



# Agricultural Health Study

NC OFFICE • BATTELLE • CENTERS FOR PUBLIC HEALTH RESEARCH & EVALUATION  
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## Prostate Cancer

*Prostate cancer is one of the diseases of particular interest to the Agricultural Health Study because it is the most common cancer among American men and because it has been reported in other studies to be high among farmers.*

Does research in the Agricultural Health Study indicate that pesticide applicators are at increased risk for prostate cancer?

Research in the Agricultural Health Study shows that the incidence of prostate cancer among licensed restricted-use pesticide applicators is slightly higher (14%) than it is for other men in North Carolina and Iowa.

Risk factors observed in other studies—age and a family history of prostate cancer—are also observed as risks for participants of this study.

For men with a father or brother with prostate cancer, their own risk for prostate cancer doubled (a two-fold increase).

What do findings from the Agricultural Health Study tell us about the risk of prostate cancer among pesticide applicators?

Most of the chemicals studied do not show an association with prostate cancer, but there is an observed increase of prostate cancer among men in the Agricultural Health Study who used *methyl bromide*.

The increase is reported for both North Carolina and Iowa—and for both private pesticide applicators and commercial applicators.

Agricultural Health Study scientists caution that this finding *does not* firmly establish an association between methyl bromide and prostate cancer, and they will study the association more closely themselves.

Six other chemicals are associated with an increased risk of prostate cancer among men in the study who also have a brother or father with prostate cancer.

Those six chemicals are *butylate*, *chlorpyrifos*, *coumaphos*, *fonofos*, *permethrin*, and *phorate*.

So far, scientists have not found an association between these six chemicals and prostate cancer for study participants *who do not have a family history of prostate cancer*.

These new findings will be evaluated further by the study to determine if some individuals are especially susceptible to risks from certain chemicals.



What causes some individuals or families to be more vulnerable to exposures than others?

It is not clear yet, but one of the goals of the Agricultural Health Study is to address this question and provide information to the scientific community and the public.

By analyzing the biological samples (the mouthwash samples provided by study participants), we will be able to explore that question more fully in the Agricultural Health Study.

Are farmers at less risk for prostate cancer if they use personal protective equipment?

We do not know the answer to that question yet. This and other compelling questions need to be studied more closely.

In the meantime, farmers and pesticide applicators should take precautions to avoid exposure and contact with chemicals by following the safety steps described on the manufacturer's product label.

## Thank You!

Participants in the Agricultural Health Study are helping scientists address new issues in a way not possible in any other study. *For the first time ever*, scientists are able to study the associations between genetics, exposures, protective measures, and prostate cancer.

To all who have participated in the AHS, *thank you!*

Is there more that the Agricultural Health Study can do to understand possible risks for prostate cancer?

Yes. A small group of men with prostate cancer will be compared to a similar group of men who do not have the disease in a more focused study called a *case-control* study.

In this special study, which will be conducted in North Carolina and Iowa, the Agricultural Health Study will learn more about how work practices, lifestyle, diet, aging, genetics, and health relate to the incidence of prostate cancer.



Learn More...

More complete information about prostate cancer and other study findings from the Agricultural Health Study is given at [www.aghealth.org](http://www.aghealth.org).

Booklets and other forms of information published by the National Cancer Institute (NCI) are available by phone at 1-800-422-6237 (1-800-4-Cancer); through the mail at NCI Public Inquiries Office, 6116 Executive Boulevard, Room 3036-A, Bethesda, MD 20892-8322; or on their website at [www.cancer.gov](http://www.cancer.gov).

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 North Carolina by Battelle Centers for Public Health Research and Evaluation and in Iowa by the Department of Epidemiology at the University of Iowa. This study is directed by the National Cancer Institute, the National Institute of Environmental Health Sciences, and the US Environmental Protection Agency. Research results are being developed, peer reviewed, and made available to the scientific, medical, and agricultural communities.

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