



Child Health and Development Studies

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Letter from the Director



Dear Child Health and Development Studies (CHDS) Participants,

Happy Fall 2010! This is the first CHDS newsletter, and I'm pleased to have a new way to reach more of you to share research results and study news. For some of you, it's been 50 years since you've heard from us!

The CHDS began over 50 years ago and because of the continued interest of participants like you, we've been able to conduct important follow-up studies with CHDS "children," who are now adults, and include their children (we call them CHDS "grandchildren").

It's an exciting time at the CHDS! This year, we are launching two new follow-up studies with CHDS children and two CHDS research papers were published this summer in scientific journals—all of them highlighted in this issue of the newsletter. The CHDS staff has been working hard the last few months. We have added several new staff members and planned the launch of our new studies.

We truly enjoy hearing from CHDS families and look forward to being in touch with our participants again.

Thanks for your past and future participation in the CHDS—you're making a difference!

Barbara Cohn, PhD, Principal Investigator

CHDS Launches Two New Studies

The CHDS began as a study of pregnancy, early family life and child development in 1959. More than 15,000 pregnant women who were Kaiser Foundation Health Plan members from 1959 to 1967 in the East Bay enrolled in the study, and many families participated in follow-up studies on early childhood. Other follow-up studies in adolescence and adulthood included several thousand CHDS children, who today are middle-aged. The CHDS is committed to investigating how health and disease are passed on between generations—not just by genes but also through social, personal and environmental surroundings.

It is a momentous year for the CHDS. The organization will launch two major studies (see pages 2 and 3)

focusing on adult health: the Disparities Study and the Three Generations Study (3Gs). The Disparities Study, funded by the National Institute of Child Health and Human Development, will focus on how and when health disparities developed in the CHDS population. The 3Gs Study, funded by the California Breast Cancer Research Program, will examine environmental causes of breast cancer and other important women's health topics. The CHDS also received grants to continue working with existing CHDS data.



CHDS staff members look forward to being in touch with participants again while these new studies are being carried out.

The CHDS depends on the continuing participation of CHDS mothers, children and grandchildren in follow-up studies. These studies provide valuable information to scientists working to prevent disease. Participants make it possible for health

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Does Pregnancy-Induced High Blood Pressure Put Women at Risk for Heart Disease Later in Life?



High blood pressure during pregnancy accompanied by protein in the urine is a serious pregnancy complication known as preeclampsia. It can affect growth of the fetus and put the mother's life in danger.

Preeclampsia may also influence heart disease risk later in life, and earlier research has suggested that it is an indication of pre-existing heart disease risk.

In a new study published in the medical journal *Hypertension*, CHDS researchers found that the earlier a woman develops preeclampsia, the higher her risk is of death from heart disease later in her life. Researchers used medical records of CHDS moms while they were pregnant and information about the moms who have died since the study began. The higher risk was independent of other heart disease risk factors like

diabetes, body mass index and pre-pregnancy high blood pressure. The study shows that preeclampsia may indicate risk of heart disease more than a combination of the other risk factors, though there could be an underlying cellular mechanism the researchers weren't able to study.

The researchers recommend targeting women who develop preeclampsia for early heart disease prevention programs.

Mongraw-Chaffin, M.L., Cirillo, P.M. and Cohn, B.A., *Preeclampsia and cardiovascular disease death: prospective evidence from the child health and development studies cohort*. *Hypertension*, 2010. 56(1): p. 166-171.

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professionals to identify risk and protective factors for disease, even before birth. Several recent studies have shown that early life exposures can influence adult health (see above article and opposite page).

Because the CHDS is a multi-generational study, no one can replace you or your family. If you are contacted, please consider taking part in these new studies!

The CHDS is a project of the Oakland-based Public Health Institute. The CHDS has been fortunate to have been supported by the National Institutes of Health ever since the first woman was recruited into the study.

CHDS Examines Health Disparities

The inequalities in health between different gender, racial, ethnic and socioeconomic groups received a lot of attention in the media during this year's debates on health care reform. Unequal access to health care and uneven distribution of disease between groups have signaled to health care professionals and lawmakers that these inequities need to be examined.

Earlier this year, the CHDS and researchers at Columbia University's Mailman School of Public Health launched a new follow-up study of CHDS children to examine health disparities. Because CHDS children have been followed since birth, the

Disparities Study will enable scientists to better identify when and how health inequalities develop and ways to prevent them. Blood samples collected for the study will also provide valuable information about whether there are disparities in biological markers of health, like cholesterol, and how such biological markers relate to health disparities.

The three-year study will include more than 600 CHDS children who still reside in California.

"The Disparities Study will enable scientists to better identify when and how health inequalities develop"

A Changed Perspective on DDT

In the 1940s, agricultural and domestic use of the insecticide DDT was widespread. DDT had become popular as an insecticide during World War II when the military used it to protect troops against insects that carried malaria and typhus. DDT quickly became a popular household pest control product.

Scientists began investigating the health effects of DDT and DDE, the chemical produced when the body breaks down DDT, in the late 1940s. The chemicals are readily absorbed by soil and because they are stored easily in fat, DDT and DDE accumulate in the environment and our food. Scientists use a ratio of DDT to DDE to measure exposure. Higher levels of the ratio indicate higher levels of exposure. In humans, DDT and DDE may play a role in tumor growth. Studies have shown that DDT is passed onto offspring from individuals who were exposed in earlier decades.

In August, the CHDS published a study in the health journal *Archives of Occupational and Environmental Health* that demonstrated an association between testicular cancer and exposure to DDT and DDE in the womb. CHDS researchers compared the ratio of DDT to DDE in mothers of sons diagnosed with testicular cancer to mothers of sons without the disease. Mothers of sons with testicular cancer had higher ratios of DDT to DDE in their blood at the time of pregnancy, suggesting these babies had higher exposures in the womb.

The number of cases of testicular cancer in the study was very small, but the research builds on an earlier study the CHDS conducted several years ago that found CHDS daughters whose mothers had higher ratios of DDT to DDE had more difficulty getting pregnant.

DDT and DDE may play a role in the development of testicular cancer



Advertisement in a 1940s issue of *Women's Home Companion*

by disrupting the body's natural hormone system. Evidence suggests some forms of testicular cancer develop early in life, and this study is important because it is the first to look at maternal levels of DDT and DDE at the time of pregnancy and compare them to adult diagnoses of testicular cancer.

Cohn, B., Cirillo, P. and Christianson, R., *Prenatal DDT Exposure and Testicular Cancer: A Nested Case-Control Study*. *Archives of Occupational and Environmental Health*, 2010. 65(3): p. 127-134.

Three Generations Study Under Way



The CHDS staff kicked off the Three Generations Study (3Gs) in September and will be inviting CHDS daughters to participate. The study will provide the opportunity to investigate how diseases like breast cancer may pass from one generation to the next or be caused by environmental exposures, even before birth.

More than 4,000 CHDS daughters are expected to participate in the

study over a three-year period. The women will be interviewed by phone, and some will be visited at home to document their body measurements and collect blood, urine and saliva samples. Some CHDS granddaughters will also be included in the home visit.

The 3Gs Study is unique because it will combine information from CHDS moms obtained in the 1960s and new information collected from CHDS daughters and granddaughters. This data will provide valuable information about all critical periods of breast development—in the womb and during adolescence, pregnancy and menopause—allowing scientists to

look at risk factors during each of these time periods and over the lifespan.

The study will also examine other important women's health concerns like heart disease, osteoporosis and other types of cancers.

“This data will provide valuable information about all critical periods of breast development, allowing scientists to look at risk factors during each of these time periods and over the lifespan”



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The CHDS Difference

The CHDS began over 50 years ago. We have followed up with thousands of families since they first participated, creating a rich database on health across the lifespan. Because of this foundation, the CHDS is a scientific treasure, allowing important questions about health to be answered without waiting 50 years. Through these studies, CHDS scientists work to uncover ways to improve health and prevent disease early in life. CHDS scientists study child development, fertility, cancer and mental health.

Because of the CHDS, doctors know:

- Which medicines pregnant women can take safely to reduce nausea and which medications for mental health disorders and fluid retention may be harmful or require more testing
- Smoking during pregnancy and exposure to second-hand smoke can be harmful to an unborn child
- How to assess normal gains in weight and height for children



CHDS Kids – 1960s

- Why some men and women are more at risk for infertility
- Protective factors for aging men and women that may help prevent cancer, heart disease, asthma and diabetes