



SWAN RESEARCH FINDINGS

APRIL 05, 2005

PUBLISHED MANUSCRIPTS

1. Sutton-Tyrrell K, Wildman RP, Matthews KA, Chae C, Lasley BL, Brockwell S, Pasternak RC, Lloyd-Jones D, Sowers MF, Torrens JI; for the SWAN Investigators. **Sex Hormone--Binding Globulin and the Free Androgen Index Are Related to Cardiovascular Risk Factors in Multiethnic Premenopausal and Perimenopausal Women Enrolled in the Study of Women Across the Nation (SWAN).** Circulation 2005;111:1242-1249.
Primary Question: How are reproductive hormones related to cardiovascular risk factors and are these associations consistent across ethnicities?
Summary of Findings: Hormone factors related to androgens are strongly related to cardiovascular risk factors in SWAN women. Thus, increases in androgens rather than decreases in estrogens may drive the change in risk of heart disease after menopause.
2. Lewis TT, Everson-Rose SA, Sternfeld B, Karavolos K , Wesley D, Powell LH. **Race, Education, and Weight Change in a Biracial Sample of Women at Midlife.** Archives of Internal Medicine 2005;165:545-551.
Primary Question: How do race and socioeconomic status influence weight and weight gain over time in African-American and Caucasian women? Is the relationship between socioeconomic status and weight gain the same in African-American and Caucasian women?
Summary of Findings: We observed significant racial differences in the effects of socioeconomic status (measured by education) on weight for middle-aged women. At baseline, African-American women at all levels of education were equally heavy, while Caucasian women were thinner with each incremental increase in educational attainment. Over time, women of both races and all educational levels gained equally (about 1.3 pounds each year). Consequently, the absolute level differences observed at baseline persisted over time.
3. Bair YA, Gold EB, Azari RA, Greendale G, Sternfeld B, Harkey MR, Kravitz RL. **Use of conventional and complementary health care during the transition to menopause: longitudinal results from the Study of Women's Health Across the Nation (SWAN).** Menopause. 2005;12(1):31-39.
Primary Question: Are women replacing conventional health care with complementary and alternative medicine (CAM) during menopause?
Summary of Findings: Rather than replacing conventional health services, women who use CAM also use more conventional health care. Additionally, women with more consistent CAM use also had increasing conventional health care contacts throughout a 2 year period.
4. Weiss G, Skurnick JH, Goldsmith LT, Santoro NF, Park SJ. **Menopause and Hypothalamic-Pituitary Sensitivity to Estrogen** Journal of the American Medical Association 2004; 292(24):2991-6.
Primary Question: What are the central nervous system reasons for failures of ovulation in women who are in the menopausal transition?
Summary of Findings: Analysis of the patterns of hormones in early perimenopausal women who did not ovulate indicate that the brain is less sensitive to estrogen with reproductive aging.



5. Santoro NF. **Working toward a better understanding of menopause.** Primary Care
Primary Question:
Summary of Findings: SWAN is the first multi-ethnic longitudinal study of the menopause transition ever performed in the United States. Current models are challenging some prevailing notions about the menopause transition—that obesity protects against vasomotor symptoms, that DHEAS decreases inexorably in everyone over time, and that decreasing ovarian reserve is associated with a progressive decline in estrogen. Further elucidation of the process of menopause will allow for a distinction between ‘early’, ‘late’, ‘fast’ and ‘slow’ transitions, an improved prediction of the timing of the final menses, and an ability to forecast symptomatology and encourage preventive measures or appropriate interventions.

6. Everson-Rose SA, Meyer PM, Powell LH, Pandey D, Torrens JI, Kravitz HM, Bromberger JT, Matthews KA. **Depressive Symptoms, Insulin Resistance, and Risk of Diabetes in Women at Midlife.** Diabetes Care 2004;27(12):2856-2862.
Primary Question: Does a high level of depressive symptoms predict increased risk of diabetes and increases in insulin resistance over time? Do associations vary by race?
Summary of Findings: Compared to Caucasian women, African-American women with a symptom score of 16 or higher on our measure of depression showed elevated risk of developing diabetes over 3 years of follow-up that could not be explained by known diabetes risk factors. Depressed African-Americans similarly showed significant increases in insulin resistance over time, compared to non-depressed women. Depression was not related to changes in insulin resistance among the other racial groups.

7. Cyranowski JM, Bromberger J, Youk A, Matthews K, Kravitz HM, Powell LH. **Lifetime Depression History and Sexual Function at Midlife.** Archives of Sexual Behavior 2004; 33(6):539-548.
Primary Question: To what extent is lifetime depression history associated with female sexual function at midlife?
Summary of Findings: Women with a lifetime history of recurrent MDD reported less sexual arousal, less physical pleasure and less emotional satisfaction within their partnered sexual relationships. Although the depression history groups did not differ in reports of sexual desire or frequency of partnered sexual behaviors, women with a lifetime history of MDD reported a higher frequency of masturbation as compared with never-depressed women. Reports of decreased physical pleasure with partnered sex and increased frequency of masturbation remained significant after controlling for current depressive symptoms, study site, marital status, psychotropic medication use, and lifetime history of anxiety or substance abuse/dependence disorders.



8. Sternfeld B, Wang H, Quesenberry C, Abrams B, Everson-Rose S, Greendale G, Matthews K, Torrens J, Sowers MF. **Physical Activity and Changes in Weight and Waist Circumference in Midlife Women: Findings from the Study of Women's Health Across the Nation.** American Journal of Epidemiology 2004;160(9):912-922.
Primary Question: How does aging, change in menopausal status and change in physical activity affect changes in body fat and fat distribution during mid-life?
Summary of Findings: Weight and waist circumference increased on average, but was not related to change in menopausal status. Women who increased participation in sports/exercise and daily routine activity had less of an increase in weight and waist, while those who decreased their activity level had the greatest gains.
9. Bromberger JT, Harlow S, Avis N, Kravitz HM, Cordal A. **Racial/Ethnic Differences in the Prevalence of Depressive Symptoms Among Middle-Aged Women: The Study of Women's Health Across the Nation (SWAN)** American Journal of Public Health 2004; 94(8):1378-1385.
Primary Question: (1) Are there differences in the prevalence of depressive symptoms among ethnic groups? And if so, (2) what factors (education, income, health, etc.) might influence these differences? (3) What are the relative contributions of ethnicity, social economic status, health, lifestyle and psychosocial factors to depression in middle-aged women?
Summary of Findings: Unadjusted analyses showed that rates of depression (Center for Epidemiological Studies depression scale (CES-D) score greater than or equal to 16) varied significantly by ethnicity. They were highest among African American and Hispanic and lowest among Japanese and Chinese women. Separate analyses showed that adjustments for social economic status and demographic factors in one, and health factors in another, attenuated the effects of ethnicity. The final model showed that health, physical activity, stress, and social support were each significantly associated with depression.
10. Pirraglia PA, Sanyal P, Singer DE, Ferris TG. **Depressive Symptom Burden as a Barrier To Screening for Breast and Cervical Cancers** Journal of Women's Health 2004; 160(5):484-491.
Primary Question: Women with higher CES-D score and no insurance are less likely have screening for breast and cervical cancer.
Summary of Findings: High Depressive symptom burden was independent predictor predictor of lower odds of cancer screening in women. Depression may be a modifiable factor in improving rates of cancer screening in women.
11. Gold E, Block G, Crawford S, Lachance L, Fitzgerald G, Miracle H, Sherman S. **Lifestyle and Demographic Factors in Relation to Vasomotor Symptoms: Baseline Results from the Study of Women's Health Across the Nation (SWAN).** American Journal of Epidemiology 2004; 159(12):1189-1199.
Primary Question: How does dietary intake (fiber, alcohol, calorie, etc.) affect the physical symptoms of menopause? Are active and passive smoke exposure associated with menopausal symptoms?
Summary of Findings: Significantly more African American and Hispanic women and significantly less Chinese and Japanese women reported vasomotor symptoms. Increased reporting of vasomotor symptoms was also significantly independently associated with passive smoke exposure and increased dietary cholesterol, as well as a history of premenstrual symptoms or gynecologic surgery



12. Avis NE, Assmann SF, Kravitz HM, Ganz PA, Ory M. **Quality of life in diverse groups of midlife women: Assessing the influence of menopause, health status and psychosocial and demographic factors** Quality of Life Research 2004;13(5):933-946.
Primary Question: Does global quality of life (QOL) differ by menopausal status and other demographic and behavioral factors?
Summary of Findings: Early perimenopausal women reported lower global QOL, compared with premenopausal women in unadjusted analysis, but menopausal status had little effect on QOL when analyses adjusted for other variables. Being married and having low levels of perceived stress were consistently related to global QOL across all ethnic groups. Other variables related to global QOL among some ethnic groups were education, difficulty paying for basics, self-assess health, physical activity, attitudes towards aging, and social support.
13. Santoro N, Lasley B, McConnell D, Allsworth J, Crawford S, Gold E, Finkelstein J, Greendale G, Kelsey J, Korenman S, Luborsky J, Matthews K, Midgley R, Powell L, Sabatine J, Schocken M, Sowers MF, Weiss G. **Body Size and Ethnicity are Associated with Menstrual Cycle Alterations in Women in the Early Menopausal Transition: The Study of Women's Health Across the Nation (SWAN) Daily Hormone Study.** Journal of Clinical Endocrinology and Metabolism 2004; 89(6):2622-2631.
Primary Question: What demographic features predict luteal activity in the SWAN subcohort DHS baseline?
Summary of Findings: Older age, larger body size, and Hispanic ethnic background were all associated with a greater likelihood of having an anovulatory cycle in women in the early stages of the menopause transition. Cigarette smoking, although known to affect the age at menopause, was not associated with major menstrual cycle alterations in this sample.
14. Kurina LM, Gulati M, Everson-Rose SA, Chung PJ, Karavolos K, Cohen NJ, Kandula N, Lukezic R, Dugan SA, Sowers MF, Powell LH, Pickett KE. **The Effect of Menopause on Pinch and Grip Strength: Results from the Chicago, Illinois, Site of the Study of Women's Health Across the Nation.** American Journal of Epidemiology 2004; 160(5):484-491.
Primary Question: Our 2 primary questions were: (1) to determine whether physical function, as assessed by grip & pinch strength declined in African-American & Caucasian women over 3 years of follow-up; and (2) to determine whether declines in arm strength differed by menopausal status or HRT use within each racial group.

Summary of Findings: Progression through the menopause was significantly related to decreases in pinch and grip strength in African American women only, after controlling for age, HRT use, smoking, marital status, income, education, obesity and physical activity. Age and HRT use were not associated with declines in arm strength. The most important predictor of loss of arm strength was physical inactivity.



15. Santoro N. **What a SWAN can teach us about menopause.** Contemporary Ob/Gyn 2004; 49:69-79.
Primary Question: This is an article review that summarizes the work of the SWAN to date.
Summary of Findings: SWAN is the first multi-ethnic longitudinal study of the menopause transition ever performed in the United States. Current models are challenging some prevailing notions about the menopause transition—that obesity protects against vasomotor symptoms, that DHEAS decreases inexorably in everyone over time, and that decreasing ovarian reserve is associated with a progressive decline in estrogen. Further elucidation of the process of menopause will allow for a distinction between ‘early’, ‘late’, ‘fast’ and ‘slow’ transitions, an improved prediction of the timing of the final menses, and an ability to forecast symptomatology and encourage preventive measures or appropriate interventions.

16. Randolph JF, Sowers MF, Bondarenko IV, Harlow SD, Luborsky JL, Little RJ. **Change in Estradiol and Follicle-Stimulating Hormone across the Early Menopausal Transition: Effects of Ethnicity and Age.** Journal of Clinical Endocrinology and Metabolism 2004; 89(4):1555-1561.
Primary Question: To assess whether ethnic differences exist in the patterns of change in estradiol (E2) and follicle-stimulating hormone (FSH) and, if so, whether these differences are explained by host characteristics
Summary of Findings: Serum E2 concentrations decreased significantly with age, with a steeper decline at higher ages. FSH concentrations increased significantly with age, with a steeper increase at higher ages. Similar patterns in the decline of E2 and the increase in FSH with age were found across ethnic groups, but the levels of these hormones differed by race/ethnicity. These ethnic differences in E2 and FSH were independent of menopausal status. The effect of BMI on serum E2 and FSH levels varied by menopausal status.

17. Block G, Mandel R, Gold EB. **On Food Frequency Questionnaires: The Contribution of Open-ended Questions and Questions on Ethnic Foods.** Epidemiology 2004; 15(2):216-221.
Primary Question: To what extent do open-ended questions contribute to dietary estimates? To what extent do ethnic foods contribute to dietary estimates in Caucasians?
Summary of Findings: Including an open-ended question (“Any other foods?”) contributes trivially to estimates or ranking. Asking ethnic foods of Caucasian respondents contributes trivially.



18. Torrens JI, Skurnick J, Davidow AL, Korenman SG, Santoro N, Soto-Greene M, Lasser N, Weiss G. **Ethnic differences in insulin sensitivity and beta-cell function in premenopausal or early perimenopausal women without diabetes: the Study of Women's Health Across the Nation (SWAN).** *Diabetes Care* 2004; 27(2):354-361.
Primary Question: To look for differences in two of the major risk factors for the development of type 2 diabetes between non-Hispanic whites and the other ethnic groups enrolled in SWAN.
Summary of Findings: Chinese Americans, Japanese Americans and African Americans are less insulin sensitive than non-Hispanic white women. The non-Mexican American Latino women have a similar level of insulin sensitivity as non-Hispanic white women. Chinese American and Japanese American women do not have the compensatory increase in beta cell function seen in African American women. Beta cell function in non-Mexican American Women is similar to that of non-Hispanic white women.
19. Avis NE, Ory M, Matthews KA, Schocken M, Bromberger J, Colvin A. **Health-Related Quality of Life in a Multiethnic Sample of Middle-Aged Women: Study of Women's Health Across the Nation (SWAN).** *Medical Care* 2003; 41(11):1262-1276.
Primary Question: Are ethnicity and/or menopausal status related to impaired functioning on five health-related quality of life domains (role limitations due to physical health, bodily pain, role limitations due to emotional problems, vitality, and social functioning) among women in mid-life? What additional variables (including demographics, health status, lifestyle, and psychosocial factors) are related to impaired functioning for each domain. Are ethnicity/menopausal status related to impaired functioning after adjusting for other important health and lifestyle predictors?
Summary of Findings: In unadjusted analyses, perimenopausal women were more likely to have impaired functioning on all 5 domains. However, in analyses adjusting for other variables, menopausal status was no longer significantly related to impaired functioning. Ethnicity was also related to impaired functioning on all 5 domains in unadjusted analyses and remained significant in adjusted analyses for all domains but role-physical. In general, health and psychosocial factors for most related to all 5 health-related quality of life domains.
20. Sowers MF, Derby C, Jannausch ML, Torrens JI, Pasternak R. **Insulin Resistance, Hemostatic Factors, and Hormone Interactions in Pre- and Perimenopausal Women: SWAN.** *Journal of Clinical Endocrinology & Metabolism* 2003;88(10):4904-4910.
Primary Question: Are insulin levels correlated with clotting factor activity, plasminogen activator inhibitor type I (PAI-1) in relation to cardiovascular risk factors, E2 and follicle stimulating hormone (FSH) levels?
Summary of Findings: We showed that SHBG (which influences the amount of available testosterone and estradiol as well as have an independent hormone-like action) was associated with both hemostatic factors and insulin, and significantly modified the association of the hemostatic factors with insulin resistance. Women with the greatest insulin resistance had the lowest SHBG concentrations and highest homeostatic marker levels, even after adjusting for covariates.



21. Meyer PM, Powell LH, Wilson RS, Everson-Rose SA, Kravitz HM, Luborsky JL, Madden T, Pandey D, Evans DA. **A population-based longitudinal study of cognitive functioning in the menopausal transition.** Neurology 2003; 61(6):801-806.
Primary Question: Are there changes in cognitive functioning in mid-life women associated with increasing age or progression through the menopausal transition?
Summary of Findings: There was a slight increase over time in cognitive functioning as measured in terms of working memory and perceptual speed. It was not significantly associated with menopausal status or progression through the menopausal transition.
22. Sowers MF, Crawford SL, Cauley JA, Stein E. **Association of Lipoprotein(a), Insulin Resistance, and Reproductive Hormones in a Multiethnic Cohort of Pre- and Perimenopausal Women (The Swan Study).** American Journal of Cardiology 2003;92(5):533-537.
Primary Question: Are Lp(a) concentrations, a risk factor for heart disease, related to hormones, especially androgens, through insulin resistance?
Summary of Findings: Insulin resistance was not significantly related to Lp(a) after controlling for ethnicity. Among healthy women, the direct effect of insulin resistance on Lp(a) was small compared with the indirect effects through body weight and ethnicity. Unlike race/ethnicity and body weight, estrogen, androgens and insulin resistance accounted for very little variation in Lp(a) concentrations.
23. Bromberger JT, Assmann SF, Avis NE, Schocken M, Kravitz HM, Cordal A. **Persistent Mood Symptoms in a Multi-Ethnic Community Cohort of Pre- and Perimenopausal Women.** American Journal of Epidemiology 2003; 158(4):347-356.
Primary Question: Are early perimenopausal women more likely than premenopausal women to experience frequent mood symptoms? Is the effect of being perimenopausal on dysphoric mood greater among women with certain characteristics?
Summary of Findings: Rates of frequent mood symptoms were higher among early perimenopausal (14.9%-18.4%) than among premenopausal (8%-12%) women. Early perimenopausal women had higher odds of irritability, nervousness, and frequent mood changes, but not feeling blue. The effect of being early perimenopausal on overall dysphoric mood was greatest among women with less than a high school/GED education and with no "possible PMS" in the previous year.
24. Cain VS, Johannes CB, Avis NE, Mohr B, Schocken M, Skurnick J, Ory M. **Sexual Functioning and Practices in a Multi-Ethnic Study of Midlife Women: Baseline Results from SWAN.** Journal of Sex and Research 2003; 40(3):266-76.
Primary Question: Do sexual practices and functioning vary with menopause status and ethnicity?
Summary of Findings: Overall, 79% of the sample had engaged in sex with a partner in the last 6 months, and 33% considered sex to be quite or extremely important in their life. For those who engaged in sexual activity, a high level of emotional and physical satisfaction was reported. Perimenopause status was associated only with higher frequencies of masturbation and pain during intercourse. Early perimenopause had little effect on frequency of sexual practices or function, but ethnic variation remained in most measures even after adjusting for socioeconomic factors.



25. Greendale GA, Young JT, Huang MH, Bucur A, Wang Y, Seeman T. **Hip axis length in mid-life Japanese and Caucasian U.S. residents: no evidence for an ethnic difference.** Osteoporosis International 2003; 14(4):320-325.
Primary Question: Are the lower rates of hip fracture rate in Japanese women in Japan and Japanese-Americans, compared with Caucasians, due to shorter hip axis length (HAL)?
Summary of Findings: No difference in HAL between Japanese-American, Japanese women resident in the US, and Caucasian-American SWAN participants were observed at the UCLA site.

26. Troxel WM, Matthews KA, Bromberger JT, Sutton-Tyrrell K. **Chronic Stress Burden, Discrimination, and Subclinical Carotid Artery Disease in African American and Caucasian Women.** Health Psychology 2003; 22(3):300-309.
Primary Question: What is the impact of the accumulated burden of multiple stressors, including discrimination, on subclinical carotid disease in African-American and Caucasian women?
Summary of Findings: African Americans reported greater stress and had higher carotid intima-media thickness (IMT) compared to Caucasians. Among African Americans only, greater accumulated stress and unfair treatment was associated with higher IMT.

27. Randolph JF Jr, Sowers MF, Gold EB, Mohr BA, Luborsky J, Santoro N, McConnell DS, Finkelstein JS, Korenman SG, Matthews KA, Sternfeld B, Lasley BL. **Reproductive Hormones in the Early Menopausal Transition: Relationship to Ethnicity, Body Size and Menopausal Status** The Journal of Clinical Endocrinology and Metabolism 2003; 88(4):1516-1522.
Primary Question: How do reproductive hormones in the early menopausal transition differ by ethnicity, menopausal phase, age and body composition?
Summary of Findings: Serum estradiol and sex hormone-binding globulin levels were lower in Japanese and Chinese women than in Caucasians, African-Americans, or Hispanics. Serum testosterone levels were lower in Hispanics than in women belonging to the other 4 ethnic groups. Serum DHEAS (dehydroepiandrosterone sulfate) levels were higher in Chinese, Japanese and Caucasian women than in African-American or Hispanic women. Serum DHEAS levels were negatively correlated with age but not menopausal status. There were no ethnic differences in serum follicle-stimulating hormone levels, but it was highly correlated with menopausal status. All hormone concentrations were significantly correlated with body composition.

28. Sowers MF, Luborsky J, Perdue C, Araujo KL, Goldman MB, Harlow SD. **Thyroid Stimulating Hormone (TSH) Concentrations and Menopausal Status in Women at the Mid-life: SWAN** Clinical Endocrinology 2003; 58(3):340-347.
Primary Question: Are menopausal symptoms, menstrual bleeding and reproductive hormones associated with Thyroid Stimulating Hormone (TSH) concentrations as well as hypo- and hyperthyroidism status in women at the mid-life?
Summary of Findings: In women aged 42-52, the prevalence of TSH levels outside the normal range was 9.6%. Thyroid status was associated with bleeding length and self-reported fearfulness, but not with other menopausal symptoms or reproductive hormone concentrations, including Follicle Stimulating Hormone (FSH). There was a marked ethnic difference in TSH levels for which currently there is no explanation.



29. Santoro N, Crawford SL, Allsworth JE, Gold EB, Greendale GA, Korenman S, Lasley BL, McConnell D, McGaffigan P, Midgley R, Schocken M, Sowers M, Weiss G. **Assessing Menstrual Cycles With Urinary Hormone Assays.** American Journal of Physiology-Endocrinology and Metabolism 2003; 284(3):E521-E530.
Primary Question: What is degree of agreement between assessments of luteal function using subjective ratings and objective algorithms?
Summary of Findings: Adaptations of widely used algorithms for assessing menstrual cyclicity in midreproductive aged women were adapted to the SWAN Daily Hormone Study cohort. Robust algorithms were derived that agreed closely with subjectively rated cycles by trained observers. Inter and intra-rater agreement was also assessed. We conclude that simple methods for determining luteal function and the day of luteal transition can be applied to the study of cycles in perimenopausal women.
30. Greendale GA, Huang MH, Wang Y, Finkelstein JS, Danielson M, Sternfeld B. **Sport and Home Physical Activity Are Independently Associated with Bone Density.** Medicine and Science in Sports and Exercise 2003; 35(3):506-512.
Primary Question: Is bone mineral density (BMD) positively related to higher levels of each domain-specific physical activity (sport, home, active living, and work)?
Summary of Findings: Higher leisure and home physical activity were independently associated with higher bone mineral density in each ethnic group. To our knowledge, this is the first demonstration of an association between home activity and BMD. It highlights the need to use physical activity scales that measure this important component of women's activity.
31. Sowers MF, Greendale GA, Bondarenko I, Finkelstein JS, Cauley JA, Neer RM, Ettinger B. **Endogenous hormones and bone turnover markers in pre- and perimenopausal women: SWAN** Osteoporosis International 2003; 14(3):191-197.
Primary Question: Are higher serum osteocalcin and urinary N-telopeptide of Type I collagen (NTx) concentrations, markers of bone formation and resorption, found in women with increasing cycle irregularity or increased follicle stimulating hormone (FSH) concentrations?
Summary of Findings: In these pre- and early perimenopausal women, higher FSH concentrations, but not other serum reproductive hormone concentrations such as estradiol, are positively associated with greater bone turnover even prior to the last menstrual period.
32. Jones DJ, Bromberger JT, Sutton-Tyrrell K, Matthews KA. **Lifetime history of depression and carotid atherosclerosis in middle-aged women** Archives of General Psychiatry 2003; 60(2):153-160.
Primary Question: Is lifetime history of major depression associated with carotid atherosclerosis in midlife women?
Summary of Findings: After controlling for biological and behavioral risk factors for carotid atherosclerosis, lifetime history of recurrent major depression more than doubled the risk of plaque relative to no history of major depression. Depressive symptoms or a lifetime history of a single major depressive episode afforded no increase risk for plaque. Neither depressive symptoms nor major depression were associated with intima media thickness (IMT).



33. Sowers MF, Finkelstein JS, Ettinger B, Bondarenko I, Neer RM, Cauley JA, Sherman S, Greendale GA. **The association of endogenous hormone concentrations and bone mineral density measures in pre- and perimenopausal of four ethnic groups: SWAN.** Osteoporosis International 2003; 14(1):44-52.
Primary Question: Do hormone levels or perimenopausal status affect bone mineral density (BMD) prior to the last menstrual period?
Summary of Findings: BMD was lower in perimenopausal women than pre-menopausal women. Women with higher Follicle Stimulating Hormone (FSH) concentrations had lower BMD. Serum FSH concentrations, but not serum estradiol, testosterone, or Sex Hormone Binding Globulin (SHBG), were significantly associated with BMD in a multi-ethnic population of women. This supports the hypothesis that alterations in hormone environment are associated with BMD differences before the final menstrual period.
34. Luborsky JL, Meyer P, Sowers MF, Gold EB, Santoro N. **Premature menopause in a multi-ethnic population study of the menopause transition.** Human Reproduction 2003;18(1):199-206.
Primary Question: What is the prevalence of Premature Ovarian Failure (POF) and how is it related to health related variables?
Summary of Findings: POF was reported by 1.1% of all women and varied by ethnicity. Health factors associated with POF also vary by ethnicity. This is the first paper to examine POF in multiple ethnic groups under a single study design.
35. Kravitz HM, Ganz PA, Bromberger J, Powell LH, Sutton-Tyrrell K, Meyer PM. **Sleep difficulty in women at midlife: a community survey of sleep and the menopausal transition.** Menopause 2003;10(1):19-28.
Primary Question: Are there differences in prevalence of self-reported difficulty sleeping among middle-aged women at various stages of the menopausal transition and in post menopausal women who do and do not use exogenous hormones? Do prevalence rates of difficulty sleeping differ by ethnicity? Is menopausal status independently associated with difficulty sleeping after controlling for other factors?
Summary of Findings: The stage of the menopausal transition is significantly associated with self-reported difficulty sleeping, apart from the effects of other factors. However, other factors may play an important role in contributing to the difficulty sleeping that middle-aged women going through the menopausal transition may experience and should be further investigated. Older age per se was not significantly associated with difficulty sleeping.
36. Sampselle CM, Harlow SD, Skurnik J, Brubaker L, Bondarenko I. **Urinary Incontinence Predictors and Life Impact in Ethnically Diverse Perimenopausal Women.** Obstetrics & Gynecology 2002; 100(6):1230-1238.
Primary Question: What is the prevalence of urinary incontinence (UI) and what risk factors are associated with having any incontinence? What is the relationship between severity of incontinence and the likelihood of discussing leakage with a health care provider, with the level of bother associated with incontinence, and with waking to urinate?
Summary of Findings: Twenty-five percent of midlife women experienced UI at moderate to severe levels, i.e., at least enough leakage to warrant a change of undergarments several days per week. Significant predictors of severity included Body Mass Index (BMI), perimenopausal status, diabetes mellitus, and current smoking, but not age or ethnicity.



37. LaChance L, Sowers MF, Jamadar D, Hochberg M. **The Natural History of Emergent Osteoarthritis of the Knee in Women.** Osteoarthritis and Cartilage 2002; 10:849-854.
Primary Question: What is the probability that mid-aged women with a Kellgren and Lawrence (K-L) intermediate score of 1 for knee osteoarthritis (OAK) are likely to progress to a score of 2 (confirmed OAK) or regress to a score of zero at a second time point, 2-3yrs later?
Summary of Findings: A score of 1 is part of the advancement to emergent OAK and suggests the following criteria to characterize individuals who are at an intervenable stage on the pathway toward OAK: age ³40, BMI ³30, and K-L score of ³1. From the perspective of both the individual and the examiner, these assessment characteristics are as reliable as the assessment of pain in the knee joint.
38. Bair YA, Gold EB, Greendale GA, Sternfeld B, Adler SR, Azari R, Harkey M. **Ethnic Differences in Use of Complementary and Alternative Medicine at Midlife: Longitudinal Results from SWAN Participants.** American Journal of Public Health 2002; 92(11):1832-1840.
Primary Question: What is the prevalence of and what are the longitudinal correlates of use of complementary and alternative medicine (CAM) among mid-life women?
Summary of Findings: Almost half of the women in SWAN used some kind of CAM at baseline, including herbs (18%), nutritional remedies (32%), psychological methods (20%), physical methods (20%) and folk medicine (6%). Women who reported psychological symptoms or used complementary and alternative medicines at baseline were mostly likely to be using CAM at the first year follow-up.
39. Crawford SL, Johannes CB, Stellato RK. **Assessment of Digit Preference in Self-reported Year at Menopause: Choice of an Appropriate Reference Distribution.** American Journal of Epidemiology 2002;156(7):676-683.
Primary Question: Is self-reported year at natural or surgical menopause accurate, or does it exhibit terminal digit preference for years ending in "0" and "5"?
Summary of Findings: Terminal digit for year at hysterectomy was more evenly distributed across all 10 digits than was terminal digit for year at natural menopause. The latter, however, was similar to a reference distribution based on prevalence data, suggesting that self-report is accurate. Results did not differ by ethnicity.
40. Huang MH, Schocken M, Block G, Sowers MF, Gold E, Sternfeld B, Seeman T, Greendale GA. **Variation in nutrient intakes by ethnicity: results from the Study of Women's Health Across the Nation (SWAN).** Menopause 2002; 9(5):309-319.
Primary Question: How does dietary intake differ among the race/ethnic groups in SWAN?
Summary of Findings: Many differences in macro-and micronutrient intakes in the 5 SWAN ethnic groups were observed, which may contribute to differences in a number of outcomes of interest, such as bone mineral density, menopausal symptoms, and cardiovascular risk factor profile.



41. England BG, Parsons GH, Possley RM, McConnell DS, Midgley AR. **Ultrasensitive Semiautomated Chemiluminescent Immunoassay for Estradiol.** Clinical Chemistry 2002;48(9):1584-6.
Primary Question: Can a highly sensitive and robust estradiol assay be developed to determine hormone levels with accuracy and precision in post-menopausal women, in whom circulating levels are usually <20 pg/mL, and levels of =5 pg/mL are common?
Summary of Findings: An ultra sensitive, semi-automated estradiol-17beta immunoassay was developed on the Bayer Diagnostics, Automated Chemiluminescent System (ACS-180) with analytical sensitivity (~1.0 pg/mL) that is adequate to quantify estradiol reproducibly in the sera of men, post-menopausal women, and children. The availability of this method has greatly facilitated the rapid analysis of large numbers of samples with good precision, low labor and reagent costs per result, and rapid turnaround times.

42. Lasley BL, Santoro N, Randolph JF, Gold EB, Crawford S, Weiss G, McConnell DS, Sowers MF. **The Relationship of Circulating Dehydroepiandrosterone, Testosterone, and Estradiol to Stages of the Menopausal Transition and Ethnicity.** Journal of Clinical Endocrinology and Metabolism 2002; 87(8):3760-3767.
Primary Question: Is adrenal function is associated with stages of ovarian function during the menopausal transition?
Summary of Findings: There is no uniform predictable decline in circulating dehydroepiandrosterone (DHEAS) in women undergoing the menopause transition. Circulating DHEAS concentrations transiently increase in some individuals, and this transient increase is linked to the later stages of the menopause transition. Changes and variability of DHEAS in the later menopause transition differed among the different ethnic groups. The linkage of ovarian function to adrenal function underscores the importance of characterizing ovarian status when studying women, and highlights the need for further mechanistic elucidation of the pathways responsible for transient adrenal androgen activation.

43. Sowers MF, Jannausch M, Stein E, Jamadar D, Hochberg M, Lachance L. **C-reactive protein as a biomarker of emergent osteoarthritis.** Osteoarthritis and Cartilage 2002; 10:595-601.
Primary Question: Is C-reactive protein (C-RP), a quantitative marker of the body's acute phase response, a potential biomarker of prevalent and incident osteoarthritis of the knee (OAK)?
Summary of Findings: Higher C-RP concentrations were associated with both prevalent and incident OAK, and were predictive after adjusting for obesity. C-RP, as a measure of an acute phase response and moderate inflammation, may permit earlier or more definitive detection of OAK or act as a predictor prior to its presentation on x-ray.



44. Finkelstein JS, Sowers MF, Greendale GA, Lee MT, Neer RM, Cauley JA, Ettinger B. **Ethnic Variation in Bone Turnover in Premenopausal and Early Perimenopausal Women: Effects of Anthropometric and Lifestyle Factors.** Journal of Clinical Endocrinology & Metabolism 2002; 87(7):3051-3056.
Primary Question: Are ethnic differences in bone mineral density (BMD) related to ethnic differences in biochemical measures of bone turnover?
Summary of Findings: Serum osteocalcin levels are highest in Caucasian women, next highest in African-American women, and lowest in Asian women. Urinary N-telopeptide levels are higher in Caucasian and African women than in Asian women. Interestingly, however, the pattern of ethnic variation in bone turnover is quite different from the pattern of ethnic variation in BMD, suggesting that factors other than the current state of bone turnover, such as differences in bone accretion, are responsible for ethnic variation in BMD.
45. Finkelstein JS, Lee MT, Sowers MF, Ettinger B, Neer RM, Kelsey JL, Cauley JA, Huang MH, Greendale GA. **Ethnic Variation in Bone Density in Premenopausal and Early Perimenopausal Women: Effects of Anthropometric and Lifestyle Factors.** Journal of Clinical Endocrinology & Metabolism 2002; 87(7):3057-3067.
Primary Question: Is the traditional view that bone density is highest in African-American women, next highest in Caucasians, and lowest in Asian women correct if other factors are taken into account?
Summary of Findings: The traditional view is only true when bone density is considered without adjustment for ethnic variation in factors that have major effects of bone density, particularly body weight. When bone density is adjusted for these factors, it remains highest in African-American women and is lowest in Caucasians. Depending on the skeletal site, adjusted bone density in Asian women is either similar to that of African-Americans or intermediate between African-Americans and Caucasians. These data help explain some of the well known ethnic variations in fracture rates that heretofore have seemed paradoxical.
46. Kagawa-Singer M, Kim S, Wu K, Adler SR, Kawanishi Y, Wongvipat N, Greendale GA. **Comparison of the Menopause and Midlife Transition between Japanese American and European American Women.** Medical Anthropology Quarterly 2002;16(1):64-91.
Primary Question: How do cultural and biological factors influence the meaning of menopause?
Summary of Findings: In focus groups, consisting of European-American English speaking, Japanese-American Japanese speaking, and Japanese-American English speaking pre-, peri- and postmenopausal women, the constructions of menopause varied by ethnicity, language, and current menopausal status. This highlights the need to have culturally-appropriate research designs in order to address relevant questions that women may have.



47. Villarruel AM, Harlow SD, Lopez M, Sowers MF. **El Cambio de Vida: Conceptualizations of Menopause and Midlife Among Urban Latina Women.** Research & Theory for Nursing Practice: An International Journal 2002;16(2):91-102.
Primary Question: How do Latina women conceptualize and contextualize the experience of the mid-life and menopause?
Summary of Findings: Latinas emphasize three themes: 1) The primacy of health and the importance of harmony and balance; 2) El cambio de vida – something you have to go through; and 3) This time is for me: reorientation and restructuring. This life phase was marked by rediscovery and redefinition as opposed to being defined by physical symptoms.
48. Sampselle CM, Harris V, Harlow SD, Sowers MF. **Midlife Development and Menopause in African American and Caucasian Women.** Health Care for Women International 2002;23(4):351-363.
Primary Question: How does the experience of the menopause differ in African-American and Caucasian women?
Summary of Findings: Caucasian women were primarily concerned about menopause as it altered physical appearance to be less congruent with the societal ideal of youth. In comparison, African-American women viewed menopause as a normal, even welcome part of life. A language of emancipation and awareness of gender-bias were prominent in the women's stories regardless of menopausal status or race.
49. Greendale GA, FitzGerald G, Huang MH, Sternfeld B, Gold E, Seeman T, Sherman S, Sowers MF. **Dietary Soy Isoflavones and Bone Mineral Density: Results from the Study of Women's Health Across the Nation (SWAN).** American Journal of Epidemiology 2002; 155(8):746-754.
Primary Question: Is higher dietary isoflavone intake associated with higher bone mineral density?
Summary of Findings: Soy isoflavone intake was associated with higher bone mineral density (BMD) in women of Japanese, but not Chinese, ethnicity in SWAN. (Intakes were too low in African American and Caucasian women to permit analysis of relation to BMD). These results open exciting avenues for additional study to confirm the apparent differences between Japanese and Chinese women's response to isoflavones and to explore possible mechanisms of this ethnic interaction.
50. Pope SK., Sowers MF, Welch GW, Albrecht G. **Functional Limitations in Women at Midlife: The Role of Health Conditions, Behavioral and Environmental Factors.** Women's Health Issues 2001;11(6):494-502.
Primary Question: What health factors are related to functional limitations in a community-based sample of 40-55 year old women?
Summary of Findings: Intrinsic health variables (including diabetes, heart condition, arthritis, osteoporosis, surgical menopause) and extrinsic variables (including body size, unemployment, difficulty paying for basics, high stress) were associated with functional physical limitations.



51. Sowers MF, Pope S, Welch G, Sternfeld B, Albrecht G. **The Association of Menopause and Physical Functioning in Women at Midlife.** Journal of the American Geriatrics Society 2001;49(11):1485-1492.
Primary Question: Is limitation of physical functioning in women aged 40-55 years associated with the menopausal transition?
Summary of Findings: Even at the relatively early ages of 40-55 years, approx. 20% of women self-reported limitation in physical functioning. Surgical menopause, post-menopause and the use of hormones were more frequently observed among women with "some" and "substantial" physical limitation, even after adjusting for economic status, age, body mass index, and race/ethnicity.
52. Guyll M, Matthews KA, Bromberger JT. **Discrimination and Unfair Treatment: Relationship to Cardiovascular Reactivity Among African American and European American Women.** Health Psychology 2001; 20(5):315-325.
Primary Question: Do women who report experiences of discrimination show blood pressure responses?
Summary of Findings: African-American women (but not European-Americans) who report experiencing subtle forms of mistreatment due to their race show an elevated diastolic blood pressure during a laboratory task that bears similarities to an encounter with racial prejudice. This is not seen for a non-similar task. These findings suggest that racial discrimination is a chronic stressor that might impact negatively on African-American's cardiovascular health.
53. Bromberger JT, Meyer PM, Kravitz HM, Sommer B, Cordal A, Powell L, Ganz PA, Sutton-Tyrrell K. **Psychologic Distress and Natural Menopause: A Multiethnic Community Study.** American Journal Public Health 2001;91(9):1435-1442.
Primary Question: Does the prevalence of psychological distress vary by menopausal status, and if so, are the differences attributable to vasomotor or sleep symptoms?
Summary of Findings: Rates of psychological distress (feeling tense, depressed, and irritable in the previous 2 weeks) were highest in early perimenopause and lower in premenopause and postmenopause. In comparison with premenopausal women, early perimenopausal women were at a greater risk of distress, even after adjustment for vasomotor and sleep symptoms, suggesting that the difference in negative mood/distress is independent of vasomotor symptoms and sleep difficulties. In adjusted analyses, odds of distress were significantly higher for whites than for the other racial/ethnic groups.
54. Lachance L, Sowers M, Jamadar D, Jannausch M, Hochberg M, Crutchfield M. **The experience of pain and emergent osteoarthritis of the knee.** Osteoarthritis and Cartilage 2001; 9:527-532.
Primary Question: Is the prevalence of radiographic osteoarthritis of the knee (OAK) and knee joint pain similar in African-American and Caucasian women? Is the prevalence of OAK related to age, body size, and knee injury?
Summary of Findings: Joint pain in African-American women was more likely to be associated with radiographic OAK when compared with Caucasian women. This suggests differences in these two groups in both how pain is experienced in the OAK process and in the prevalence of non-OAK related pain in knee joints.



55. Matthews KA, Abrams B, Crawford S, Miles T, Neer R, Powell LH, Wesley D. **Body mass index in mid-life women: relative influence of menopause, hormone use, and ethnicity**. International Journal of Obesity and Related Metabolic Disorders 2001;25(6):863-873.
Primary Question: Do menopausal status and use of hormone replacement therapy affect women's weight gain in mid-life?
Summary of Findings: Self-reported weight adjusted for height was similar in women reported a natural menopause and in premenopausal women. However, women who had a hysterectomy were heavier and women who used hormone replacement therapy were lighter. The effects of menopause and hormone use were small relative to those of physical activity and ethnicity.
56. Avis NE, Crawford SL. **SWAN: What It Is and What We Hope to Learn**. Menopause Management 2001; 10(3):8-15.
Primary Question: This article provides a description of SWAN, some key findings, and potential implications of SWAN for clinical practice.
Summary of Findings: Some of the key findings reported from the cross-sectional data that will be mentioned include prevalence of symptoms, factors related to age of menopause, and attitudes towards menopause.
57. Gold EB, Bromberger J, Crawford S, Samuels S, Greendale GA, Harlow SD, Skurnick J. **Factors Associated with Age at Natural Menopause in a Multiethnic Sample of Midlife Women**. American Journal of Epidemiology 2001;153(9):865-874.
Primary Question: Are socio-demographic (education, marital status, parity, etc.) and lifestyle (smoking, oral contraceptive use, etc.) factors related to age at natural menopause?
Summary of Findings: Japanese women had significantly later and Hispanic women an earlier menopause. Current smokers had a significantly earlier menopause than former or never smokers, by about 1-2 years. Women who had never given birth, never used oral contraceptives, were less educated, or with a history of heart disease had significantly earlier menopause.
58. Avis NE, Stellato R, Crawford S, Bromberger J, Ganz P, Cain V, Kagawa-Singer M. **Is there a menopause syndrome? Menopausal status and symptoms across racial/ethnic groups**. Social Science and Medicine 2001;52:345-356.
Primary Question: Do psychosomatic and vasomotor symptoms group together to form a menopausal syndrome? Is symptom reporting related to menopausal status and/or race/ethnicity?
Summary of Findings: Perimenopausal women, hormone users, and women who had surgical menopause reported significantly more vasomotor symptoms but not more psychosomatic symptoms. Caucasian women reported significantly more psychosomatic symptoms than other ethnic groups. African-American women reported significantly more vasomotor symptoms. The pattern of symptom reporting argues against a universal menopausal syndrome consisting of a variety of vasomotor and psychological symptoms.

59. Young JT, Carter KA, Marion MS, Greendale GA. **A Simple Method of Computing Hip Axis Length Using Fan-Beam Densitometry and Anthropometric Measurements.** Journal of Clinical Densitometry 2000;3(4):325-331.
Primary Question: Can a method be developed for accurately measuring hip axis length with the 4500A Hologic densitometer?
Summary of Findings: A cross-calibration study was used to develop an accurate method to measure hip axis length (HAL) using the Hologic 4500A fan-beam densitometer.
60. Sternfeld B, Cauley J, Harlow S, Liu G, Lee M. **Assessment of Physical Activity with a Single Global Question in a Large, Multiethnic Sample of Midlife Women.** American Journal of Epidemiology 2000;152(7):678-687.
Primary Question: Does a global physical activity question differentiate the activity levels of midlife women of diverse ethnicities?
Summary of Findings: Self-reported rating of physical activity level relative to other women of respondent's age does not capture the expected race/ethnic group differences in activity level, but within each race/ethnic group, physical activity is associated similarly with factors such as education and body mass index. This suggests that this global question is not appropriate for race/ethnic comparisons but is useful for ranking individual women by activity level within their race/ethnic group.
61. Gold EB, Sternfeld B, Kelsey JL, Brown C, Mouton C, Reame N, Salamone L, Stellato R. **Relation of Demographic and Lifestyle Factors to Symptoms in a Multi-Racial/Ethnic Population of Women 40-55 Years of Age.** American Journal of Epidemiology 2000;152(5):463-473.
Primary Question: Are socio-demographic (education, cultural background, etc.) and lifestyle (smoking, exercise, etc.) factors related to symptom reporting at midlife?
Summary of Findings: The most important factor affecting reporting of hot flashes and night sweats was menopausal status. Women who were in the early stages of menopause or had finished menopause were 2 to 4 times as likely to report these symptoms as women whose periods were still regular. In addition, these symptoms were reported more frequently by African American and Hispanic women than Caucasian women; and Japanese and Chinese women reported fewer symptoms than Caucasian women. Also, women who were less educated, smoked, or reported less physical activity than other women their age, reported significantly more symptoms than women who were more educated, non-smokers or who reported more physical activity.
62. Harlow SD, Crawford SL, Sommer B, Greendale GA. **Self-defined menopausal status in a multi-ethnic sample of midlife women.** Maturitas 2000; 36(2):93-112.
Primary Question: (1) What factors are associated with women's menopausal status? (2) How good is the agreement between women's self-designation and a menstrual-based classification of menopause?
Summary of Findings: Disagreement between menstrually-based and self-defined menopausal status ranged from 29-39%. Women with vasomotor symptoms tended to self-designate themselves as being in transition regardless of their menstrual patterns. Menstrual characteristics are strong predictors of women's self-perceived menopausal status. However, additional factors, including symptoms and cultural differences in the meaning of specific bleeding patterns, are also relevant and require further investigation.



63. Pope SK, Sowers MF. **Functional Status and Hearing Impairments in Women at Midlife.** Journals of Gerontology Series B--Psychological Sciences & Social Sciences 2000; 55(3):S190-S194.
Primary Question: How common is high frequency hearing loss among 42-52 year old women, as assessed by a clinical evaluation and self-report?
Summary of Findings: Hearing loss measurable by an audiometer is often not perceived by the participant. Self-reported hearing impairment appears to be associated with lower physical and mental functioning. Identification of self-reported hearing loss at mid-life or earlier may facilitate prevention of further hearing loss
64. Adler SR, Fosket JR, Kagawa-Singer M, McGraw SA, Wong-Kim E, Gold E, Sternfeld B. **Conceptualizing menopause and midlife: Chinese American and Chinese women in the U.S.** Maturitas 2000;35(1):11-23.
Primary Question: What are the views of menopause and mid-life in native Chinese and Chinese-American women?
Summary of Findings: Most women who had gone through menopause regarded it as natural, even a new beginning. But many who had not gone through it had concerns for its effect on them physically, emotionally, and socially.
65. Sowers MF, Lachance L, Hochberg M, Jamadar D. **Radiographically defined osteoarthritis of the hand and knee in young and middle-aged African American and Caucasian women.** Osteoarthritis and Cartilage 2000;8(2):69-77.
Primary Question: Does osteoarthritis (OA) occur in women under the age of 45?
Summary of Findings: By age 40, radiographically defined osteoarthritis emerges in both the hands and knees in both black and white women. Prevalence of knee OA was higher in black females (23.1%) compared with white females (8.5%), and although prevalence of hand OA was more comparable between black (25.5%) and white females (19.2%), the joint sites affected differed. The major risk factors reported in studies of older populations are present in this younger population where OA is newly emerging.
66. Hall M, Bromberger J, Matthews K. **Socioeconomic Status as a Correlate of Sleep in African-American and Caucasian Women.** Annals of the New York Academy of Sciences 1999;896:427-30.
Primary Question: How is sleep impacted by socioeconomic status (SES)?
Summary of Findings: Income and the subjective stress of lower SES were significantly related to sleep, after controlling for age, race, menstrual status and education. Lower income and moderate to severe difficulty making ends meet were significantly associated with poorer subjective sleep quality. In a separate set of analyses, difficulty in making ends meet was shown to fully mediate the relationship between income and subjective sleep quality.



67. Sommer B, Avis N, Meyer P, Ory M, Madden T, Kagawa-Singer M, Mouton C, Rasor NO, Adler S. **Attitudes Toward Menopause and Aging Across Ethnic/Racial Groups.** Psychosomatic Medicine 1999;61(6):868-875.

Primary Question: To what degree do attitudes towards menopause and aging vary in women from a wide array of backgrounds and in different stages of menopause?

Summary of Findings: African-America women had the most positive attitudes toward menopause, and Chinese-American and Japanese-American women had the least positive attitudes. Ethnic groups within the US vary slightly, but reliably, in their attitudes toward menopause and aging. Menopausal status was not a consistent predictor of attitude across ethnic groups.

68. Santoro N, Torrens J, Crawford S, Allsworth J, Finkelstein J, Gold E, Korenman S, Lasley W, Luborsky J, Sowers M, Weiss G. **Correlates of Circulating Androgens in Midlife Women: the Study of Women's Health Across the Nation (SWAN).** Journal of Clinical Endocrinology and Metabolism
Primary Question: Are circulating androgens related to symptoms, physical functioning, mood, sexual interest and the presence of metabolic syndrome in midlife women?
Summary of Findings: Sex hormone binding globulin (SHBG), and to a lesser extent, circulating androgens, were most strongly related to the presence of the metabolic syndrome. Relationships between adrenal androgens and physical functioning and self reported health were strongest. Sexual interest was related to both circulating testosterone and SHBG.
69. Matthews KA, Sowers MF, Derby C, Stein E, Miracle-McMahill H, Crawford S. **Ethnic Differences in Cardiovascular Risk Factor Burden among Middle-aged Women: Study of Women's Health Across the Nation.** American Heart Journal
Primary Question: Are there ethnic differences in the major and emerging cardiovascular risk factor levels in mid-life women?
Summary of Findings: African American and Hispanic women have the highest levels of risk factors whereas Japanese and Chinese women have the lowest. However, statistical controls for socioeconomic status, obesity, cigarette smoking, cardiovascular health history, and age substantially attenuated the magnitude of the ethnic differences, suggesting that these factors play a role in understanding why ethnic groups differ in risk factors.
70. Green RS, Gold EB, Samuels SJ, Dosemeci M. **The Relation of Occupational Organic Solvent Exposure to Symptom Reporting in a Sample of Caucasian and Chinese Midlife Women.** Journal of Occupational and Environmental Medicine
Primary Question: What is the relation between a woman's exposure to organic solvents on the job and her symptom reporting and general health?
Summary of Findings: Women with the highest solvent exposure were more than twice as likely to report forgetfulness as working women with no exposure. Women with low solvent exposure reported the best general health of all groups of women.
71. Agatista P, Matthews K, Bromberger J, Edmundowicz D, Sutton-Tyrrell K. **Coronary and Aortic Calcification in Women with a History of Major Depression.** Archive of Internal Medicine
Primary Question: Previous research has shown that depressed women are at an increased risk of developing heart disease. We sought to determine if a history of recurrent major depression was associated with subclinical heart disease, that is, atherosclerosis, by measuring calcification (calcium deposits) of major blood vessels in otherwise healthy, middle-aged women.
Summary of Findings: We found that women who had a history of recurrent major depression were 4 times more likely to have high calcium levels of the coronaries, and 3 times more likely to show high calcium levels in the aorta. These risks were present even when we took into account the woman's age, body size, blood pressure, race and whether she smoked. Our results suggest the need for identifying and treating women with major depression in an effort to prevent progression of atherosclerosis and subsequent heart disease.



72. Avis N, Zhao X, Brockwell S, Johannes C, Ory M, Greendale G. **Correlates of Sexual Function Among Multi-Ethnic Middle-Aged Women: Results from the Study of Women's Health Across the Nation (SWAN).** Menopause
Primary Question: What factors are related to sexual functioning among mid-aged women? Does the association between these factors and sexual functioning vary by ethnicity?
Summary of Findings:
73. Jacobs EA, Karavolos K, Rathouz PJ, Ferris TG, Powell LH. **Limited English Proficiency and Breast and Cervical Cancer Screening in a Multi-Ethnic Population.** American Journal of Public Health
Primary Question: Our hypothesis is that women who report not speaking English well or at all will be less likely to report having received breast and cervical cancer screening compared to English speaking women, and that this association will be independent of other factors such as insurance status, race/ethnicity and contact with healthcare that are associated with reduced receipt of preventive care.
Summary of Findings: We have found that women who report not speaking English well or at all are less likely to receive breast and cervical cancer screening than women who speak English and that these differences are not explained by sociodemographic factors and contact with health care.
74. Sowers MF, Crutchfield M, Richards K, Wilkin M, Furniss A, Jannausch M, Zhang D, Gross M. **Sarcopenia Is Related to Physical Functioning and Leg Strength in Mid-aged Women.** Journal of Gerontology - Medical Sciences accepted, 12/2003
Primary Question: Does 3-year change in lean or fat mass predict functional ability in mid-aged women?
Summary of Findings: A substantial number of mid-aged women (about 1 in 10) had lean mass loss, in spite of an average increase in weight and this loss of lean mass was strongly related to leg strength and less strongly related to gait speed. Additionally, the associations of lean and fat mass with measures of physical function were important after adjusting for age.