

A new [U.S. EPA report](#) released today presents a scary picture of our exposure to hazardous pollutants in our air. The National-Scale Air Toxics Assessment for 2002, which analyzed health data based on chronic exposure to air toxics for 124 pollutants for which those data are available. (The assessment's name is potentially confusing; the report analyzed data from 2002.) The most important take-home message: over 2 million Americans live in census tracts where exposure to air toxics causes an increase of more than 100 in 1 million (or 1 in 10,000) in lifetime cancer risk.

Air toxics, unlike "criteria" air pollutants such as ground-level ozone and oxides of nitrogen whose main health impact is their contribution to smog, are more localized in their impact. These substances can contribute to risk of cancer, respiratory illness, and other harms when inhaled. Their unequal distribution across the country and even within communities has often not been remedied successfully even as the Clean Air Act has been relatively successful at cleaning criteria pollutants from the air.

The study was designed to answer these questions:

1. Which air toxics pose the greatest potential risk of cancer or adverse noncancer effects across the entire United States?
2. Which air toxics pose the greatest potential risk of cancer or adverse noncancer effects in some areas of the United States?
3. Which air toxics pose lesser, but still significant, potential risk of cancer or adverse noncancer effects across the entire United States?
4. When risks from all air toxics are combined, how many people have the potential for an upper-bound lifetime cancer risk greater than 10 in a million?
5. When potential adverse respiratory or neurological effects from all air toxics are combined, how many people have the potential for exposures that exceed reference levels intended to protect against adverse effects (i.e., a target organ-specific hazard index greater than 1.0)?

The study provides a wealth of information. The bottom line for cancer risk:

More than 284 million people live in census tracts where the combined upper bound lifetime cancer risk from these compounds exceeded 10 in one million risk and more than 2 million people live in census tracts where the combined upper bound lifetime cancer risk from these compounds exceeded 100 in one million risk. The overall national average risk in the U.S. is 36 in a million.

For non-cancer risk, the agency created a "hazard index," and found that for respiratory

impacts, “the hazard index was dominated by a single substance, acrolein” and that the index indicated some impact (index of 1 or more) from air toxics for nearly the entire U.S. population, with a more serious impact (hazard index more than 10) for 22 million people. [The summary of results, and county-by-county maps of the results, are available here.](#) The [main page for the project is here.](#) And a [“fact sheet” is here.](#)

Los Angeles County, unsurprisingly, didn’t fare well. Overall, these numbers are quite high, especially since they cover only outside inhalation risks from a particular set of air toxics. Together with other cancer- and other disease-causing agents, the overall cancer burden placed on some communities by industrial and vehicular pollution is very high.

The county-by-county assessment on the EPA’s maps provides only limited information about the localized impacts of these pollutants on particular communities. But I expect that this dataset, with information by census tract, will be valuable for helping to gauge air toxic impacts on a smaller scale in the future, and, I hope, to motivate more governmental action to protect communities against air toxics. I haven’t looked at the data, but I would be surprised if poor and minority communities aren’t hardest-hit.