possible exposures to pesticides in tribal communities.