



PCBs and Health: The Hudson River Communities Project

Information Sheet #3: Detailed Summary Outdoor Air Sampling

PCBs and Health: The Hudson River Communities Project is an environmental health study being done by the New York State Department of Health (NYSDOH) in the Fort Edward, Hudson Falls, and Glens Falls areas of Upstate New York. The purpose is to look at how polychlorinated biphenyls (PCBs) affect people's nervous system. We sampled outdoor air to see what contribution, if any, breathing PCBs might make to blood. Additionally, air concentrations were evaluated as they relate to temperature, wind direction and proximity to potential sources of PCBs. Overall, the outdoor air results show that outdoor air PCB levels were somewhat higher in the study areas and near the Hudson River and other PCB contaminated sites. This information sheet (#3) gives a summary of results for the outdoor air sampling. Information Sheet #1 (pamphlet) gives a project overview and Information Sheet #2 gives a summary of results for blood sampling. Future information sheets will summarize the results for indoor air sampling and nervous system testing.

Key Points and Findings: Outdoor Air Sampling

- Outdoor air samples were collected as part of a larger project designed to help researchers better understand if PCBs can affect people's health.
- Outdoor air PCB levels in the study area (Fort Edward and Hudson Falls) were somewhat higher than levels in the comparison area (Glens Falls). The air collected outdoors at the homes in the study area had an average level of 0.72 nanograms per cubic meter (ng/m^3) of air compared to 0.40 ng/m^3 in the comparison area. Our statistical tests showed that there was a difference in outdoor air between the study and comparison areas. A nanogram is one billionth of a gram.
- In the study area, we generally found higher PCB levels in outdoor air collected within $\frac{3}{4}$ of a mile of the Hudson River (0.71 ng/m^3) compared to farther away (0.50 ng/m^3). We also found higher PCB levels in air collected downwind of sites contaminated with PCBs (0.73 ng/m^3) versus those collected upwind (0.55 ng/m^3).
- Overall, the average outdoor air PCB levels that we measured in this project for both groups (0.40 and 0.72 ng/m^3) are low and within the range of levels reported for other research projects done in the United States where there were no unusual sources of PCBs (0.40 - 3.6 ng/m^3).

How were outdoor air samples collected and looked at for PCBs?

We collected over 250 outdoor air samples from the study and comparison areas for this project. We collected outdoor air samples to see what contribution, if any, breathing PCBs in outdoor air might make to PCB levels found in people's bodies and how indoor and outdoor air are related. Additionally, because a large number of outdoor air samples were collected, we realized we could also look for possible links with local PCB sources.

The equipment used to collect the air samples ran for 24 hours at each participant's home. We looked at weather conditions on the day the air was collected and distances from sites with PCBs, including the Hudson River. Most of the samples were collected between the months of June and October in the years 2000, 2001, and 2002. We collected one outdoor air sample at each participant's home. Of those, we chose 93 in the study area and 85 in the comparison area to analyze.

What were the outdoor air sampling results?

Outdoor air PCB levels in the study area (Fort Edward and Hudson Falls) were somewhat higher than levels in the comparison area (Glens Falls). The average PCB level in the study area was 0.72 ng/m³ compared to an average PCB level of 0.40 ng/m³ the comparison area.

In the study area, higher PCB levels (0.71 ng/m³) were measured in outdoor air at homes within ¾ mile to the Hudson River compared to homes beyond ¾ mile from the Hudson River (0.50 ng/m³). Also in the study area, higher PCB levels were measured in outdoor air collected at homes that were downwind of other PCB contaminated sites (0.73 ng/m³) compared to homes upwind from other PCB contaminated sites (0.55 ng/m³).

What are the researchers planning to do next?

A next step in this study will be to report PCB levels for indoor air sampling. Laboratory results for the indoor air samples are still pending and will be summarized in future information sheets.

Questions and Additional Information: Who to contact at NYSDOH?

General study and blood sampling information:

Erin Belanger at 1-800-458-1158, extension 27950

Outdoor air results:

Patrick Palmer at 1-800-458-1158, extension 27711

Reports, Updates, Community Outreach:

Betty Prohonic at 1-800-458-1158, extension 27530

For additional information on this and other similar projects at the New York State Department of Health, visit our website at: www.nyhealth.gov/environmental/