

**Citizen's Guide to the
Case-Control Study of Childhood Cancers in Dover Township:
Interim Report
December, 1999**

Part 2: Observations to Date

Why an Interim Report?

The Case-Control Study of Childhood Cancers in Dover Township is a multi-year study. To keep the community informed of the progress of the study, and to provide the results of the preliminary analyses conducted, the New Jersey Department of Health and Senior Services (NJDHSS), in cooperation with the Agency for Toxic Substances and Disease Registry (ATSDR), is releasing this Interim Report. It is important to stress that this Interim Report does not contain conclusions regarding possible explanations for the elevations of childhood cancers.

What risk factors were analyzed as part of the Interim Report?

The Interim Report contains information from case and control children and families on demographic, pregnancy and birth characteristics; family medical history; health, medical conditions and medical procedures; dietary factors; exposure to tobacco smoke and alcohol; and household exposures to chemicals, animals, and household appliance electromagnetic fields.

What was observed by conducting these preliminary analyses?

For most factors studied, there were no significant differences in potential exposure to risk factors between the case and control children. Analyses included 40 case and 159 control children for the Interview Study, and 48 case and 480 controls for the Birth Records Study.

The highlights of the information collected and analyzed are presented here. For the Birth Records Study, demographic, pregnancy, and birth characteristics information is the only risk factor group included in the Interim Report. The remaining risk factors discussed are for the Interview Study only.

demographic, pregnancy and birth characteristics: This category includes reported or recorded information about the parent's age at the time of the child's birth, parent's highest level of education, mother's previous pregnancy history, the health of the child at birth, and other characteristics.

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Interview Study

Similarities between cases and controls:

- mother's age at time of birth
- mother's previous adverse pregnancy outcomes (such as miscarriage or stillbirth)
- child's birth weight

More common among cases than controls:

- being born to a mother who gave birth to four or more children (for children with leukemia, diagnosed before 5 years of age at the time of diagnosis)

Differences between cases and controls, but no pattern:

- parental education level

Birth Records Study

Similarities between cases and controls:

- mother's age at the time of the birth
- mother's complications of pregnancy and labor

Less common in cases than controls:

- being the first born child
- born to women with less than adequate prenatal care (nervous system cancers)

More common in cases than controls:

- high birth weight
- born to women with less than adequate prenatal care (leukemia)

family medical history: This category includes reported cancer history in the child's biological relatives (including parents, siblings and grandparents), and history of birth defects and inherited diseases in the child's siblings.

Similarities between cases and controls:

- frequency of reported inherited problems and birth defects in siblings
- family history of cancer

More common in cases than controls:

- a history of any type of cancer in a parent (children with nervous system cancer)

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health, medical conditions and medical procedures: This large category covered reports of specific infections and illnesses in both the mother

(during pregnancy) and the child. It also includes the areas of medical x-rays, immunizations, and antibiotic use.

Similarities between cases and controls:

- mother's illnesses during pregnancy
- child's history of previous illnesses (other than cancer)

More common in cases than controls:

- antibiotic use for ten days or longer by the child
- exposure of children to diagnostic x-rays

To account for the possibility that the x-rays were used as part of the diagnosis of cancer, reported x-rays received in the year prior to diagnosis were eliminated from the analysis. When these x-rays were not considered, there was little difference between case and control children.

dietary factors: This category includes reported usual consumption of cured meats, fresh fruits and vegetables, multivitamins, and tap water by the mother during pregnancy and by the child.

Similarities between cases and controls:

- consumption of fruit and vegetables by mothers and children

Less common in cases than controls:

- mother's use of multivitamins during pregnancy (leukemia)
- mother's consumption of cured meats during pregnancy (leukemia)
- child's consumption of cured meats (brain and central nervous system cancers)

More common in cases than controls:

- mother's daily consumption of above average amounts of tap water (more than four glasses per day) (leukemia)

exposure to tobacco smoke and alcohol: There was little exposure to these risk factors, and little difference was observed between cases and controls.

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household exposures to chemicals, animals, and household appliance electromagnetic fields: This category includes mother's (during pregnancy) and child's reported exposures to household and garden chemicals, electric blankets and heated water beds, household pets,

farm animals, ducks and geese.

Similarities between cases and controls:

- household pesticide exposures (home and garden)
- child living with pets

More common in cases than controls:

- child's use of electric blanket, electric mattress pad, or heated water bed (leukemia)

What does this mean? The high participation rate of both case and control families lends strength to the overall quality of this study. However, since the analyses of environmental and parental occupational risk factors are still underway, **conclusions are premature at this point.**

For most of the risk factors discussed in this Interim Report, there were no differences between case and control children and families. In some instances where there were differences between the two groups, observations made in this case-control study were similar to those reported in other scientific studies. These include observations on the child's birth weight, and the mother's use of multivitamins during pregnancy. This study and some other studies report that use of electric blankets is more common in children with certain cancers than control children, although other studies do not find this association. Finally, a number of published studies show that consumption of cured meats is a risk factor for childhood cancers, particularly brain cancers, which was not found in this study.

Differences between case and control children were also observed regarding tap water consumption. Although leukemia was elevated among children born to women who consumed higher than average amounts of tap water daily during pregnancy, nervous system cancer was not elevated. Information regarding the water source and the length of time that the water source was used is not yet available.

What are the next steps toward the development of a final report? Other factors, such as source of drinking water, residential proximity to hazardous sites, parents' occupations, and exposure to pollutant sources are still under investigation. Those observations, along with the information contained in this Interim Report, will be analyzed together and be included in the final report of the childhood cancer study. This is expected to be completed in the latter part of 2000.

For a copy of the Case-Control Study of Childhood Cancers in Dover Township: Interim Report, please call the NJDHSS at (732) 505-4188 or (609) 633-2043. The report is also available on the NJDHSS website at www.state.nj.us/health