



## Permanente Abstracts

Abstracts of articles authored or coauthored by Permanente clinicians.

### Moderate Drinking and Reduced Risk of Heart Disease

*Klatsky AL. Alcohol Res Health 1999;23(1):15-23.*

Although heavier drinkers are at increased risk for some heart diseases, moderate drinkers are at lower risk for the most common form of heart disease, coronary artery disease (CAD) than are either heavier drinkers or abstainers. This association has been demonstrated in large-scale epidemiological studies from many countries. Abstainers may share traits potentially related to CAD risk, such as psychological characteristics, dietary habits, and physical exercise patterns. However, evidence supports a direct protective effect of alcohol, even after data have been adjusted for the presence of these factors. The alcohol-CAD relationship is also independent of the hypothetically increased risk status among abstainers who stopped drinking for medical reasons. All alcoholic beverages protect against CAD, although some additional protection may be attributable to personal traits or drinking patterns among people who share some beverage preferences or to nonalcohol ingredients in specific beverages. Alcohol's protective effect may result from favorable alterations in blood chemistry and the prevention of clot formation in arteries that deliver blood to the heart muscle. Because CAD accounts for a large proportion of total mortality, the risk of death from all causes is slightly lower among moderate drinkers than among abstainers, but heavier drinkers are at considerably higher total mortality risk.

### The Relationship Between Drug Therapy Noncompliance and Patient Characteristics, Health-related Quality of Life, and Health Care Costs

*Billups SJ, Malone DC, Carter BL. Pharmacotherapy 2000 Aug;20(8):941-9.*

The objectives of this study were to determine the relationship between drug therapy compliance and risk of hospitalization and economic outcomes, and to identify potential indicators of compliance.

We used computerized prescription records from 1054 patients at high risk for drug-related problems. We calculated a compliance ratio for a 12-month period and correlated it with health care use, demographic variables, drug-related variables, and scores for health-related quality of life. Univariate results suggested that increased age ( $p = 0.05$ ), high number of chronic conditions ( $p < 0.001$ ), and high number of concurrent drugs ( $p < 0.001$ ) were positively correlated with compliance. That is, increased values for these variables were associated with better compliance. Using logistic regression, the odds of being noncompliant was 0.665 as the number of chronic conditions increased. Compliance was not a predictor of concurrent or future hospitalizations or mortality, nor was it a significant predictor of health care costs.

### Protocol Weaning of Mechanical Ventilation in Medical and Surgical Patients by Respiratory Care Practitioners and Nurses: Effect on Weaning Time and Incidence of Ventilator-associated Pneumonia

*Marelich GP, Murin S, Battistella F, Inciardi J, Vierra T, Roby M. Chest 2000 Aug;118(2):459-67.*

**STUDY OBJECTIVES:** 1) To determine the effect of a single ventilator management protocol (VMP) used in medical and surgical ICUs on the duration of mechanical ventilation. 2) To determine the effect of a VMP on the incidence of ventilator-associated pneumonia (VAP).

**DESIGN:** Prospective, randomized, controlled study.

**SETTING:** University Medical Center.

**PATIENTS:** Three hundred eighty-five patients receiving mechanical ventilation between June 1997 and May 1998.

**INTERVENTIONS:** A respiratory care practitioner- and registered nurse-driven VMP.

**RESULTS:** Intervention and control groups were comparable with respect to age, sex, severity of illness and injury, and duration of respiratory failure at the time of randomization. The duration of mechanical ventilation for patients was decreased from a median of 124 h for the control group to

68 h in the VMP group ( $p = 0.0001$ ). Thirty-one total instances of VAP were noted. Twelve patients in the surgical control group had VAP, compared with five in the surgical VMP group ( $p = 0.061$ ). The impact of the VMP on VAP frequency was less for medical patients. Mortality and ventilator discontinuation failure rates were similar between control and VMP groups.

**CONCLUSIONS:** A VMP designed for multidisciplinary use was effective in reducing duration of mechanical ventilatory support without any adverse effects on patient outcome. The VMP was also associated with a decrease in incidence of VAP in trauma patients. These results, in conjunction with prior studies, suggest that VMPs are a highly effective means of improving care, even in university ICUs.

### The Kaiser Permanente Prenatal Smoking-Cessation Trial: When More Isn't Better, What is Enough?

*Ersboff DH, Quinn VP, Boyd NR, Stern J, Gregory M, Wirtschaffer D. Am J Prev Med 1999 Oct;17(3):161-8.*

**INTRODUCTION:** The effectiveness of low-cost smoking interventions targeted to pregnant women has been demonstrated, although few gains in absolute cessation rates have been reported in the past decade. Under conditions of typical clinical practice, this study examined whether outcomes achieved with brief counseling from prenatal care providers and a self-help booklet could be improved by adding more resource-intensive cognitive-behavioral programs.

**DESIGN:** Randomized Clinical Trial.

**SETTING:** A large-group-model managed care organization.

**PARTICIPANTS:** 390 English-speaking women 18 years of age or older who self-reported to be active smokers at their initial prenatal appointment.

**INTERVENTION:** Participants were randomized to one of three groups: 1) a self-help booklet tailored to smoking patterns, stage of change, and lifestyle of pregnant smokers; 2) the booklet plus access to a computerized telephone cessation program based on interactive voice response tech-



nology; or 3) the booklet plus proactive telephone counseling from nurse educators using motivational interviewing techniques and strategies. No attempt was made to change smoking-related usual care advice from prenatal providers.

**MAIN OUTCOME MEASURE:** Biochemically confirmed abstinence measured by level of cotinine in urine samples obtained during a routine prenatal visit at approximately the 34th week of pregnancy.

**RESULTS:** Twenty percent of participants were confirmed as abstinent with no significant differences found between intervention groups. Multivariate baseline predictors of cessation included number of cigarettes smoked per day, confidence in ability to quit, exposure to passive smoke, and educational level. No differential intervention effects were found within strata of these predictors or by baseline stage of readiness to change. Cessation rates among heavier smokers were strikingly low in all intervention groups.

**CONCLUSION:** Neither a computerized telephone cessation program nor systematic provision of motivational counseling improved cessation rates over a tailored self-help booklet delivered within the context of brief advice from prenatal providers. Innovative strategies need to be developed to increase the effectiveness of existing prenatal smoking interventions. Special attention should be paid to the needs of heavier smokers.

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### The Influence of Intrapartum Antibiotics on the Clinical Spectrum of Early-onset Group B Streptococcal Infection in Term Infants

*Bromberger P, Lawrence JM, Braun D, Saunders B, Contreras R, Petitti DB. Pediatrics 2000 Aug;106(2 Pt 1):244-50.*

**OBJECTIVE:** The use of intrapartum antibiotics to prevent early-onset group B streptococcal (EOGBS) infection has left

pediatricians in a quandary about the appropriate evaluation and treatment of infants at risk for this infection. The aim of this study was to determine whether intrapartum antibiotic prophylaxis changed the constellation and timing of onset of clinical signs of group B streptococcal (GBS) infection in term infants.

**METHODOLOGY:** We conducted a retrospective chart review of infants who had EOGBS infection and were born in Southern California Kaiser Permanente Hospitals from 1988 through 1996. Objective criteria were used to ascertain maternal risk of infection, intrapartum antibiotic prophylaxis, and onset of clinical signs of infection.

**RESULTS:** Three hundred nineteen infants with EOGBS sepsis, bacteremia, or clinically suspected infection were identified from a population of 277,912 live births. Of the 172 term infants with culture-positive infection who had clinical signs of infection, 95 percent exhibited them in the first 24 hours of life. All of the infants exposed to intrapartum antibiotics became ill within the first 24 hours of life.

**CONCLUSIONS:** Exposure to antibiotics during labor did not change the clinical spectrum of disease or the onset of clinical signs of infection within 24 hours of birth for term infants with EOGBS infection. A 48-hour stay is not required to monitor asymptomatic term infants exposed to intrapartum antibiotics for onset of GBS infection.

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### Body Size, Physical Activity, and Breast Cancer Hormone Receptor Status: Results from Two Case-control Studies

*Enger SM, Ross RK, Paganini-Hill A, Carpenter CL, Bernstein L. Cancer Epidemiol Biomarkers Prev 2000 Jul;9(7):681-7.*

We evaluated whether our previous reports of increased postmenopausal breast cancer risk with higher body mass index (BMI) or of reduced premenopausal and postmenopausal breast cancer risk with higher physical activity levels varied accord-

ing to the tumor's estrogen receptor (ER) and progesterone receptor (PR) status. Participants enrolled in either of two population-based case-control studies in Los Angeles County, California: one of premenopausal women (ages  $\leq 40$  years), and one of postmenopausal women (ages 55-64 years). Case participants were diagnosed for the first time with in situ or invasive breast cancer from 7/1/83 through 12/31/88 (premenopausal women) or from 3/1/87 through 12/31/89 (postmenopausal women). Joint ER/PR status was collected for 424 premenopausal and 760 postmenopausal case participants. The analysis included 714 premenopausal and 1091 postmenopausal age-matched, race-matched (white or Hispanic), parity-matched (premenopausal women only), and residential neighborhood-matched control participants. Among the postmenopausal women, obesity was associated with an increased odds of ER+/PR+ breast cancer (odds ratio, 2.45 for women in the highest versus the lowest body mass index quartile; 95 percent confidence interval, 1.73-3.47). Body mass index was associated with neither ER-/PR- tumors among the postmenopausal women nor with any ER/PR subgroup among the premenopausal women. For both premenopausal and postmenopausal women, higher recreational physical activity levels ( $\geq 17.6$  MET-hours/week versus no activity) were associated with a 30-60 percent reduction in risk of nearly all ER/PR subtypes, although the associations were generally of borderline statistical significance. Examining these potentially modifiable breast cancer risk factors by tumor ER and PR status may provide us with greater insight into breast cancer etiology and the mechanisms underlying the risk factor associations.

### How Accurately Does the Medical Record Capture Maternal History of Cancer?

*Husson G, Herrinton LJ. Cancer Epidemiol Biomarkers Prev 2000 Jul;9(7):765-8.*

We sought to assess the reliability of information regarding the maternal history of cancer by comparing the medical



records of 214 women with breast cancer, ages 26-59 years and diagnosed in 1974-1995, and of their controls with the medical records of their mothers. Subjects were members of Kaiser Permanente, Northern California, selected for a study of early-life predictors of breast cancer. For any type of cancer identified in the mother's medical record, the proportion noted in the daughter's medical record at least six months before the daughter's diagnosis or reference date was 56 percent among cases and 32 percent among controls. The odds ratio for the association of maternal cancer history with breast cancer risk was 2.1 using the maternal record and 3.5 using the subject's record. For a maternal history of breast cancer, the proportion noted in the subject's record was 79 percent among cases and 57 percent among controls, and the odds ratios were 4.0 and 6.5, respectively. We believe that the case-control difference in missing information was attributable to higher utilization of breast cancer screening among cases. This study illustrates the need to assess the impact of screening differences on the ascertainment of information from the medical records.

### Asking Women to See Nurses or Unfamiliar Physicians As Part of Primary Care Redesign

Thompson M, Nussbaum R. *Am J Manag Care* 2000 Feb;6(2):187-99.

**OBJECTIVE:** To gauge women's flexibility about seeing a nurse or an unfamiliar physician, to assess their interest in telephone visits, and to identify the characteristics of women who are least flexible.

**STUDY DESIGN:** Telephone surveys, focus groups, and in-person interviews with women.

**PATIENTS AND METHODS:** A random, demographically stratified sample of 1500 English-speaking female members of a health maintenance organization (ages 18-80 years) completed a 20-minute telephone survey (with a 72% response rate). A random subgroup of 500 women were asked about care preferences during acute illness

and routine visit scenarios. Women (n = 242) from the full sample with a chronic illness were asked about their openness to telephone visits and care managers. Qualitative information was gathered from ten focus groups and 75 in-person interviews.

**RESULTS:** Most women (72%) were open to seeing a different physician for a minor acute illness, but they were less so (35%) for a routine checkup. If their physician was not available, the majority said they would be willing to see a registered nurse for the flu (72%) or a nurse-practitioner for a checkup (64%). Half (59%) of the chronically ill women were comfortable with telephone visits, and one third (37%) were "very interested" in care managers. Across scenarios, approximately one third of the women were strongly committed to seeing only their regular physician. They were more likely to be middle-aged or older, to have lower health plan satisfaction and perceived coordination of care, and to recall rude encounters with clinicians.

**CONCLUSION:** The flexibility of most women regarding redesigned models of health care is encouraging. More attention needs to be paid, however, to education of women about multidisciplinary roles, enhancement of coordination of care, and customization of care to match patients' preferences.

### Sexual Orientation and Health: Comparisons in the Women's Health Initiative Sample

Valanis BG, Bowen DJ, Bassford T, Whitlock E, Charney P, Carter RA. *Arch Fam Med* 2000 Sep;9(9):843-53.

**CONTEXT:** Little is known about older lesbian and bisexual women. Existing research rarely compares characteristics of these women with comparable heterosexual women.

**OBJECTIVE:** To compare heterosexual and nonheterosexual women 50 to 79 years on specific demographic characteristics, psychosocial risk factors, screening practices, and other health-related behaviors associated with increased risk for developing particular diseases or disease outcomes.

**DESIGN:** Analysis of data from 93,311 participants in the Women's Health Initiative (WHI) study of health in postmenopausal women, comparing characteristics of five groups: heterosexuals, bisexuals, lifetime lesbians, adult lesbians, and those who never had sex as an adult.

**SETTING:** Subjects were recruited at 40 WHI study centers nationwide representing a range of geographic and ethnic diversity.

**PARTICIPANTS:** Postmenopausal women aged 50 to 79 years who met WHI eligibility criteria, signed an informed consent to participate in the WHI clinical trial(s) or observational study, and responded to the baseline questions on sexual orientation.

**MAIN OUTCOME MEASURES:** Demographic characteristics, psychosocial risk factors, recency of screening tests, and other health-related behaviors as assessed on the WHI baseline questionnaire.

**RESULTS:** Although of higher socioeconomic status than the heterosexuals, the lesbian and bisexual women more often used alcohol and cigarettes, exhibited other risk factors for reproductive cancers and cardiovascular disease, and scored lower on measures of mental health and social support. Notable is the 35 percent of lesbians and 81 percent of bisexual women who have been pregnant. Women reporting that they never had sex as an adult had lower rates of Papanicolaou screening and hormone replacement therapy use than other groups.

**CONCLUSIONS:** This sample of older lesbian and bisexual women from WHI shows many of the same health behaviors, demographic, and psychosocial risk factors reported in the literature for their younger counterparts, despite their higher socioeconomic status and access to health care. The lower rates of recommended screening services and higher prevalence of obesity, smoking, alcohol use, and lower intake of fruit and vegetables among these women compared with heterosexual women indicate unmet needs that require effective interactions between care providers and nonheterosexual women.

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**Vertebral Fracture Prevalence Among Women Screened for the Fracture Intervention Trial and a Simple Clinical Tool to Screen for Undiagnosed Vertebral Fractures. Fracture Intervention Trial Research Group**

*Vogt TM, Ross PD, Palermo L, Musliner T, Genant HK, Black D, Thompson DE. Mayo Clin Proc 2000 Sep; 75(9):888-96.*

**OBJECTIVE:** To evaluate the ability of self-reported risk factors to identify postmenopausal women likely to have extant vertebral fractures because approximately two thirds of women with radiographic evidence of vertebral fracture are unaware of the fracture.

**PATIENTS AND METHODS:** Questionnaire and spinal radiographic data were collected from postmenopausal women with a femoral neck bone mineral density T score of -1.6 or lower during screening for the Fracture Intervention Trial. Logistic regression was used to identify risk factors for extant vertebral fractures and to derive a final multivariable model.

**RESULTS:** Almost two thirds of 25,816 women 55 years and older met the bone density criterion, and 21 percent of those had an extant vertebral fracture. The final model consisted of five self-reported items: history of vertebral fracture, history of nonvertebral fracture, age, height loss, and diagnosis of osteoporosis. These were combined to yield a Prevalent Vertebral Fracture Index (PVFI). The prevalence of women with vertebral fracture varied from 3.8 percent to 62.3 percent over the range PVFI of zero to greater than five. Among the 13,051 women screened with spinal radiographs, a PVFI of four or greater identified 65.5 percent of women with vertebral fractures (sensitivity), with a specificity of 68.6 percent. Excluding 881 women who reported prior vertebral fractures reduced the sensitivity to 53.6 percent and increased the specificity to 70.7 percent but did not alter the fracture prevalence at PVFI values less than six.

**CONCLUSION:** In this population, five simple questions identified women who were likely to have undiagnosed vertebral fractures. Further research is needed to determine the validity of this index in other populations, including women without low bone mineral density.

**Achieving Further Glycemic Control in Type 2 Diabetes Mellitus**

*Nichols GA, Glauber HS, Javor K, Brown JB. West J Med 2000 Sep; 173(3): 175-9.*

**OBJECTIVES:** To identify patients with type 2 diabetes mellitus who were in poor glycemic control and therapeutic adjustments that might improve control.

**DESIGN:** Using electronic pharmacy data, we assigned subjects to one of four therapeutic categories. We then identified patients within each category who did not meet the recommended standard of glycemic control (glycosylated hemoglobin [Hb A<sub>1c</sub>] <0.08 [<8.0%]) and studied their therapeutic regimens for possible improvements.

**SUBJECTS:** The subjects were 5061 members of a large group-model health maintenance organization who had type 2 diabetes and 12 months of 1997 health plan eligibility.

**MAIN OUTCOME MEASURES:** The dosage of antihyperglycemic agents (sulfonylureas, metformin, and insulin) in relation to glycemic control as measured by the Hb A<sub>1c</sub>.

**RESULTS:** A significant number (n = 1570 [31.0%]) of persons with type 2 diabetes might improve their glycemic control with simple adjustments to their pharmacologic therapy.

**CONCLUSION:** Busy clinicians with heavy workloads can improve their management of diabetes by identifying patients whose glycemic control could be improved through a change in medication or simple adjustment in dosage.

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**Hospitalization for Suicide Attempt and Completed Suicide: Epidemiological Features in a Managed Care Population**

*Iribarren C, Sidney S, Jacobs DR Jr, Weisner C. Soc Psychiatry Psychiatr Epidemiol 2000 Jul;35(7):288-96.*

**BACKGROUND:** Understanding factors that contribute to high suicide risk holds important implications for prevention. We

aimed to examine the sociodemographic and medical predictors of attempted suicide (severe enough to require hospitalization) and of completed suicide in a large population-based sample from a health maintenance organization (HMO) in northern California, USA.

**METHOD:** We designed a cohort study, including 87,257 women and 70,570 men aged 15 through 89 years old at baseline (in 1977-1985) with follow-up for hospitalizations and mortality through the end of 1993.

**RESULTS:** After a median of ten years, 169 first hospitalizations for attempted suicide (111 among women, 58 among men) and 319 completed suicides (101 among women, 218 among men) were identified. There was a greater incidence of hospitalization for suicide attempt in women than in men and, conversely, a greater incidence of completed suicide in men than in women. The predominant methods of attempted and completed suicides were ingestion of psychotropic agents and use of firearms, respectively. In gender-specific multivariate analysis of hospitalization for suicide attempt, statistically significant associations were seen for age 15-24 years (women), 65-89 years (men), white race (women), 12th grade or less education (both genders), technical/business school education (men), never being married (men), history of emotional problems (both genders), history of family problems (women), history of job problems (men), and presence of one or more comorbidities (men). The independent predictors of completed suicide were: age 15-24 years (both genders), Asian race (women), Caucasian race (both genders), never being married (both genders), being separated/divorced (women), prior inpatient hospitalization for suicide attempt (both genders) and history of emotional problems (both genders).

**CONCLUSION:** These findings could help health professionals be more effective in the prevention of suicide morbidity and mortality. ♦