

West Virginia University Health Sciences Center (2008, March 27). Chronic Illness Linked To Coal-mining Pollution, Study Shows. West Virginia University Health Sciences Center (2008, March 27).

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Science News

Chronic Illness Linked To Coal-mining Pollution, Study Shows

ScienceDaily (Mar. 27, 2008) — Pollution from coal mining may have a negative impact on public health in mining communities, according to data analyzed in a West Virginia University research study.

"Residents of coal-mining communities have long complained of impaired health," Michael Hendryx, Ph.D., associate director of the WVU Institute for Health Policy Research in WVU's Community Medicine department, said. "This study substantiates their claims. Those residents are at an increased risk of developing chronic heart, lung and kidney diseases."

Hendryx and co-author Melissa Ahern, Ph.D., of Washington State University, used data from a 2001 WVU Health Policy Research telephone survey of more than 16,400 West Virginians. That was correlated with data from the West Virginia Geological and Economic Survey, which shows volume of coal production from mining in each of the state's 55 counties.

The goal was to determine whether there is a relationship between coal production and forms of cardiovascular, lung and kidney disease in the state.

According to Hendryx, as coal production increases, so does the incidence of chronic illness. Coal-processing chemicals, equipment powered by diesel engines, explosives, toxic impurities in coals, and even dust from uncovered coal trucks can cause environmental pollution that could have a negative affect on public health.

According to Hendryx, the data show that people in coal mining communities

- have a 70 percent increased risk for developing kidney disease.
- have a 64 percent increased risk for developing chronic obstructive pulmonary disease (COPD) such as emphysema.
- are 30 percent more likely to report high blood pressure (hypertension).

"We've considered that chronic illness might be prevalent in these areas because rural West Virginians have less access to health care, higher smoking rates and poorer economic conditions," Hendryx said. "We've adjusted our data to include those factors, and still found disease rates higher in coal-mining communities."

Hospitalization rates in these communities also were studied. Data show the risk of hospitalization stays for

- COPD increases 1 percent for every 1,462 tons of coal.
- hypertension increases 1 percent for every 1,873 tons of coal.

"Total mortality rates are higher in coal-mining areas compared to other areas of Appalachia and the nation," Hendryx said. "The incidence of mortality has been consistently higher in coal-mining areas for as long as Centers for Disease Control rates are available, back to 1979."

Total mortality data for West Virginia suggests there are 313 excess deaths every year from coal-mining pollution.

More detailed reports documenting the increases of mortality rates in coal-mining communities will be published in national journals this spring.

The researchers note that their study is an analysis of existing data, which limits the overall depth of the findings. Their next steps are to directly measure air and water quality in coal-mining communities.

"People in coal-mining communities need better access to healthcare, cleaner air, cleaner water, and stricter enforcement of environmental standards," he said. "Our study helps open the door for further explorations of community health and coal mining. We owe it to people in those communities to start protecting and repairing their health."

The study, "Relations between Health Indicators and Residential Proximity to Coal Mining in West Virginia," will appear in the April issue of the American Journal of Public Health.

Adapted from materials provided by [West Virginia University Health Sciences Center](#).

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