NURSES' HEALTH STUDY NEWSLETTER

Volume 1, June 1994

This edition of our newsletter marks the start of a new tradition - a combined Nurses' Health Study (NHS) and Nurses' Health Study II (NHSII) Newsletter, which we will send you every summer.

The NHS began in 1976 with the enrollment of 121,700 married, female registered nurses originally living in 11 U.S. states. Participants in NHS were 30-55 years old when the study began. After that study was successfully established, we recognized the value in extending the age distribution of participants to explore a wider range of issues, and to address long-term effects of diet and lifestyle practices. Thus, NHSII was launched in 1989 among 116,680 female registered nurses from 14 states, aged 25-43. Both studies are funded by the National Institutes of Health and are conducted using biennial questionnaires (on alternate-year cycles) to collect information on reproductive factors, lifestyle practices and nutritional factors in relation to the occurrence of breast cancer, other major illnesses, health, and well-being in women.

The goal of the studies is to learn more about the causes of these conditions, and thereby find the means for their prevention. Although all the participants were originally nurses, the studies are not primarily of nursing, but rather are investigations into a very broad range of women's health issues. You were chosen because of your specialized education and demonstrated dedication to promoting health. Thus, even if you are no longer active in the nursing profession, your continued participation is extremely valuable. The scientific integrity of the studies and their results depend heavily on high rates of follow-up of all participants.

We merged the two newsletters because we feel that results from one study population are interesting and noteworthy to the other population, as all of our findings are proving beneficial to women worldwide by contributing to the knowledge of how diet and lifestyle influence health. In addition, thinking of the two studies as one large population accentuates the continuity between the younger NHSII population and the older NHS population. Combined, the cohort has over 236,000 women ranging in age from 30 to 73, the largest such study in the world.

The NHS is under the leadership of Dr. Frank E. Speizer, Professor of Medicine at Harvard Medical School, while Dr. Walter C. Willett, Professor of Epidemiology and Nutrition at the Harvard School of Public Health, heads the NHSII. The same team of investigators and staff work on both studies, which also share facilities in several buildings in the Harvard Medical Area.

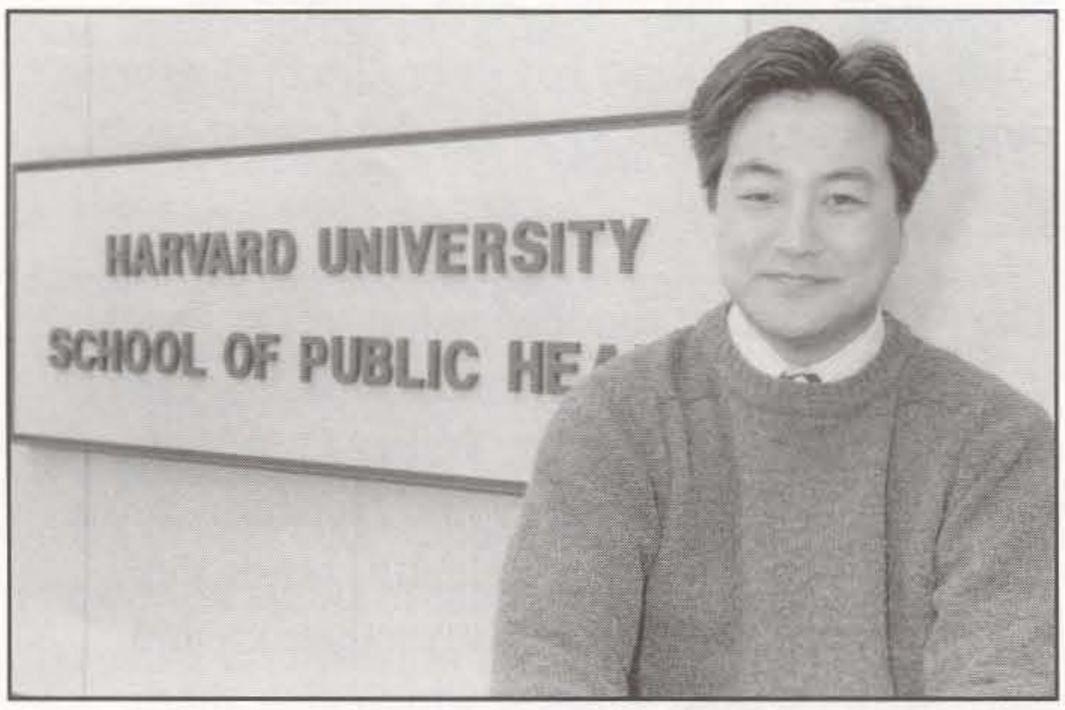


Drs. Speizer and Willett discuss study results.

Construction of a new facility is currently underway across the street from our present site. As we are currently spread among three buildings, the new structure will allow us to consolidate, so that all parts of our operation, from the coding of returned questionnaires to data management of disease follow-up, and investigator meetings, can be in one central location. We hope to move into our new home in June 1996.

Research Highlights

Dr. Ichiro Kawachi, born in Japan and raised in New Zealand, is an Assistant Professor in Health and Social Behavior at the Harvard School of Public Health. His major research interests include cardiovascular epidemiology, health status measurements, occupational injury, tobacco control policies and the benefits of smoking cessation. Dr. Kawachi has also played an instrumental role in designing the quality of life questions included on our recent surveys.



Dr. Ichiro Kawachi, Co-Investigator with the Nurses' Health Studies.

The Health Benefits of Giving Up Smoking

The good news is that participants in the Nurses' Health Study have been giving up smoking at a faster rate than the national average. At the start of the study in 1976, 33% of the participants in the Nurses' Health Study smoked. By 1988, the proportion of smokers in the study had dropped to 22%. Thirty-five percent of women were former smokers in 1988, yielding a quit ratio (defined as the percentage of "ever" smokers who have since quit) of nearly 61%. This figure is considerably higher than the quit ratio of 45% for all U.S. women reported by the U.S. Surgeon General in 1988.

Just how beneficial giving up smoking can be was demonstrated in three recent studies from the Nurses' Health Study (1-3). Although current smokers are at three times the risk of stroke compared to never smokers, giving up smoking completely removed this excess risk within two to four years of quitting (1). Similarly, current smokers are at nearly four times the risk of heart attack compared to never smokers (even more for heavy smokers!), but giving up cigarettes removed about one-third of this excess risk within two years of quitting. Nearly three-quarters of the excess risk of heart attack was removed after four years of cessation (2).

Current smokers are at nearly twice the risk of overall mortality compared to never smokers. After ten to fourteen years of cessation, however, the excess risk of a smoker approaches the level of someone who has never smoked (3).

The riskiest thing seems to be starting to smoke at a young age. Starting before the age of fifteen years was associated with a nearly three-fold increase in overall mortality, and a nearly nine-fold increase in the occurrence of heart attack. These striking findings illustrate the importance of discouraging young people from starting to smoke. The best health advice is therefore not to start smoking at all. However, former smokers in the Nurses' Health Study have demonstrated that there are substantial and immediate health benefits from giving up cigarettes.

1. Kawachi et al. Smoking cessation and decreased risk of stroke in women. J Am Med Assoc 1993; 269:232-236.

2. Kawachi et al. Smoking cessation and time course of decreased risk of coronary heart disease in women. Arch Int Med 1994; 154:169-175.

3. Kawachi et al. Smoking cessation in relation to total mortality rates in women: a prospective study. Ann Int Med 1993; 119:992-1000.

For Your Information

Based upon requests made by many participants, we included on the 1992/1993 surveys questions on how stress, job satisfaction, and quality of life influence your health; we will be reporting results of these analyses in future newsletters. Thank you for these suggestions; we look forward to continuing input from you, the participants.

Adolescent body mass index and infertility due to ovulatory disorder.

We examined the association between body mass index (body weight in kilograms divided by the square of height in meters) at age 18 and subsequent primary ovulatory infertility, in the NHSII population. Among 2,527 married nulliparous nurses unable to become pregnant for at least one year due to ovulatory disorder, and 47,718 married parous nurses with no history of infertility, we found that the relative risk of ovulatory infertility for all categories of BMI above 23.9 (this represents a weight of ≥ 140 pounds for a 5'4" woman; median BMI for the cohort = 20-21.9) was significantly elevated. These findings suggest that elevated body mass index at age 18, even at levels lower than those considered to be obese, is a risk factor for subsequent ovulatory infertility. (Rich-Edwards et al. Am J Obstet Gynecol 1994; in press.)

Tubal ligation, hysterectomy, and the risk of ovarian cancer.

Women with a tubal ligation had a 64% lower risk of ovarian cancer, even after adjusting for known risk factors. We also noted a weaker association between simple hysterectomy and ovarian cancer; neither vasectomy nor condom use by a partner was associated with the risk of ovarian cancer. (Hankinson et al. J Am Med Assoc 1993; 270:2813-2818.)

Intakes of vitamins C, E, and A and the risk of breast cancer.

Large intakes of vitamin C or E did not protect women in the NHS from breast cancer. A low intake of vitamin A may increase the risk of this disease; any benefit of vitamin A supplements seemed to be limited to women with diets low in vitamin A. (Hunter et al. N Engl J Med 1993; 329:234-240.)

Oral contraceptive use and mortality during twelve years of follow-up: The Nurses' Health Study.

Based on 2,879 deaths among women aged 30-55 in 1976, we observed no overall difference in mortality among those who had ever used oral contraceptives as compared to women who had never used oral contraceptives; the relative risk for ever users adjusted for age, body mass index and cigarette smoking was 0.93 (95% confidence interval 0.85-1.01) compared to women who had never used oral contraceptives. We observed no trend in risk of total mortality with increasing duration of past use of oral contraceptives. After adjusting for age, body mass index and cigarette smoking, women who had used oral contraceptives for ten or more years had a relative risk that was 1.06 (95% confidence interval 0.83-1.35). Overall, this study provides important evidence that long durations of oral contraceptive use do not adversely affect long term risk of mortality. (Colditz et al. Ann Int Med 1994; in press.)

Focus

This newsletter allows us the unique opportunity to share with you a glimpse of the diverse and talented group of people who, along with the participants, make this important research project possible. Investigators, computer programmers, administrative personnel, research assistants, laboratory technicians, and the data collection and clerical staff, all work together to ensure the smooth conduct of the study. Our group is constantly changing and always expanding, to meet the increasing demands of the growing database of confidential information provided by you, our valued participants.

Susan Hankinson, R.N., Sc.D., has been with the NHS since 1988. She graduated from the University of Southern Maine in 1979 with a Bachelor of Science in Nursing, then spent the next six years working at Massachusetts General Hospital, on a surgical floor, and at the University of Minnesota Hospital, in the surgical intensive care unit. In 1985, she received her masters degree from the University of Minnesota, and went on to earn her doctoral degree in epidemiology at the Harvard School of Public Health in 1992.

While Dr. Hankinson now spends most of her time investigating the causes of breast, ovarian, and endometrial cancers, she is also the Project Director of the NHS biochemical markers study. In 1989 and 1990, she oversaw the collection and storage of over 30,000 blood samples from NHS participants. A primary goal of this component of the study is to assess the relationships between endogenous hormone levels and subsequent breast cancer risk in postmenopausal women. The combination of stored blood samples and the extensive information NHS participants have provided over the years affords us a powerful resource for assessing disease risk. Because of the success of the initial blood collection, Dr. Hankinson is now beginning a new project to collect blood and urine samples in the NHSII (we will be contacting NHSII participants about this in the near future). Dr. Hankinson is an integral part of our investigative team and her unique background in nursing and research gives her special insight into the population and topics that we study.



Dr. Sue Hankinson (right) meets with NHSII participant Joanna Krasinski, M.S.N., R.N., C.S., to discuss a new project.

Photographs by Beth Beighlie.



Lori and Kyle Ward with Barbara Egan.

We are fortunate to attract new researchers and staff, making ours a dynamic working group. However, many of us have been here since the early stages of the NHS and have proven that loyalty, consistency and hard work greatly enhance the project.

Barbara Egan and her family provide a good example of this dedication to the study. After 18 years as a "domestic engineer", that is, raising a family of five, Barbara joined our group in 1977 as a part-time research clerk. In late 1979, as the study began to expand, she accepted a full-time position as research assistant responsible for coordinating all aspects of disease documentation. She is now one of two project coordinators, overseeing six research assistants, and she continues to provide invaluable assistance with many phases of the design and implementation of this project.

A second generation was added when Barbara's teenaged daughter Lori joined the group in the summer of 1980 as a part-time office assistant and data coder. In 1985, Lori signed on as a full-time research assistant. She was responsible for assisting with the hiring, training, and supervision of students working to process and verify the questionnaires. Her job has evolved over the years, and she is now completely responsible for disease documentation in the NHSII. In December 1993, Lori gave birth to her first son Kyle, and in about 18 years, we hope to hire him as a research assistant to carry on the Egan family tradition!

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