

Red Hill Jet Fuel Exposure: What We Know About Health Effects



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OVERVIEW



In November 2021, fuel from the Red Hill Bulk Fuel Storage Facility leaked into O’ahu’s water supply. State and federal agencies investigated the health impacts and found widespread physical and mental health effects, some lasting long after the initial exposure. This fact sheet summarizes the Assessment of Chemical Exposure (ACE) studies conducted by the Centers for Disease Control and Prevention’s (CDC) Agency for Toxic Substances and Disease Registry (ATSDR) in partnership with the Hawai’i State Department of Health and highlights what is known about the long-term effects of jet fuel exposure.

KEY FINDINGS FROM THE ACE STUDIES

ACE 1 – Initial Community Health Survey (Jan–Feb 2022) [1]

- **2,289 people participated in a self-administered survey or interview.**
 - **87% reported health concerns or symptoms.**
 - Of those, **75% had symptoms that lasted a month or more.**
 - **37% sought medical care.**
 - **17 people were hospitalized overnight**
- Participants reported symptoms in various body systems shown in **Figure 1**.

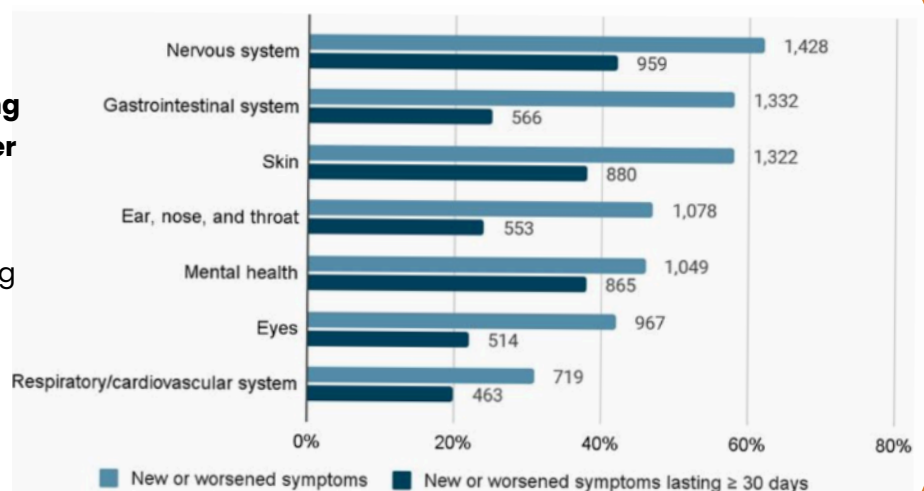
ACE 2 – Follow-Up Survey (Aug–Sept 2022) [2]

- **986 people responded**, 61% were returning participants of the initial survey.
 - **80% reported ongoing health symptoms.**
 - **65% were confident their symptoms were related to fuel exposure.**
 - **55% reported worse physical health and 50% reported worse mental health** after the incident compared to before exposure.
- **New and worsening symptoms were similar to those reported in the ACE 1 study.**

Figure 1: Occurrence of New or Worsened Symptoms by Body System in ACE 1 Study

Data from the ACE studies showed that participants reported both new and worsened ongoing health problems among those exposed to fuel-contaminated water at fuel-contaminated water at Red Hill.

Symptoms were reported in almost every body system with most people experiencing symptoms affecting the nervous system, gastrointestinal system, and skin. Many individuals continued to experience symptoms for more than 30 days for more than 30 days [2].



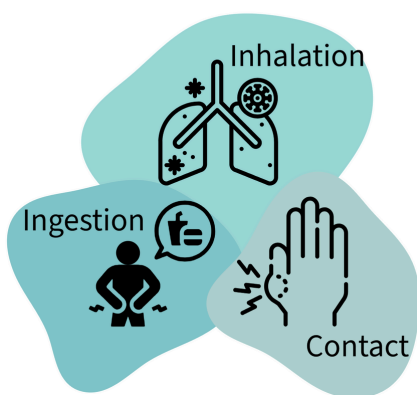


A Preliminary look at the ACE 3 Study [3]

- **Review of 653 medical records** between Nov 2021– Feb 2022.
 - **Up to 1 in 3 had new or persistent health problems.**
 - **31% of adults and 19% of children who participated in the survey developed a new, long-lasting health conditions after the fuel exposure.**
- **Up to 1 in 4** had pre-existing conditions that got worse.
 - **24% of adults and 28% of children** had health conditions that were present before the fuel spill that **got worse** after the exposure.
- **58 people were identified to be pregnant.**
 - 46 had enough medical records available for the researchers to review and analyze, however a report of this review is still **pending publication.**

Long-Term Health Effects of Jet Fuel Exposure

Although more research is needed to understand the long-term health effects of jet fuel in the drinking water, some studies have reported health effects in people who were frequently exposed to jet fuel in the workplace by breathing it or having contact with their skin [4]. These studies have also reported effects on the nervous system, mental health, respiratory system, and possibly cancers. However, most of the available research studies are limited by their design. To more fully understand the long-term health effects of jet fuel exposure, **studies are needed that: 1) include everyone, including men, women, children, and the elderly; 2) collect detailed exposure information; and 3) follow people for many years to see how their health changes over time** [4].



Jet fuel contains harmful chemicals that can affect the body when breathed in, swallowed, or when it touches the skin.

ENROLL IN THE RED HILL REGISTRY

- **Health Monitoring:** Track short-term and long-term health outcomes related to fuel exposure.
- **Resource Provision:** Connect individuals with services and support networks.
- **Community Engagement:** Involve individuals who were exposed, health professionals and advocates, and concerned O’ahu residents in the development and direction of the Registry.
- **Research Facilitation:** Serve as a data repository to generate hypotheses and investigate links between exposure and health effects.

[Join the Registry](#)



The Red Hill Registry is accepting information from both adults and children who express interest in being enrolled.

Contact Information

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References:

[1] Miko, S., Poniatowski, A. R., Troeschel, A. N., et al. (2023). Community health impacts after a jet fuel leak contaminated a drinking water system: Oahu, Hawaii, November 2021. *Journal of water and health*, 21(7), 956–971. <https://doi.org/10.2166/wh.2023.10>

[2] Troeschel, A. N., Gerhardstein, B., et al. (2022). Notes from the Field: Self-Reported Health Symptoms Following Petroleum Contamination of a Drinking Water System – Oahu, Hawaii, November 2021–February 2022. *MMWR. Morbidity and mortality weekly report*, 71(21), 718–719. <https://doi.org/10.15585/mmwr.mm7121a4>

[3] Agency for Toxic Substances and Disease Registry (ATSDR). (2023). *Preliminary findings and slide deck from the third ACE study on the Red Hill Incident*. Unpublished materials obtained through a Freedom of Information Act (FOIA) request. Agency for Toxic Substances and Disease Registry.

[4] US Department of Veterans Affairs. (2025). Public Health: Jet Fuels. https://www.publichealth.va.gov/exposures/petroleum/jet_fuels.asp