

Indoor Air Quality Assessment for Tribal Households





California Tribal Epidemiology Center
California Rural Indian Health Board, Inc.

The following survey is an assessment of Tribal household indoor air quality (IAQ).

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Summary

The following survey was requested by the Kashia Band of Pomo Indians. It aims to assess various indicators relevant to indoor air quality concerns that may be seen in among Tribal households. Acknowledgments go towards and references are cited to the United States Environmental Protection Agency (EPA), EMS Environmental, Inc., and the University of Wisconsin-Madison.

Survey Objectives

Objective 1

To assess overall IAQ status within Tribal-specific households.

Objective 2

To identify levels of certain IAQ indicators as reported by survey respondents.

Objective 3

To evaluate severity of IAQ health symptoms among survey respondents.

References

Environmental Protection Agency. December 2007. *Testing for Indoor Air Quality*.

Werley, Scott. 2017. EMS Environmental, Inc. *How to Test for Indoor Air Quality- Testing for indoor air pollutants*. 24 April. <https://emsenv.com/2017/04/24/test-indoor-air-quality/>.

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Survey

Indoor Air Quality (IAQ) Assessment for Tribal Households

ASBESTOS

Asbestos is a naturally occurring fibrous mineral. It has been used for decades in thousands of commercial products (insulation, fireproofing materials, etc.). Asbestos can separate into tiny particles that remain in the air and are easily inhaled into your lungs. Those consistently exposed to asbestos are at risk for developing several life-threatening diseases, such as lung cancer.

1. Is your home built before 1975?
 - a. Yes (go to question 2)
 - b. No (skip to question 4)
2. Have you ever had problems with asbestos in your home?
 - a. Yes (go to question 3)
 - b. No (go to question 5)
 - c. Unsure (go to question 3)
3. If your home was built before 1975, indicate if any of the following types of materials, that can contain asbestos, are present in your household (select all that apply):
 - a. Hot or cold water pipes insulated with plaster-like or corrugated-paper
 - b. the home's floor original tile
 - c. Ceiling tile/coating (popcorn ceiling)
 - d. felt-like covering on warm-air ducts
 - e. Unsure
4. If your home was built before 1975, have you or previous owners of the home ever addressed your potential asbestos problem by hiring licensed asbestos abatement professionals?



- a. Yes
- b. No
- c. Unsure

VENTILATION (Air Flow)

Poor ventilation can cause contaminants to increase and can result in high humidity levels. The most common symptoms of poor air flow can be eye, nose, and throat irritation, headache, fatigue, sneezing, chest tightness, nausea, dizziness, and dermatitis (skin rashes).

- 5. When weather and outside temperatures allow, how often do you or others in your household open windows or use a whole house fan to allow outside air to circulate throughout the home?
 - a. Often (daily)
 - b. Rarely (1-2 times weekly)
 - c. We don't open our windows to allow air to circulate throughout the home
 - d. Unsure
- 6. Which weatherization (season prepping) methods are used in the household? (Select all that apply):
 - a. Window weatherstripping (plastic on windows, blankets on windows, blankets to separate rooms, etc.)
 - b. Door weatherstripping (updated stripping under the door and around the inside frame)
 - c. Wall or ceiling air/vapor retarder that act like barriers that help insulate the walls and/or ceiling (glass, sheet metal, rubber membrane, plywood, asphalt coated paper, fiberglass, brick, etc.)
 - d. Caulking around windows, air vents, etc.
 - e. Unsure



e.f. [We don't weatherize.](#)

7. Exhaust fans are located in:

- a. Kitchen (including above the stove)
- b. Bathrooms
- c. Both kitchen and bathrooms
- d. Neither kitchen nor bathrooms
- e. Other (please specify): _____
- f. Unknown

8. Indicate the frequency of exhaust fan usage in the home:

- a. Regularly (when preparing food or whenever room is occupied)
- b. Occasionally (only when needed)
- c. Never
- d. Exhaust fan currently needs repairs.
- e. Unsure

9. Is air conditioning present in the household?

- a. Yes
 - i. Please indicate type of air conditioning used:
 - 1. Central
 - 2. Window
 - 3. Portable



b. No

10. Are signs of mold growth visible by sight or smell in any part of the household?

a. Yes

i. Please indicate where in the household:

1. Windows
2. Front door
3. Ceiling
4. Bathroom walls/windows
5. Other (please specify): _____

b. No

c. Unsure

11. Do you have persistent condensation on windows any time during the year?

a. Yes

i. Please specify which side of the house: _____

ii. Please indicate during which season this occurs (select all that apply):

1. Winter
2. Summer
3. Fall
4. Spring

b. No



CLEANERS, SOLVENTS, AND PESTICIDES

Solvents and cleaners include chemicals such as alcohol, gasoline, and kerosene. Health hazards include damage to the nervous system, reproductive damage, liver and kidney damage, lung complications, cancer, and skin issues.

Many pesticides can also pose risks to people. The health effects of pesticides depend on the type of pesticide. Some affect the nervous system, may irritate the skin or eyes, cause cancer, and others can affect the endocrine/hormonal system in the human body.

11. Do you or anyone in the household use any aerosol sprays in the home?

a. Yes

i. Please indicate the type of aerosol sprays being used (select all that apply):

1. Bug bombs
2. Air/odor fresheners
3. Lysol or any other type of disinfectant spray
4. Other (please specify): _____

b. No

12. Select the cleaning products you or anyone in the household frequently use at least once a day (select all that apply):

- a. Oven cleaners
- b. Disinfectants
- c. General-purpose household cleaners
- d. Home cleaners in aerosol spray form
- e. Carpet shampoos



f. Air fresheners

g. Dry-cleaning fluids or spot removers

h. Scouring powders that contain chlorine bleach

13. Do you store any of the following inside your house? (paints, kerosene, pool products, solvents, lubricating greases or oils)

a. Yes

i. Please specify where in the house these are generally stored:

b. No

14. Do you store any of the following inside your house? (pesticides, herbicides for plants, insecticide for insects, biocides like bleach)

a. Yes

i. Please specify where in the house these are generally stored:

b. No

15. Do you frequently use pesticides indoors on pets, house plants, or insects?

a. Yes

i. Please indicate which types of pesticides you use indoors (select all that apply):

1. Insecticides (for the control of insects)
2. Herbicides (for the control of unwanted plants)
3. Rodenticides (for the control of rodents)
4. Bactericides (for the control of harmful bacteria)
5. Fungicides (for the control of fungi)



6. Larvicides (for the control of larval growth like maggots)

b. No

16. Have you ever had your home treated for insects or other pests?

a. Yes

i. What type of treatment was done?

1. Tenting

2. Ground injections

3. Wall injections

4. Other (please specify): _____

b. No

c. Unsure

FORMALDEHYDE

Formaldehyde is a colorless, flammable, strong smelling chemical that is used in building materials. It is also used to produce many household products. Some individuals may experience effects such as watery eyes, burning sensations in the eyes, nose, throat, coughing, nausea, and skin irritation.

17. Have composition wood products such as particleboard, furniture, or cabinets been used extensively in home construction in the last two years?

a. Yes

i. Please specify where in the home: _____

b. No

c. Unsure

18. Has new carpeting been installed in the home in the last two years?



a. Yes

i. Please specify where in the home: _____

b. No

c. Unsure

19. Have new drapes, rugs, or upholstery been installed in the home in the last two years?

a. Yes

i. Please specify where in the home: _____

b. No

c. Unsure

CARBON MONOXIDE

Carbon monoxide (CO) is given off whenever fuel or other carbon-based materials are burned (combusted). CO inhalation can cause headache, dizziness, vomiting, and nausea. If CO levels are high enough, unconsciousness or even death can occur. Consistent exposure to levels of CO over long periods of time has also been linked with an increased risk of heart disease.

20. Do you have a frequent smoker (smokes more than one pack per day) in the home?

a. Yes

b. No

21. Do you use a gas stove or oven for cooking?

a. Yes

b. No

22. Do you have a gas water heater?

a. Yes



- b. No
- c. Unknown

23. Do you have a gas dryer?

- a. Yes
- b. No

24. Which of the following is your primary or backup (supplementary) heating system?
(Please select all that apply)

- a. Fireplace
- b. Oil, wood, electric, coal, or gas furnace or boiler
- c. Wood stove (old wood stove or new wood stove), pellet stove, or furnace
- d. Unvented gas or kerosene space heater

25. Where does your clothes dryer exhaust (vent) to?

- a. Indoors
- b. Outdoors
- c. Unsure

HOUSE DUST AND ANIMAL WASTE

26. Would you describe your home as unusually dusty?

- a. Yes
- b. No
- c. Unsure

27. Is dust or dirt staining walls, ceilings, furniture, or draperies in your household?

Commented [NH1]: Need to split this into two questions.
1) Primary heating system. 2) backup heating system or ask them to label.



- a. Yes
- b. No
- c. Unsure

28. Do you ever use a humidifier or vaporizer in the house?

- a. Yes
 - i. Please indicate during which time of the year (select all that apply):
 - 1. Winter
 - 2. Summer
 - 3. Fall
 - 4. Spring

- b. No

29. Do you ever use a dehumidifier in the house?

- a. Yes
 - i. Please indicate during which time of the year (select all that apply):
 - 1. Winter
 - 2. Summer
 - 3. Fall
 - 4. Spring

- b. No

30. Indicate whether your home has any of the following water problems:

- a. Leaky roof



b. Wet basement

c. Leaky Pipes

d. Other (please describe):

31. Do any pets live indoors?

a. Yes

i. Please indicate the type of pet (select all that apply):

1. Dogs

2. Cats

3. Rodents (hamsters, rats, guinea pigs, gerbils, chinchillas, etc.)

4. Birds

5. Reptiles

6. Insects

7. Other (please specify): _____

b. No

SMOKE AND FIRE

32. Has your household ever been close to a major wildfire?

a. Yes

i. Please specify the year:

1. 2020

2. 2019



- 3. 2018
- 4. 2017
- 5. 2016
- 6. Other (please specify): _____

- b. No
- c. Unsure

33. Have you or members of your household ever had to evacuate your home due to a wildfire threat that was causing poor indoor air quality?

- a. Yes
- b. No

34. Do you feel like the inside air quality of your home remains negatively affected by wildfires?

- a. Yes
- b. No
- c. Unsure

Commented [NH2]: I realize that people may still have negative affects from wildfire regardless of the year of the fire.

35. Do you currently have a portable air cleaner operating in your household?

- a. Yes
- b. No

INDOOR AIR QUALITY (IAQ) SYMPTOMS

36. Please indicate the following health symptoms experienced by you or any members of the household in the past 30 days (select all that apply):

- a. Nausea



- b. Eye irritation (can include burning or stinging eyes)
- c. Respiratory irritation/problems (can include but not limited to coughing, chest congestion, wheezing, shortness of breath, difficulty breathing, pain when breathing)
- d. Nasal congestion/runny nose
- e. Dizziness
- f. Headache

37. If you have experienced any of the symptoms listed above, do they usually occur throughout the house or in a specific room in the house?

- a. Throughout the house
- b. In a specific room
 - i. Please specify which room: _____
- c. Unsure

38. At what time of day do these symptoms usually occur? (Select all that apply)

- a. Morning
- b. Afternoon
- c. Night

39. When do health symptoms occur, or when are they the worst? (Select all that apply)

- a. Spring
- b. Summer
- c. Fall
- d. Winter
- e. Year-round



- f. Unsure

RADON

Radon is a gas that naturally forms when radioactive metals break down in rocks, soil, and groundwater. People can be exposed to radon primarily from breathing it in the air that comes through cracks and gaps in homes. Over time, consistent exposure can increase the risk of lung cancer. Radon is the second leading cause of lung cancer after cigarette smoking.

40. Do you have permeable soil, such as coarse sand or gravel, surrounding your household?

- a. Yes
- b. No
- c. Unsure

41. Are there any visible gaps in the walls or floors in any part of your household?

- a. Yes
- b. No
- c. Unsure

42. Have you, anyone in your household, or previous owners of your household ever conducted a radon test to evaluate the household's radon levels?

- a. Yes
- b. No
- c. Unsure

--- END OF ASSESSMENT ---



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