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## **IMMEDIATE RELEASE**

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## AIR FORCE STUDY STRENGTHENS LINK BETWEEN AGENT ORANGE AND DIABETES

The Air Force released its latest report today summarizing the results of the 1997 physical examination of 2,300 Vietnam veterans exposed to Agent Orange, including the strongest evidence to date that herbicide exposure is associated with diabetes, and some of its known complications. As with previous reports, there is no consistent evidence that Agent Orange is related to cancer. The National Academy of Sciences will review the report along with many other studies on herbicide and dioxin exposure to make a report to the Secretary of Veterans Affairs to assist him in decisions related to compensation.

The Air Force Health Study (Ranch Hand Study) was named after the operation responsible for spraying herbicides to deny cover and destroy crops of the Viet Cong. Since the first examination in 1982, the Air Force has tried to determine whether long-term health effects exist in the Ranch Hand flyers and ground crew, and if they can be attributed to the herbicides used in Vietnam, mainly Agent Orange and its contaminant dioxin.

Although previously reported in the 1992 study, this report includes the strongest evidence to date that Agent Orange is associated with adult-onset diabetes. The 1997 results suggest that as dioxin levels increase, not only are the presence and severity of adult-onset diabetes increased, but the time to onset of disease is also decreased. A 47 percent increase in diabetes was seen in those with the highest levels of dioxin. This is particularly strong evidence, since dioxin is the component of Agent Orange linked to many health effects in laboratory animals.

Cardiovascular disease findings were mixed. As an overall group, Ranch Hands examined in 1997 have experienced a 26 percent increase in heart disease, but disease risk was not increased in Ranch Hands with high dioxin levels. However, within the Ranch Hand group, two specific measures of heart disease, the presence of high blood pressure and the percentage of veterans with evidence of prior heart attacks indicated by electrocardiogram, did tend to increase with dioxin levels.

While the Air Force Health Study indicates that adult-onset diabetes and cardiovascular disease seem most likely related to herbicide exposure, biological processes relating herbicide exposure with diabetes or cardiovascular disease have not been described, and until such relationships are found, these statistical findings may not reflect cause and effect. In recognition of the need for biological studies, the Air Force has funded research at two separate academic institutions in an attempt to explain any biological relation between dioxin and diabetes.

At the end of 15 years of follow-up, the Ranch Hand Study has found no consistent evidence that dioxin exposure is related to cancer. Without regard to dioxin, Ranch Hands as a group exhibited a six percent increase in the risk of cancer relative to the comparison group; however differences by military occupation were inconsistent and therefore do not suggest that herbicide or dioxin exposure is related to cancer. For example, the Ranch Hand enlisted ground crew, the subgroup with the highest dioxin levels and presumably the greatest herbicide exposure, exhibited a 22 percent decreased risk of cancer.

Another finding of the study is a loss of sensation in the feet, which increased with dioxin levels. Finally, several blood tests regarding liver function and lipids were slightly elevated, and did tend to increase with dioxin level. However, these tests may be elevated for many reasons, are not a disease by themselves, and cannot be explained entirely by any other finding in the study.

The report recognizes two major limitations to the study. First, the results cannot be generalized to other groups (such as all Vietnam veterans or Vietnamese civilians) who may have been exposed in different ways and to different levels of herbicide. The Air Force cannot determine what effect herbicides or dioxin have at levels other than those found in the Ranch Hand Study group, or from other sources such as contaminated food. Groups with higher exposures may well have