Agricultural Health Study
The Agricultural Health Study seeks to identify factors that promote good health

Agricultural Health Study (AHS) Reviews Long-Term Goals

The AHS is a long-term study to investigate the effects of environmental, occupational, dietary, and genetic factors on the health of the agricultural population. This study will provide information that agricultural workers can use in making decisions about their health and the health of their families. The study is conducted in North Carolina by Battelle CFHRR and in Iowa by the Department of Epidemiology at the University of Iowa. The study is directed by the National Cancer Institute, the National Institute of Environmental Health Sciences, and the US Environmental Protection Agency.

Michael C. R. Alavanja, Dr. P.H.
Project Officer
Occupational and Environmental Epidemiology Branch
National Cancer Institute
Executive Plaza South, Room 8000
Rockville, MD 20852

Aaron Blair, Ph.D.
Assistant Project Officer
Occupational and Environmental Epidemiology Branch
National Cancer Institute
Executive Plaza South, Room 8118
Rockville, MD 20852

Dale P. Sandler, Ph.D.
Chief Epidemiology Branch
National Institute of Environmental Health Sciences
111 T.W. Alexander Drive
PO Box 12233
Research Triangle Park, NC 27709

Jane Hoppin, Sc.D.
Epidemiology Branch
National Institute of Environmental Health Sciences
111 T.W. Alexander Drive
PO Box 12233
Research Park Triangle, NC 27709

Kent Thomas, BSPh
Team Leader,
Agricultural Health Study Pesticide Exposure Study
National Exposure Research Laboratory
U.S. Environmental Protection Agency
MD 205-04
Research Triangle Park, NC 27711

The AHS is part of our ongoing effort to keep you up-to-date regarding the progress of the research and latest findings from the AHS. We hope you will find time to leisurely read about some of our activities and accomplishments.

We appreciate your interest and feedback because you are central to the study’s success. Without you, we would not be able to make new discoveries that may help to improve the health of future generations of farm families.

Be assured that your confidentiality will always be protected. None of our reports identify individual participants. We only provide statistical summaries. If you have questions or concerns about the study, please call us at 1-800-217-1954. You may also want to visit our website at: www.aghealth.org

My sincere best wishes to you and your family.

Michael C. R. Alavanja, Dr. P.H.
Principal Investigator
Agricultural Health Study

North Carolina Office:
Battelle
Centers for Public Health Research and Evaluation
100 Capitola Drive, Suite 200
Durham, NC 27713
1-800-424-7883

Iowa Office:
The University of Iowa
100 Oakdale Campus
N251 Oakdale Hall
Iowa City, IA
52242-5000
1-800-217-1954

www.aghealth.org
Recent findings from the AHS continue to indicate that study participants are generally healthier than others:

- In both states, AHS participants have lower death rates and fewer cases of cancer than people of the same age, sex, and race in their state.
- Study participants are less likely to die from heart disease, diabetes, lung diseases, and cancer compared to others of the same age in these two states.
- Lung cancer rates among study participants are about half that of the general population in North Carolina and Iowa.
- Breast cancer rates are about the same as rates within the general population.
- Less tobacco use and more physical activity among AHS participants may contribute to the lower rates of deaths and cancers.

On the other hand, prostate cancer rates are significantly higher among AHS farmers compared to the general state population for men of the same age. We are conducting additional studies now to learn more about the possible factors that may be related to the risk of developing prostate cancer.

Pesticide exposure may increase the risk of developing Parkinson's disease, a progressive neurodegenerative disease that leads to tremor, slow movements, poor balance, and other symptoms. Using information collected from the entire AHS, we found that:

- Both male applicators and female spouses who used pesticides for more than 400 days in their lifetime had an increased risk of Parkinson's disease.
- Parkinson's disease was also related to high pesticide exposure events such as spills.
- Individuals who used paraquat, cyanazine, trifluralin or 2,4,5-T had an increased risk of Parkinson's disease.

These findings support existing evidence that exposure to some pesticides may increase the risk of Parkinson's disease. We will further evaluate these results in an add-on study called the Farming and Movement Evaluation (FAME) study. The FAME study will provide detailed information on disease, exposures, and genetics. This will enable us to evaluate the role of pesticides and other farm-related exposures in Parkinson's disease.

Pesticides may contribute to Farmer's Lung disease

Among AHS participants, Farmer's Lung disease occurred more often among farmers and spouses who had applied pesticides for more years. Farmer's Lung disease is a rare lung disease generally associated with dairy farming and the handling of moldy hay and grain. Other findings related to Farmer's Lung disease include:

- AHS participants reported 532 cases of Farmer's Lung disease. This represents a small portion of the respondents as only 5% of applicators and 0.2% of spouses reported having Farmer's Lung disease in their lifetime.
- Most cases were in Iowa. This may be related to differences in climate and farming activities in the United States.
- Dairy and poultry farmers had a higher risk of Farmer's Lung disease.
- Individuals who used DDT, lindane, or aldicarb were more likely to report the disease.
- Farmers who had applied pesticides for more than 10 years had a 50% higher chance of reporting Farmer's Lung disease than other study participants. Results were similar among spouses.

Your Participation is Important

Your participation in the AHS is critically important because it allows us to examine various health issues as they affect farmers and their families. As new findings are published, scientists may develop new studies on related issues.

In 2006, we published more than 20 scientific papers and presented results to scientific, agricultural, and general audiences throughout the United States.

Recently published papers and presentations focused on pesticide exposure, respiratory health, reproductive health, neurological disease, and cancer.

Summaries of recent findings can be found at: www.aghealth.org/results.html

Researchers continue to study possible health effects, including health benefits, associated with rural living and agricultural exposures. Your participation makes it possible for doctors and scientists to get better information to continue the study of these topics and more.

In fact, the AHS is the largest study of farmers and their families in the world.