NURSES' HEALTH STUDY NEWSLETTER

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As you know, the Nurses' Health Study and the Nurses' Health Study II use biennial questionnaires to collect information on reproductive factors, lifestyle practices, and diet in relation to the occurrence of breast cancer, heart disease, and other major illnesses in women. Every year we learn more about the causes of these conditions and come closer to finding the means for their prevention. Even if you are no longer active in the nursing profession, your continued participation is vital to the scientific integrity of these studies.

We'd like to share with you summaries of a few recent articles, all of which pertain directly to women's health.

Coffee consumption and coronary heart disease in women: a ten-year follow-up.
Although concerns have been raised about a possible link between caffeine and heart disease, during ten years of follow-up in the Nurses' Health Study, we found no indication that drinking caffeinated or decaffeinated coffee increases the risk of coronary heart disease. Further, there was no association with caffeine intake from all sources combined. (Willett et al. J Am Med Assoc 1996; 275:458-462.)

Prospective study of long-term oral contraceptive use and risk of breast cancer.
We evaluated the association between past use of oral contraceptives and breast cancer among Nurses' Health Study participants. During sixteen years of follow-up, and after adjusting for a number of breast cancer risk factors, we found no appreciable increase in breast cancer risk with past oral contraceptive use, even for long-term use ($\geq$ 10 years) among young women. (Hankinson et al. Am J Epidemiol 1995; 141(Suppl):S53, 209.)

Body weight and mortality among women.
During sixteen years of follow-up, we examined the association between body weight and total mortality, as well as mortality from specific causes, in the Nurses' Health Study. We found that mortality was significantly increased in relation to increased body weight. Women who were 30% or more above recommended weights had four times the risk of death from cardiovascular disease and twice the risk of death from cancer as women who were not over-weight. (Manson et al. N Engl J Med 1995; 333:677-685.)

Alcohol consumption and mortality among women.
We previously found in the Nurses' Health Study that light-to-moderate alcohol intake is associated with a reduced risk of coronary heart disease. However, we also found that women with similar levels of alcohol consumption had an increased risk of breast cancer; thus, the balance of risks and benefits is complex. During twelve years of follow-up, we found that light-to-moderate alcohol consumption was associated with a reduced overall mortality rate, but this apparent benefit appears largely confined to women aged 50 years and older and to women who had additional risk factors for coronary heart disease. (Fuchs et al. N Engl J Med 1995; 332:1245-1250.)

Validity of recalled weight and self-reported height among women.
We asked a sample of 118 Nurses' Health Study II participants to recall their weight at age 18 and to provide their current height. We compared their responses with records from physical examinations conducted at college or nursing school entrance. We found that the validity of recalled weight at

18 years and self-reported height was high among these women, thus indicating that the study of these factors in relation to disease risk can be conducted with a high degree of accuracy. (Troy et al. Int J Obes 1995; 19:570-572.)

Prospective study of shift work and risk of coronary heart disease in women.
During four years of follow-up among Nurses' Health Study participants, we examined the relation between rotating shift work and the risk of coronary heart disease. After adjusting for cigarette smoking and a variety of other cardiovascular risk factors, we found that six or more years of shift work was associated with an increased risk of coronary heart disease. (Kawachi et al. Circulation 1995; 92:3178-3182.)

Relationship of age, body mass index, and race to the incidence of uterine fibroids.
We examined the influence of age, body mass index, and race on risk of uterine fibroids, which are benign tumors of the uterus, among premenopausal women in the Nurses' Health Study II. Risk of fibroids was greatest among women aged 40-44 and among the heaviest women. African-American women were about two times more likely to have fibroids than white women. Future research should focus on identifying factors that might explain the observed racial differences. (Marshall et al. Am J Epidemiol 1995; 141(Suppl):S69, 273.)

SELF Magazine Feature Article

The January 1996 issue of SELF Magazine took a rare behind-the-scenes look at the NHS:

The NHS is not the first study to examine . . questions [regarding diet, smoking, oral contraceptive use, etc], but it is arguably the best, largely because of the questionnaires that lie at the heart of its design. It is a prospective epidemiological study, which means scientists try to discover which factors account for different health outcomes in a population. As it approaches its twentieth anniversary, the NHS has attained near-legendary status among its peers. No other survey combines the massive scale of the NHS - both in the length of time and the number of subjects - with such talented researchers and such rigorous attention to detail. As a result, in a statistical realm that seems to be even more impressionistic and changeable than presidential polling data, the NHS remains exceptionally productive. "It has probably made more contributions to the understanding of women's health than any other single study over the past 20 years," says Noel S. Weiss, M.D., a professor of epidemiology at the University of Washington.

Perhaps the best measure of the study's value is the care with which the data are guarded. The original questionnaires are stored in four different sites, duplicated on microfilm and entered into a computer system that is itself backed-up three different ways at two separate locations.

One reason for its value is the sheer length of time over which the data have been collected. Instead of the usual isolated statistical snapshots, the NHS offers a kind of continuing health documentary of more than 120,000 lives, allowing investigators an extraordinary opportunity to match behavioral causes with medical effects.

In the end, though, the strength of the NHS lies largely in its data. Women are always better at answering questionnaires than men, but female nurses are probably the best of the women when it comes to health questions, because they have a professional appreciation of the information being sought.

NURSES PROVIDE FEEDBACK

Over the years, we've received occasional comments, notes, compliments, and stories that you've included with your questionnaires. Here are some memorable ones.

☼ You're bringing a great service to the public in the form of information and prevention. Would that we all live well and long.

☼ I really enjoy this - I look forward to the questionnaires and the published results. My whole family is interested. This year they are disappointed that you don't want any "body parts"!! [A reference to the fact that we have previously collected toenails and blood samples from Nurses' Health Study participants]

☼ Left wrist fracture, September 11, 1988. Slipped getting into bathtub in Sorrento, Italy. Had a great vacation even in the cast!

☼ My nursing class will celebrate 40 years since graduation, and I am still young and beautiful!

☼ I am delighted to be part of the survey. In the beginning it was just something to do; now I am looking forward to answering your questions for many more years.

☼ Just a note to tell you how ironic [it is that] your "survey" always comes on the week I begin yet another diet! Actually writing what I've been eating for the past year (yes I was accurate and honest) makes me take a hard look at my lifestyle. Hopefully at the next study survey I can report a lower weight and healthier lifestyle. As always, a pleasure participating.

☼ It's always nice to hear from you and know you are eagerly continuing your survey. I'm glad also that I am still on this end and able to be of help. I hope we can get together through the mail for many years to come. Your newsletters are very interesting! Stay well and happy.

☼ I'm healthy as a horse (an Italian horse who eats pasta, garlic, and olive oil!).

SPOTLIGHT

Graham A. Colditz, M.D., Dr.P.H., is an Associate Professor of Medicine at Harvard Medical School. Having worked on the Nurses' Health Study since 1982, he has extensive experience in the epidemiology of lifestyle and health. He is Co-Principal Investigator on the study and leads investigations in several areas, including screening and mortality, benign breast disease and breast cancer risk, and diet, activity, and risk of fractures. He has published on a range of chronic conditions that affect women including heart disease, breast and other cancers, fractures, gallstones, and obesity.

While Dr. Colditz's major focus is on cancer prevention and policy implications for prevention of chronic disease, his research interests carry over to other fields as well. He recently spent three months in his native Australia working with the Repatriation Medical Authority interpreting and applying results from epidemiologic studies to compensation policies for Australian veterans. He also reported on Australia's aggressive melanoma prevention measures (including school-based programs, community awareness and action, and regulatory changes). Similar measures are needed to combat melanoma in this country since its incidence is rising faster than any other cancer.



Photo by Richard Chase

New Horizons

For us, 1996 is a year of milestones and new beginnings. This year marks the twentieth anniversary of the Nurses' Health Study and will also conclude a nearly twenty-year residency at 180 Longwood Avenue. As of June, we will be located in a new facility just across the street from our old home. Our new address is 181 Longwood Avenue, and our telephone number is 617-432-2279. The major goal is to have all the people who work on these studies in one facility.

In 1996, we also received funding from the National Cancer Institute to collect blood and urine samples from approximately 40,000 women in the Nurses' Health Study II. According to scientific reviewers (who rated our proposal among the top 2% of all grants reviewed at that time), this new project "will address an important - even crucial - contemporary issue in breast carcinogenesis."

One of the primary issues to be addressed in this study is the relation between blood hormone levels and future breast cancer risk. Although it is quite clear that hormones play a role in breast cancer, surprisingly little is known about which specific hormones are most important and at what hormone levels risk is affected. We will also evaluate other possible, but not yet proven, biochemical and genetic markers of disease risk such as the relationship between antioxidant levels and breast cancer. No other study worldwide has collected a large number of blood and urine samples with which to address these issues. We know that the high level of commitment to research and the substantial medical knowledge of Nurses' Health Study II participants will make this study a success. This new project will follow in the successful footsteps of the Nurses' Health Study blood collection effort. Over 32,000 blood samples were collected and archived in 1989-90 with the aim of evaluating the relations between postmenopausal hormone levels and breast cancer risk, and nutrient intake and risk of both colon cancer and myocardial infarction.

Beginning in the next several months and continuing for two years, we will be contacting Nurses' Health Study II members regarding the blood and urine collection. To participate, women must be premenopausal, must not be pregnant or breast feeding, and must not have recently used oral contraceptives or other hormonal treatments (i.e., for infertility or endometriosis). We will request two blood specimens (one collected near the beginning of the menstrual cycle and one near the end) and one morning urine sample. Participants will receive a kit containing all of the supplies and instructions necessary to collect the samples and ship them back to us.

We recognize the substantial commitment of time and effort we are requesting from our Nurses' Health Study II cohort members to collect and send these samples. However, as evidenced by the support of the National Cancer Institute, this project will make important contributions to the understanding of women's health over the next decade. In addition, new technological advances allow us to examine genetic markers of susceptibility to cancer, cardiovascular disease, and diabetes, helping us to define the genetic contribution to these diseases.

So while we look back with satisfaction at the first twenty years of hard work, dedication, and knowledge gained, we also look ahead to the next twenty years with enthusiasm and a strong sense of purpose.

Focus on Our Research Team

With each newsletter, we like to introduce you to some of the researchers and staff members who make this important investigation possible. This year, we focus on two individuals who are making valuable contributions to this study.

Francine Grodstein is currently an Instructor at Harvard Medical School. She received her doctorate in Epidemiology at the Harvard School of Public Health in 1992, where she completed research on female infertility. She continues to pursue her interest in women's issues through her work with the Nurses' Health Study, where she studies the health effects of postmenopausal hormones and their potential associations with diverse diseases such as gallstones and cardiovascular disease.

Currently, Dr. Grodstein is leading efforts to examine the problems and health issues of aging in the Nurses' Health Study cohort. In the past year, she began a study of cognitive function and memory loss in nurses aged 70 years and older. Memory loss is a very common and frightening condition that afflicts many people as they age; unfortunately almost nothing is known about preventing or delaying this problem. By examining lifestyle information collected from participants over many years and the relations of these factors with memory, we hope to make a valuable contribution to the knowledge in this field.

This work represents a new direction for the study, utilizing brief telephone interviews to evaluate memory loss, rather than the written questionnaires we've been using for the past twenty years. Thus far, interviewers have reached approximately 600 participants and the response has been very positive. Dr. Grodstein hopes to extend this effort over the coming years and gratefully anticipates the continued support of the study members.

As you know, our biennial questionnaire is the backbone of the Nurses' Health Studies. We'd like you to meet **Gary Chase**, Project Coordinator, the man behind the questionnaire. Gary earned a Bachelor of Science degree in Business Administration from Boston University. Before joining the Nurses' Health Study, he was Director of Field Operations at a market research firm in Boston. Gary has been with us since 1987 and is involved in just about every phase of both studies, from the early stages of questionnaire design to the mailing and processing of the surveys and the final verification of the collected data.

The creation of each new questionnaire begins in November and ends just before our June mailing. Working closely with Drs. Speizer and Willett and the other investigators, Gary coalesces all of the questions agreed upon by the research team, and designs the layout of the form, balancing tight space constraints with the need to ask questions clearly and give the questionnaire a logical "flow."

Gary oversees the entire process by which returned questionnaires are reviewed, scanned into our database, and verified to ensure that your answers have been properly recorded. Frequently, he provides input into new studies by designing questionnaires and devising data collection procedures. Gary also evaluates new technology and identifies improved methods that will allow us to communicate more effectively with you now and in the future.



Photo by Beth Beighlie

Major Findings from the Nurses' Health Study, 1976-1994

This table is reproduced from an article by Drs. Graham Colditz, JoAnn Manson, and Susan Hankinson in the June 1996 issue of the American Journal of Nursing.
It summarizes findings from Nurses' Health Study publications over the past twenty years.

	Breast Cancer	CHD/Stroke	Colon Cancer	Fracture
Smoking	No relation with current or past smoking.	Smoking dominant cause of CHD. Strong dose-response relation. Risk of CHD reduced by 14% within two years of stopping. Increased risk of stroke, reduced after stopping smoking.	Current smoking related to benign polyps. Strong relation with cancer after 30-year latent period.	Increased risk of hip fracture.
Oral Contraceptives	Current use increases risk. Past use no association.	Current use increases risk. Past use no association.	No association.	Not examined.
Postmenopausal Hormones	Current use for more than 5 years increases risk. Progestins added to estrogen therapy do not reduce risk.	Current use reduces risk.	Suggestive decrease in risk of colon cancer.	Reduces risk of hip fracture.
Obesity	Weak relation with incidence among postmenopausal women.	Strong relation; even average weight women at increased risk of CHD. Weight gained after age 18 associated with increased risk.	Increased risk.	Strong protection against hip fracture.
Alcohol	Two or more drinks per day increases risk.	Strong inverse relation for CHD, positive relation for subarachnoid hemorrhage.	Moderate intake increases risk of benign polyps.	Increased risk of hip fracture with moderate intake.
Diet	Low vitamin A intake associated with increased risk, but no relation for vitamin C or E. No relation for total fat intake. Monounsaturated fat intake inversely related to risk of breast cancer. No relation with selenium.	Vitamin E protects against CHD. Trans fatty acids increase risk of CHD. No relation to coffee.	Red meat intake increases risk of cancer. Folate intake reduces risk of benign polyps and cancer. Calcium intake not related to risk of benign polyps or cancer.	No reduction in risk with higher dietary calcium intake. Caffeine intake associated with increased risk of hip and forearm fracture.
Other Exposures	Atypical hyperplasia associated with increased risk. Family history accounts for 6% of breast cancer. Use of hair dyes not related to risk. First pregnancy increases risk of breast cancer (short term). Closer spacing of births associated with lower risk.	One to six aspirin per week reduces risk of CHD. History of adult onset diabetes and hypertension increases risk of CHD and stroke. Taller women have lower risk.	Aspirin reduces risk after 20 years of use. Family history increases risk up to 4-fold among women less than age 50.	Taller women more likely to have hip fractures.

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