Agent Orange Review

Vol. 4, N0. 3 | *Information for Veterans Who Served in Vietnam* | October 1984

CDC Releases Findings Of Birth Defects Study

The Centers for Disease Control in Atlanta released a major new study showing that there was no evidence to support the position that Vietnam veterans have had a greater risk than other men of fathering babies with major birth defects.

A full report on the study was released on August 17, in conjunction with the publication of an article on the methodology, results and conclusions of the study in the "Journal of the American Medical Association."

The study was designed to determine if veterans who served in the military in Vietnam have been at increased risk of fathering babies with major structural birth defects.

A primary reason for the study was the concerns expressed by some Vietnam veterans that they may have suffered from a variety of ailments as a result of their military service in Vietnam and may have an increased risk of fathering babies with birth defects.

Selection of Cases and Controls

The case-control study was based on the experiences of parents of selected babies born in the metropolitan Atlanta area during the years 1968 through 1980.

The babies in the case group were those with serious structural congenital birth defects registered by the Metropolitan Atlanta Congenital Defects Program. A serious birth defect was defined as one that could be associated with premature death, cause substantial handicap, or require surgery or extensive medical care. The number eligible for this group was 7,133.

Control group babies -- babies born without defects -- were selected from among the 323,421 babies born in the same Atlanta area during 1968 through 1980. The control group babies were matched to babies in the case group according to the frequency of matches for race, year of birth and hospital of birth. The number of control group babies was 4,246.

About the "Review"...

"Agent Orange Review" is prepared by VA's Office of Public and Consumer Affairs. The "Review" is published periodically to provide information on Agent Orange to concerned veterans and their families.

This issue contains information on:

- the Centers for Disease Control's birth defects study;
- health care services under Public Law 97-72; and
- other Agent Orange-related research.

For additional copies of this issue, write VA's Office of Public and Consumer Affairs (063), 810 Vermont Ave. NW, Washington, DC, 20420.

If you have any questions about your Agent Orange examination, contact the environmental physician at the VA medical center where you had the examination. If you have questions about VA benefits or Agent Orange, contact the VA facility nearest you. The phone number can be found in your telephone book under "U.S. Government" listings.

If you would like to be added to the mailing list to receive the "Review," please send your name, complete address and social security number (if you are a veteran) to the VA Data Processing Center (200/392), 1615 E. Woodward St., Austin, TX 78772, Attn: Agent Orange Clerk. Changes of address should be forwarded to the same Austin address, along with your mailing label.

If you know someone who has had an Agent Orange Registry exam and is not receiving the "Review," please have that individual follow the instructions just described in order to be added to the mailing list.

Information about the families of babies in the case and control groups was gathered during interviews in 1982 and 1983 with the babies' mothers and fathers.

Questions about reproductive history and a variety of exposures (occupation, chronic diseases, drugs) were asked. Special emphasis

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was placed on obtaining a history of the father's military service.

For purposes of the study, a veteran was defined as a father who had served in the U.S. military at any time in his life. A Vietnam veteran was defined as a father who had served in the U.S. military in Vietnam before the conception of his baby. Each Vietnam veteran was asked if he believed he had been exposed to Agent Orange.

The Army Agent Orange Task Force also gave most Vietnam veterans a graded score reflecting their estimated opportunities for exposure to Agent Orange (the Exposure Opportunity Index). Two separate exposure opportunity scores were assigned, based on information from the veterans themselves and information on occupation, location and dates recorded in military records.

The accuracy of Vietnam veterans' self-reports of Agent Orange exposure is unknown, as is the accuracy of the exposure index. The records of troop movements and herbicide use available today were maintained for military use and not for the purpose of estimating exposure for scientific studies.

Analysis of Data

The birth defects affecting the case babies were categorized into 96 groups -- by international diagnostic codes and combinations of these codes. One group combined all types of birth defects.

For each of the 96 groups, four hypotheses were tested:

1. Veteran Status I to determine whether the risks of all veterans (not just Vietnam veterans) of fathering babies with birth defects were different from those of nonveterans;
2. Vietnam Veteran Status -- to determine whether the risk of Vietnam veterans was different from that of other men (this was the primary purpose of the study);
3. Agent Orange Exposure Opportunity Index -- to determine whether the risk of fathering a baby with birth defects was related to the exposure opportunity index; and
4. Self-Reports of Agent Orange Exposure I to determine whether Vietnam veterans who said they believed they had been exposed to Agent Orange were at a different risk than other men.

Three additional issues related to Vietnam military service also were evaluated:

1. Vietnam Veteran Birth Defect Syndrome -- to determine whether fathers of babies with particular combinations of birth defects were more frequently Vietnam veterans than were the fathers of control group babies;
2. Viemam Veterans' Risks of Fathering Several Affected Babies -- to determine whether Vietnam veterans have had an increased risk of fathering more than one baby with birth defects; and
3. Malaria and Anti-Malaria Medicine -- to determine whether Vietnam veteran fathers had contracted malaria in Vietnam or if they had taken medicine for preventing malaria.

Study Results

Over all, 69.9 percent of eligible mothers and 56.3 percent of eligible fathers completed interviews. An additional one percent or so of the mothers and fathers partially completed interviews to the point that it was possible to obtain the father's military history.

Four hundred and twenty-eight fathers of the case group babies were Viemam veterans and 268 fathers of the control group babies were Vietnam veterans. The non-Viemam veteran case group fathers numbered 4,387; the non-Vietnam veteran control group fathers numbered 2,699.

Estimates of the risk of veterans' (excluding Vietnam veterans) fathering babies with all types of birth defects combined is presented in Table 1. Their risk is compared to that of men who never served in the Armed Forces. The non-Vietnam veterans have only 94 chances of fathering babies with birth defects for every 100 chances by nonveterans.

Table 1.--Risks of Non-Vietnam Veterans' Fathering Babies with Birth Defects (all types combined), Compared to Nonveteran Fathers

Group	Non-Vietnam Veteran Fathers	Nonveteran Fathers
Babies with Birth Defects	1,659 (38%)	2,727 (62%)
Babies without Birth Defects	1,047 (39%)	1,652 (61%)

Estimates of the risk of Vietnam veterans' fathering babies with birth defects is presented in Table 2. Their risk was compared to that of non-Vietnam veterans and nonveterans. The Vietnam veterans have only 97 chances of having babies with birth defects for every 100 chances by the non-Viemam veteran and nonveteran fathers. Vietnam veterans, therefore, have no greater chance of fathering babies with birth defects than other fathers.

Table 2.--Risks of Vietnam Veterans' Fathering Babies with Birth Defects (all types combined), Compared with All Other Fathers

Group	Vietnam Veteran Fathers	All Other Fathers[a]
Babies with Birth Defects	428 (9%)	4,387 (91%)
Babies without Birth Defects	268 (9%)	2,699 (91%)

[a]Includes non-Vietnam veterans and nonveterans.

With few exceptions, the same type of finding applied to Vietnam veterans' risks for the remaining 95 groups of birth defects. The same overall pattern applied to the tests of hypotheses regard-

Agent Orange Research Update

Dioxins and Furans in Adipose Tissue

VA and the Environmental Protection Agency (EPA) entered into an interagency agreement to study the levels of dioxin in adipose tissue (or fat) from a selected group of men in the Vietnam-Era age bracket.

EPA has been collecting fat samples for its National Human Adipose Study since 1970. The samples are obtained from the bodies of persons who have died of injuries or diseases that cause death within a relatively short period of time. These samples from the general population were analyzed for residues of selected pesticides and toxic chemicals.

Additional samples are still available for analysis, including tissue samples of more than 500 men born between 1937 and 1952. Many had served in the military during the Vietnam Era, and some had served in Vietnam when Agent Orange was sprayed.

Five hundred and twenty-eight specimens have been determined to be eligible, based on age and sex, and are available in EPA's archive samplings. Four hundred and ninety-four specimens of that total have been identified by social security number and name. Eighty of these have been identified as veterans using VA files.

A list of 494 names and/or social security numbers will be sent to the National Personnel Records Center to determine veteran status and if they served in Vietnam. EPA expects that between 30 and 50 of these specimens would be those of Vietnam veterans. The Department of Defense may assist VA in determining the likelihood of Agent Orange exposure of those who served in Vietnam.

Through individual contract laboratories, VA will measure dioxin levels in samples from the identified Vietnam veterans and compare the results with the dioxin content in the samples taken from other men.

The study' should establish data on dioxin levels in the U.S. male population and should indicate whether military service, especially in Vietnam, has had an effect on dioxin levels in fat tissue.

Vietnam Veteran Mortality Study

VA is conducting a Vietnam veteran mortality study to compare the mortality patterns and specific causes of death between veterans who served in Vietnam and veterans without Vietnam service.

It is estimated that approximately 300,000 Vietnam and Vietnam-Era veterans have died since the start of the Vietnam confiict. This number includes approximately 52,000 combat deaths.

VA has used computer records to identify a group of approximately 75,000 deceased veterans who served during the Vietnam Era (1964-1975). Cause-of-death data have been obtained from death certificates, and histories of military, service have been obtained from military records.

VA recently received approval from the National Center for Health Statistics to use the National Death Index. This information will assist VA in developing a death certificate-search mechanism for veterans whose records cannot be found by other methods.

The Social Security Administration has agreed to search its records to verify the vital status of untraced veterans for the study and to assist in determining their place of death.

Various VA departments and offices are providing assistance in the death certificate search.

All fifty states have indicated their willingness to search their records and locate veterans' death certificates, if needed.

The mortality study will determine whether Vietnam veterans have died from unusual diseases or as a result of specific causes -- such as suicide or cancer -- in higher than expected proportions.

VA projects that the study will be completed in 1985.

ing the Agent Orange Exposure Opportunity Index and those regarding Vietnam veterans' self-reports of Agent Orange exposure.

The exceptions to this general pattern are: the estimated risks of fathering babies with spina bifida (a defect in the bony encasement of the spinal cord); cleft lip, with or without cleft palate; and defects in the categories of "other neoplasms" (abnormal growths, such as tumors and cysts) were higher for veterans and for Vietnam veterans who had higher Agent Orange Exposure Opportunity Index scores. In addition, the estimated risks of fathering babies born with sex organ defects were higher for Vietnam veterans who stated that they had contracted malaria while in Vietnam. Vietnam veterans in general had significantly lower estimated risks of fathering babies with complex cardiovascular defects.

Assessing Vietnam veterans' risks associated with Agent Orange exposure is difficult, and the available methods for estimated exposure are imperfect. Thus, it is unknown whether the few positive associations in the study reflect true effects of exposure or are chance occurrences.

Conclusions

The conclusion that Vietnam veterans in general do not appear to have been at increased risk suggests that if effects have been caused by exposure, those effects are small and are limited to select groups of veterans, and/or are limited to rare types of defects.

The conclusion that Vietnam veterans in general have not fathered babies with all types of birth defects combined, at higher rates than other men, is based on relatively strong evidence. This study did not identify the causes of the birth defects in the babies of Vietnam veterans nor in the babies of men who did not serve in Vietnam. The causes of the vast majority of birth defects remain unknown.

Two or three percent of the babies born to Vietnam veterans in the future will have serious birth defects, just as will a similar proportion of babies born to other men. The discovery of the causes of these defects, discovery that may make prevention possible in the future, will depend on other research.

Health Care for Veterans Continues Under Public Law 97-72

Public Law 97-72 -- the Veterans' Health Care, Training and Small Business Loan Act of 1981 -- authorized VA to provide concerned, eligible veterans with appropriate medical care and treatment for illnesses or disabilities possibly related to Agent Orange exposure.

Since Public Law 97-72 was signed in November 1981, VA has provided hospital care or nursing home care, as well as outpatient care, which is designed to prepare a veteran for hospital care, provide post-hospitalization followup care or prevent hospitalization. Such health care services are provided without regard to the veteran's age, service-connected status or the veteran's inability to defray the costs of such care elsewhere.

More than 20,000 inpatient admissions and more than one million outpatient visits have occurred for the treatment of illnesses or disabilities possibly related to Agent Orange exposure. These statistics represent numbers of admissions and outpatient visits, not the actual number of veterans receiving treatment.

Based on average use rates, it is estimated that in fiscal year 1982, approximately 6,000 veterans were hospitalized and approximately 62,000 were seen as outpatients. In fiscal year 1983, approximately 6,900 veterans were hospitalized and 73,000 were seen as outpatients. These two groups -- inpatients and outpatients -- may include some of the same individuals.

Only limited data are available for the current fiscal year, but the information to date suggests that the level of inpatient admissions will be reduced, while the number of outpatient visits will be somewhat higher than that experienced during fiscal years 1982 and 1983.

The following set of figures reflects the cumulative totals of inpatient and outpatient care provided under PL 97-72:

Fiscal Year	Inpatient Admissions	Outpatient Visits
1982	9,400	369,000
1983	10,900	432,000
1984 (7/31/84)	3,100	363,700

Health care services authorized by Public Law 97-72 are provided to any veteran of the Vietnam Era (August 5, 1964-May 7, 1975) who, while serving in Vietnam, may have been exposed to dioxin or to a toxic substance in a herbicide or defoliant used for military purposes. Health care services may not be provided under this law for the care of conditions that are found to have resulted from a cause other than exposure to these substances. However, veterans who are not provided needed medical care under Public Law 97-72 may be furnished care if they are eligible under any other legislation.

NO6-84-3

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October 1984

Veterans Administration

Data Processing Center
ANC (392)
1615 E. Woodward St.
Austin, TX 78772

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