OIL SPILL SCIENCE

SEA GRANT PROGRAMS OF THE GULF OF MEXICO

IS IT SAFE? EXAMINING HEALTH RISKS FROM THE DEEPWATER HORIZON OIL SPILL

The 2010 Deepwater Horizon oil spill left many tourists and residents questioning if oil and the dispersants used to keep oil from reaching the shore could make them sick. Scientists studied the health risks of lingering chemicals from the spill.

ARE BEACHES SAFE TO VISIT?

Scientists tested oil samples and looked at risks that could occur from having the oil on your skin, eating it accidentally, or breathing the fumes while at the beach. Learn more about what they found on the next page.

IS THE WATER SAFE FOR SWIMMING?

Scientists tested offshore and nearshore waters for chemicals found in oil and dispersants. Learn more about the results of their studies on the next page.

IS GULF SEAFOOD SAFE TO EAT?

Multiple government agencies tested more than 22,000 seafood samples for chemicals found in oil and dispersants. Learn more about these samples on the next page.

IF YOU COME IN CONTACT WITH OIL OR TAR AT THE BEACH —

- Wash the area with soap and water, baby oil, or cleaning paste sold at auto parts stores.

- Do not use solvents, gasoline, kerosene, diesel fuel, or similar products on your skin. These products are worse for your health than the oil.

Playing at Gulf beaches

Oil washed onto nearly 600 miles of Gulf Coast beaches in 2010.[1] Scientists collected oil samples from sandy beaches after the spill to see if lingering chemicals were at levels harmful to humans. They also tested sites in heavily oiled areas five years later to look at longer-term effects. In both cases, **studies suggested that exposure to weathered oil, impacted sand, or tar balls after the oil spill would not have a negative effect on humans**.[2,3] The amount of sandy oil pieces found on beaches has decreased since 2010. However, a small amount of oil remains because what is left is hard to find and remove.[4]

Swimming in the Gulf

Scientists sampled coastal waters for chemicals found in oil during the spill and through the following summer. When scientists added up the total amount of all harmful oil chemicals they found, the level was **10 times lower than levels known to harm humans**.[5,6] During the spill, emergency responders applied dispersant at the wellhead and to oiled surface waters more than 3.45 miles from shore. The highest level of the main dispersant chemical of concern was **100 times lower than the levels known to cause harm to the human liver**.[7]

Eating Gulf seafood

During the oil spill, federal and state agencies tested samples to ensure seafood was safe to eat. Seafood had to pass visual, smell, taste, and chemical tests in order for the waters to be reopened for fishing. By making sure the chemicals were below harmful levels, the U.S. Food and Drug Administration (FDA) could determine when Gulf seafood was safe to eat.[8]

Oil contains many chemicals, some that are harmful and some that are not. The highest level of cancer-causing chemicals in seafood was more than **400 times lower than the levels the FDA considers unsafe**. According to the FDA, the dispersants used during the spill were not likely to build up in seafood and were low in human toxicity. **All seafood samples tested for dispersant chemicals were below the FDA level of concern**.[8]

REFERENCES

1. Nixon, Z., Zengel, S., Baker, M., Steinhoff, M., Fricano, G., Rouhani, S., & Michel, J. (2016). Shoreline oiling from the Deepwater Horizon oil spill. *Marine Pollution Bulletin, 107*(1), 170-178. **2.** Operational Science Advisory Team (OSAT-2) Gulf Coast Incident Management Team. (2011). ***Summary report for fate and effects of remnant oil in the beach environment***. Retrieved from ***https://www.restorethegulf.gov/sites/default/files/u316/OSAT-2%20Report%20no%20ltr.pdf*** **3.** Black, J. C., Welday, J. N., Buckley, B., Ferguson, A., Gurian, P. L., Mena, K. D., ... & Solo-Gabriele, H. M. (2016). Risk assessment for children exposed to beach sands impacted by oil spill chemicals. *International Journal of Environmental Research and Public Health, 13*(9), 853. **4.** Graham, L., Hale, C., Maung-Douglass, E., Sempier, S., Swann, L., and Wilson, M. (2016). ***Oil spill science: Navigating shifting sands - Oil on our beaches***. MASGP-15-025. **5.** Allan, S. E., Smith, B. W., & Anderson, K. A. (2012). Impact of the Deepwater Horizon oil spill on bioavailable polycyclic aromatic hydrocarbons in Gulf of Mexico coastal waters. *Environmental Science & Technology, 46*(4), 2033. **6.** Operational Science Advisory Team (OSAT) Unified Command. (2010). ***Summary report for sub-sea and sub-surface oil and dispersant detection: Sampling and monitoring***. Retrieved from ***https://www.restorethegulf.gov/sites/default/files/documents/pdf/OSAT_Report_FINAL_17DEC.pdf*** **7.** Maung-Douglass, E., Wilson, M., Graham, L., Hale, C., Sempier, S., and Swann, L. (2015). ***Oil spill science: Top 5 frequently asked questions about the Deepwater Horizon oil spill***. GOMSG-G-15-002. **8.** Graham, L., Hale, C., Maung-Douglass, E., Sempier, S., Swann, L., and Wilson, M. (2015). ***Oil spill science: The Deepwater Horizon oil spill's impact on Gulf seafood***. MASGP-15-014.

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