



MAKE TIME TO MAKE NURSING HISTORY . . . IN THE NURSES' HEALTH STUDY

Would you like to be part of the longest running research study in the world devoted to women's health? Would you like to make a meaningful and long-term contribution to an internationally recognized women's health research program that has endured since 1976? Do you have a personal and professional commitment to women's health that would enable you to join more than 238 000 US nurses who continue to provide data for a study with an unprecedented participation rate of 90%? If so, and if you meet the study sample inclusion criteria, you have a rare opportunity to contribute to something that matters to your own health and that of future generations by enrolling as a participant in Nurses' Health Study-III.

Nurses' Health Study-I

Frank Speizer, MD, originated the Nurses' Health Study (NHS) in 1976 with financial support from the National Institutes of Health to prospectively identify the long-term health effects associated with use of oral contraceptives. Registered nurses (RNs) were designated for the study sample not only for the profession's predominantly female membership, but also because researchers anticipated that their nursing education would facilitate accuracy in replies to technically worded questionnaire items and that nurses would be highly motivated to maintain long-term participation in the study. As a result, the target sample consisted of married RNs, aged 30 to 55 years, residing in the then 11 most populous states (California, Connecticut, Florida, Maryland, Massachusetts, Michigan, New Jersey, New York,

Ohio, Pennsylvania, Texas). Of the 170 000 questionnaires mailed out, approximately 122 000 RNs responded (response rate, 72%).¹ Since the initial questionnaire mailed in 1976, this cohort's members have completed follow-up questionnaires every 2 years and periodically submitted requested laboratory samples used for identification of potential biomarkers as well as case/control analyses. In addition to items related to oral contraceptives, survey items over the past 35 years have related to a wide variety of diseases, disorders, therapies, and health habits, including smoking, diet, hormone use, menopause, and quality-of-life issues.

Nurses' Health Study-II

Nurses' Health Study-II was launched in 1989 to continue the study of oral contraceptives, diet, and other lifestyle risk factors in a population younger than the cohort used in NHS-I. The intent was to include women who had used oral contraceptives since adolescence and were therefore exposed to these agents since their early reproductive life to determine whether extended exposure was associated with increased risk of breast cancer. In addition, the second study would identify the specific type of oral contraceptive used, a variable not included in NHS-I.

The target population for NHS-II was women between 25 and 42 years. RNs from 14 states participated in this study: California, Connecticut, Indiana, Iowa, Kentucky, Massachusetts, Michigan, Missouri, New York, North Carolina, Ohio, Pennsylvania, South Carolina, and Texas. A total of 517 000 baseline questionnaires were initially mailed with 123 000 returned (response rate, 24%).¹ After incomplete forms and ineligible

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Table Synopsis of findings from Nurses' Health Study I and II ³

Disorder	Factors that <i>increase</i> risk	Factors that <i>decrease</i> risk
Breast cancer	Family history of breast cancer High breast density Current use of oral contraceptives High circulating hormone levels More than 5 years of estrogen plus progestin therapy after menopause More than 10 years of estrogen therapy Obesity in postmenopausal women 1 or more alcoholic drinks per day Higher amount of red meat in diet for premenopausal women Shift work	Weight loss after menopause Physical activity for more than 3 hours per week
Colon cancer	Smoking Obesity 2 or more alcoholic drinks per day High intake of red or processed meats Family history of colon cancer in women younger than 50 years	Oral contraceptives Postmenopausal hormones High intake of folate, vitamin B6, calcium, or vitamin D Physical activity Aspirin used for 10 or more years
Coronary heart disease and stroke	Smoking Current use of oral contraceptives Current use of postmenopausal hormones increases risk of stroke Obesity Refined carbohydrates, trans fats Snoring	Cessation of smoking (2-4 years after) In recently menopausal women, current use of postmenopausal hormones Moderate alcohol intake Mediterranean diet: fish, nuts and whole grains Physical activity
Cognitive function	Type 2 diabetes Higher levels of insulin (even in absence of diabetes)	½ to 1 alcoholic drinks per day Higher vegetable intake, especially green leafy vegetables Moderate physical activity
Hip fractures	Current smoking High consumption of alcohol Diabetes Retinol intake Years working rotating shifts	Current use of postmenopausal hormones Obesity (adipose padding around hips) Low or moderate consumption of alcohol Calcium supplements if low dietary calcium Vitamin D Physical activity
Eye disorders: cataracts and "wet" age-related macular degeneration (AMD)	Smoking increases risk of both Obesity increases risk of both Diabetes increases risk of glaucoma and cataracts	Oral contraceptives reduce risk of both Current use of postmenopausal hormones lowers risk of high tension glaucoma and "wet" AMD Some antioxidants reduce risk of both Higher fish intake may reduce risk of both

submissions were excluded, 116686 women remained in NHS-II. As with their colleagues in NHS-I, the NHS-II nurses complete follow-up questionnaires every 2 years that include items inquiring about health-related topics such as smoking, chronic diseases and disorders, hormone use, pregnancy, menopause, diet, and quality-of-life issues.

Important Findings From the Nurses' Health Study

As the largest and most enduring examination of risk factors in women's health, NHS-I and NHS-II have

generated more than 1550 papers published in the nursing, medical, and health care literature and have revealed "...key information on literally hundreds of important topics, including results that have altered medical practice and national dietary guidelines."³ A brief synopsis of these findings is provided in the Table.

Focus for Nurses' Health Study-III

NHS-III will consider the influence of changing lifestyles and environmental factors on women, specifically on the effects of nutritional patterns, physical activity, medication use—including newer hormone

preparations and occupational influences. Some areas of particular interest in this long-term study include fertility issues, events related to pregnancy, as well as the female adolescent diet and breast cancer risk.¹

NHS-III is recruiting participants from diverse ethnic backgrounds across the United States.⁴ Two of the criteria for participants in NHS-III are female and age 22 to 42 years old. To find out if you can join NHS-III, go to www.nhs3.org/index.php/info/who-can-join. If you are not eligible to participate in NHS-III but would like to support this research program, get more information at www.nhs3.org.

Who Benefits From the Nurses' Health Study?

It isn't every day that you have an opportunity to participate in the longest running research study in the world related to women's health or in an internationally heralded research program in which 100% of participants are nurses and 90% have continued to participate decades later. If you meet the NHS-III inclusion criteria, this is one ring you need to grab. For all of the findings unique to women's health, do it for yourself, your mother, daughters, granddaughters, great granddaughters, your female nurse colleagues, friends, and neighbors. For all of the findings from this study that apply to both genders, do it for your spouse, your father, sons, grandsons, great grandsons, your male nurse colleagues, friends, and neighbors. Pass it forward so that all of us may benefit from your participation for generations to come. CCN



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PS: On behalf of all of the staff of *Critical Care Nurse*, we wish you and your family Happy Holidays, safe travels, and best wishes for the new year. May 2012 be kind to you and those you love.

References

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