

Study Update

The Agricultural Health Study (AHS) is a long-term study of agricultural exposures and chronic disease (especially cancer) among commercial and private pesticide applicators (and their spouses, if married) in Iowa and North Carolina. The study is funded primarily by the National Cancer Institute (NCI). The National Institute of Environmental Health Sciences (NIEHS), the U.S. Environmental Protection Agency (EPA), and the National Institute for Occupational Safety and Health (NIOSH) also are working with NCI. We are in the 10th year of the study.

In the first 5 years, 89,658 subjects (58,564 in Iowa and 31,094 in North Carolina) were enrolled in the study. In Iowa, this number included 31,877 private applicators, 21,771 spouses of private applicators, and 4,916 commercial applicators. The Iowa Department of Agriculture and Land Stewardship and Iowa State University Extension helped in enrolling participants through Iowa's Pesticide Applicator Certification Program. Participation in the study has been excellent.

Currently, we are in the second phase of the study. This phase has three parts: 1) a telephone interview, 2) a mailed dietary questionnaire, and 3) a cheek cell sample. The telephone interview asks about pesticide use since enrollment, current farming and work practices, and health changes. The dietary health questionnaire asks about cooking practices and types of foods eaten. Cooking practices and diet may play a role in cancer and other health conditions.

The cheek cell sample is collected by swishing approximately 1 tablespoon of Scope[®] mouthwash in the mouth and then emptying the liquid into a container. All supplies and a stamped, pre-addressed envelope for returning the sample are provided. These cheek cells are used to understand possible links between genetics, chemical exposures, and disease. Information from the cheek cells also helps answer other questions, such as 1) how genetic differences among people affect the body's response to chemicals, and 2) how diet, lifestyle, farming environment, race, ethnic background, age, and other factors may be related to genetic differences. To protect participant confidentiality, multiple safeguards have been put in place so that test results cannot be directly linked to study participants.

As of May 1, 2002, 18,104 private applicators in Iowa have completed some or all of the telephone interview, 11,240 have provided cheek cells, and 11,165 have returned the dietary questionnaire. For spouses of private applicators in Iowa, 14,640 have completed some or all of the telephone interview, 9,689 have provided cheek cells, and 10,517 have returned the dietary questionnaire. We expect to complete the second phase of the study for private applicators and their spouses in 2003. We have not yet contacted commercial applicators but plan to do so in the third phase of the study, which will begin in 2004.



www.aghealth.org

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

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For the last several years, we have annually linked cohort members to mortality and cancer registry incidence databases in both states. In addition, mortality data on the cohort are being obtained every other year from the National Death Index (NDI). Personal identifiers sufficient for linkage are available for the entire Iowa cohort. As of March 2002, 924 deaths and 1,550 newly diagnosed invasive cancers had been identified after enrollment through the year 2000.

Cohort incidence / mortality analyses are currently being conducted.

There are also several completed, ongoing, and planned special studies that involve cohort members. More information about recent results from the Agricultural Health

Study, the study background, frequently asked questions, other resources for agricultural health information, references for Agricultural Health Study publications to date, and information for scientific collaborators can be found on the Web at www.aghealth.org.

We truly value the continuing participation of cohort members in this landmark study of agricultural workers and their families. Because of the valuable information they have already provided, no other people can take their place. This study would not be possible without the cooperation and participation of thousands of these individuals. We thank them for their time and support.

Post-enrollment Newly Diagnosed Invasive Cancers, Agricultural Health Study, 1994-2000

Cancer Site	Iowa	North Carolina	Total
Prostate	416	316	732
Breast	231	155	386
Colon and rectum	184	146	330
Lung	93	149	242
Non-Hodgkin's lymphoma	62	49	111
Other	564	416	980
Total	1,550	1,231	2,781

Cause-specific Mortality in the Agricultural Health Study, 1994-2000

Cancer Site	Iowa	North Carolina	Total
Cancer	381	393	774
Heart disease	268	401	669
Accidents	99	102	201
Respiratory disease	34	70	104
Cerebrovascular disease (stroke)	23	70	93
Diabetes	19	27	46
Other	100	128	228
Total	924	1,191	2,115

The Agricultural Health Study 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 Iowa by the Department of Epidemiology at the University of Iowa and in North Carolina by Battelle CPHRE. The study is directed by the National Cancer Institute, the National Institute of Environmental Health, and the US Environmental Protection Agency.

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