

## No Longer Farming? We Still Need Your Participation

*"I quit farming years ago. Why are you still calling me about this study?"*

This is typical of the response AHS interviewers often encounter when they call participants who have been part of the study since it began more than 10 years ago.

### It's a good question. And here's the answer:



*AHS interviewers practice teamwork to reach participants and update their information by phone.*

**You are more valuable to this research than ever before** because you have such a long history of providing detailed information about your activities and health. No other study has ever collected as much data of this kind relating to farm families. This information becomes even more valuable whenever you are kind enough to update your record through our

telephone interviews. This is true even if you have engaged in no farming activities at all since you were first interviewed.

**Here's why:** Most chronic diseases take years to develop and the signs of these diseases may show up on your medical charts long after you've given up the activities that may have adversely changed your health over the long term.

**For example,** an exposure you had many years ago — maybe to a pesticide, animal, or grain dust — could be linked to a health problem that develops later. If this link is found repeatedly among AHS participants, we can focus on this specific issue through additional studies — and the link might never have been found without the wealth of data you and other participants have provided for this study through the years.

We have always appreciated the time and effort you have given to the study through our interviews over the years — even after some of you have given up most or all of your farming activities. So if you continue to farm, or if you are no longer farming, we look forward to speaking with you to update your information. To help us keep in touch with you, if your phone or address has changed recently, please contact us at **1-800-424-7883**.

Thank you again from all of us at the North Carolina Field Station.

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 CPHRE 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,  
P.O. Box 12233  
Research Triangle Park, NC 27709

**Jane Hoppin, Sc.D.**  
Epidemiology Branch  
National Institute of  
Environmental Health Sciences  
111 T. W. Alexander Drive,  
P.O. 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

EDC 0363



[www.aghealth.org](http://www.aghealth.org)

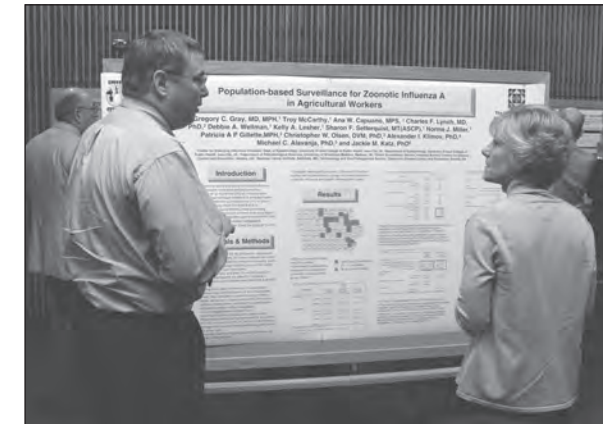


# Agricultural Health Study

North Carolina  
Study Update 2007

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

## Agricultural Health Study (AHS) Reviews Long-Term Goals



*The 2007 annual meeting of the AHS National Advisory Panel included presentations by researchers and an exchange of information about the study's activities.*

In February 2007, more than 60 scientists, pesticide educators, farmers, and other interested parties met at the National Institute of Environmental Health Sciences in Research Triangle Park, North Carolina, to share study findings and to discuss future plans for the AHS. The meeting gave the AHS National Advisory Panel an opportunity to review current research activities and to help researchers examine long-term goals for the study.



The panel meets each year to advise researchers about AHS activities and plans. The panel assures that AHS projects are conducted effectively, while addressing the needs of the agricultural and scientific communities and study participants.

## A Message From Our Study Director



This 2007 newsletter 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](http://www.aghealth.org)

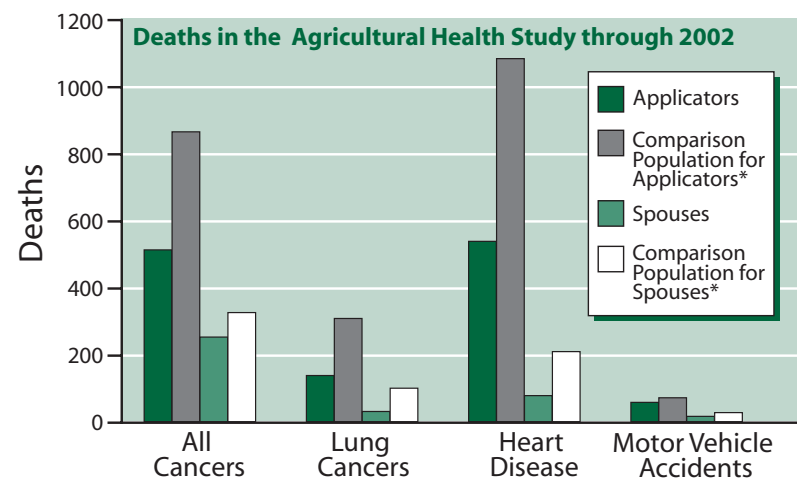
My sincere best wishes to you and your family,

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

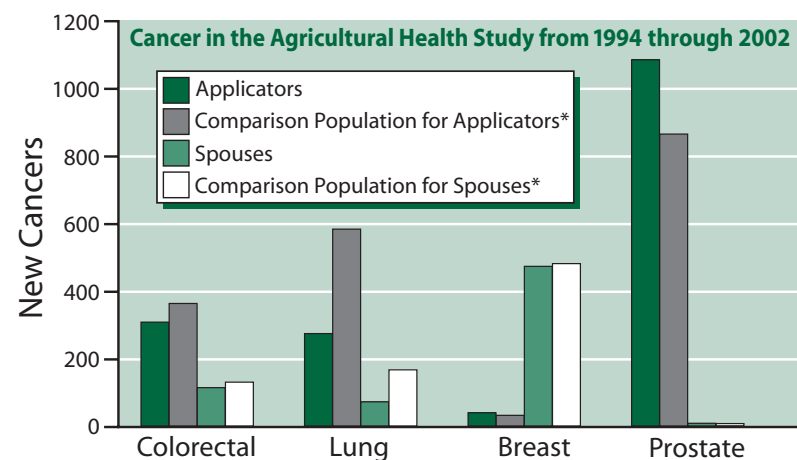
## Recent findings from the AHS continue to indicate that study participants are generally healthier than others

- 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.



\*Comparison population is based on age, state, and sex specific rates of disease.



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## 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](http://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.

## Pesticide exposure has been linked to Parkinson's disease

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.
- Using personal protective equipment was found to reduce the risk of Parkinson's disease.
- 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 2% 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 between North Carolina and Iowa.
- 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 30 years had a 50% higher chance of reporting Farmer's Lung disease than other study participants. Results were similar among spouses.



## AHS Conducts Additional Research Through Specialized Studies

Because of the important information that has been collected over the years from you and other participants, AHS researchers and collaborating scientists are conducting some new projects that build on early results.

These add-on studies will allow researchers to look at special groups of AHS participants to evaluate the links between pesticide exposures, other farming activities, lifestyle factors, and diseases and injuries. For example, scientists are looking at prostate cancer, macular degeneration, and respiratory diseases to learn more about what causes these diseases and how they can be prevented.

We hope that if you are asked to participate in any of these additional studies, that you will say yes. And if you have already participated in an add-on study, we appreciate your contribution very much.

