

# Abstracts of Articles Authored or Coauthored by Permanente Clinicians

Selected by Louise Williams, PhD, Center for Health Research

*From the Northwest:*

## **The DASH diet and blood pressure**

*Craddock SR, Elmer PJ, Obarzanek E, Vollmer WM, Svetkey LP, Swain MC. Curr Atheroscler Rep 2003 Nov;5(6):484-91.*

High blood pressure (also called hypertension) is one of the most important and common risk factors for atherosclerotic cardiovascular disease (CVD) and other chronic diseases. National guidelines recommend that all individuals with blood pressure readings of 120/80 mm Hg or higher adopt healthy lifestyle habits, including the Dietary Approaches to Stop Hypertension (DASH) diet, to manage their blood pressure. The DASH diet, which is high in fruits, vegetables, and low-fat dairy products and reduced in fat, has been shown in large, randomized, controlled trials to reduce blood pressure significantly. The DASH diet also has been shown to reduce blood cholesterol and homocysteine levels and to enhance the benefits of antihypertensive drug therapy. The DASH diet should be promoted, along with maintaining healthy weight, reducing sodium intake, increasing regular physical activity, and limiting alcohol intake, for lowering blood pressure and reducing the risk of CVD.

*From Southern California:*

## **Risk factors for asthma hospitalizations in a managed care organization: development of a clinical prediction rule**

*Schatz M, Cook EF, Joshua A, Petitti D. Am J Manag Care 2003 Aug;9(8):538-47.*

**OBJECTIVE:** To use a computerized administrative database to develop and validate a clinical prediction rule for the occurrence of asthma hospitalizations.

**STUDY DESIGN:** Retrospective cohort.

**METHODS:** Subjects included asthmatic patients ages 3 to 64 who were continuously enrolled in the Southern California Kaiser Permanente managed care organization in

both 1998 and 1999. Data were based on linkage of a hospital discharge database, diagnosis and procedures database, membership database, and prescription database. The outcome was any 1999 hospitalization with a primary diagnosis of asthma. The outcome was evaluated and modeled separately for children (ages 3-17) and adults (ages 18-64).

**RESULTS:** Univariate analyses showed that hospitalized children were younger than nonhospitalized children. Adults and children hospitalized in 1999 had lower mean household incomes, were more likely to have required an emergency department visit or hospitalization in 1998, used more beta-agonists and oral corticosteroids in 1998, and had more 1998 prescribers than nonhospitalized patients. In multivariable analysis, independent predictors of 1999 hospitalization in children included age and 1998 hospitalizations, beta-agonist dispensings, total anti-inflammatory dispensings, and number of prescribers. Among adults, 1998 hospitalizations and oral steroid dispensings as well as income were independent predictors of hospitalization in 1999. The prediction rules developed in this study identified the 11% to 13% of adults or children with an approximately six-fold higher likelihood for being hospitalized in the following year.

**CONCLUSION:** These models can be used to identify high-risk asthmatic patients in whom targeted intervention might reduce asthma morbidity and cost of care.

**CLINICAL IMPLICATION:** A prior asthma hospitalization is the strongest risk factor for a future asthma hospitalization in both children and adults. Other easily identifiable risk factors include increased beta agonist use in children and oral steroid use in adults. Inhaled steroids could be shown to significantly reduce the risk, at least in children. Patients with these risk factors should be aggressively managed and closely followed. -MS

*From the Northwest:*

## **The primary prevention of heart disease in women through health behavior change promotion in primary care**

*Whitlock EP, Williams SB. Womens Health Issues 2003 Jul-Aug;13(4):122-41.*

**PURPOSE:** To summarize recent evidence-based recommendations for physical activity promotion, dietary improvement, and tobacco cessation from the US Preventive Services Task Force (USPSTF) and the Task Force on Community Preventive Services (CTF), and examine their applicability to the primary prevention of cardiovascular disease (CVD) in women through primary care interventions.

**METHODS:** For the behaviors cited, USPSTF and CTF recommendations and their associated systematic evidence reviews (SERs) were retrieved. Individual articles from the USPSTF healthy diet and physical activity SERs that met our inclusion criteria were systematically examined to determine the applicability of this research to women. We supplemented findings from these sources with comprehensive federal research summaries and SERs from focused searches of systematic review databases relevant to primary CVD prevention in women through healthy behavior change.

**MAIN FINDINGS:** The USPSTF strongly recommends primary care interventions for tobacco cessation. Strong CTF recommendations for multicomponent systems supports for clinicians, telephone support for quitters, and reduced patient costs for effective cessation therapies guide complementary approaches to assist clinicians. The USPSTF recommends intensive behavioral dietary counseling by specialists for high-risk CVD patients, but found insufficient evidence to recommend for routine healthy diet or physical activity promotion in primary care. The evidence base for these recommendations generally applies to women. Better reporting of gender and

minority subgroup outcomes will assist more in-depth understanding of potential differences in either the processes or outcomes of behavior change interventions.

**CONCLUSIONS:** Primary care clinicians, including obstetrician-gynecologists, can contribute to preventing CVD in women through implementing credible evidence-based recommendations for clinical interventions in tobacco and healthy diet. Researchers can further our understanding of gender-specific issues in healthy behavior interventions by reporting process and outcome data for gender and minority subgroups. *Reprinted from Journal of Women's Health Issues, V 13, Whitlock EP, Williams SB, The primary prevention of heart disease in women through health behavior change promotion in primary care, 122-41, Copyright 2003, with permission from Jacobs Institute of Women's Health.*

*From Northern California:*  
**Improvement of gastroesophageal reflux symptoms after radiofrequency energy: a randomized, sham-controlled trial**

*Corley DA, Katz P, Wo JM, et al, Gastroenterology 2003 Sep;125(3):668-76.*

**BACKGROUND AND AIMS:** Gastroesophageal reflux disease is a prevalent disorder that often requires long-term medical therapy or surgery. The United States Food and Drug Administration recently cleared new endoluminal gastroesophageal reflux disease treatments; however, no controlled trials exist.

**METHODS:** We randomly assigned 64 gastroesophageal reflux disease patients to radiofrequency energy delivery to the gastroesophageal junction (35 patients) or to a sham procedure (29 patients). Principal outcomes were reflux symptoms and quality of life. Secondary outcomes were medication use and esophageal acid exposure. After six months, interested sham patients crossed over to active treatment.

**RESULTS:** At six months, active treatment significantly and substantially improved patients' heartburn symptoms and quality of life. More active vs sham patients were without daily heartburn symptoms (n = 19 [61%] vs n = 7 [33%]; p = 0.05), and more had a >50% improvement in their gastroesophageal reflux disease quality of life score (n = 19 [61%] vs

n = 6 [30%]; p = 0.03). Symptom improvements persisted at 12 months after treatment. At six months, there were no differences in daily medication use after a medication withdrawal protocol (n = 17 [55%] vs n = 14 [61%]; p = 0.67) or in esophageal acid exposure times. There were no perforations or deaths.

**CONCLUSIONS:** Radiofrequency energy delivery significantly improved gastroesophageal reflux disease symptoms and quality of life compared with a sham procedure, but it did not decrease esophageal acid exposure or medication use at six months. This procedure represents a new option for selected symptomatic gastroesophageal reflux disease patients who are intolerant of, or desire an alternative to, traditional medical therapies.

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*From the Northwest:*  
**Diabetic retinopathy: contemporary prevalence in a well-controlled population**

*Brown JB, Pedula KL, Summers KH. Diabetes Care 2003 Sep;26(9):2637-42.*

**OBJECTIVE:** To measure the extent to which modern intensified risk factor control has lessened the duration-specific prevalence of diabetic retinopathy and, therefore, has decreased the risk of blindness in Americans with type 2 diabetes.

**RESEARCH AND DESIGN METHODS:** Intensified control of blood glucose and blood pressure has prevented diabetic retinopathy in randomized controlled trials. There is as yet no confirmation that subsequent treatment intensification in the community has had the same result. We identified all 6993 members of a health maintenance organization, Kaiser Permanente Northwest (KPNW), who, in 1997-1998, had dilated retinal examinations and verifiable data of diagnosis of type 2 diabetes. We plotted prevalence by time since diagnosis for background diabetic retinopathy (BDR) and proliferative diabetic retinopathy (PDR) and compared these results to identically derived

1980-1982 results from the Wisconsin Epidemiologic Study of Diabetic Retinopathy (WESDR). We estimated multivariate predictive models.

**RESULTS:** Mean (± SD) HbA<sub>1c</sub> in KPNW was 7.84 ± 1.26% versus 10.37% (standardized) in the WESDR. KPNW blood pressure averaged 138.6 ± 13.8/79.5 ± 7.4 mmHg compared with 147.0/79.0 in the WESDR. BDR was much less prevalent in KPNW, but PDR prevalence appeared unchanged. BDR preceded diagnosis in 20.8% of the WESDR subjects but only 2.0% of KPNW subjects. However, in both populations, the first cases of PDR appeared similarly, soon after diagnosis.

**CONCLUSIONS:** Earlier diagnosis and more aggressive control of blood glucose and blood pressure decreased the duration-adjusted prevalence of background, but not of sight-threatening proliferative retinopathy. More population-based research is needed to replicate and explain this unexpected finding. Detecting and treating PDR should not be neglected on the assumption that risk-factor control has minimized its prevalence.

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**CLINICAL IMPLICATION:** First, even in well-controlled diabetics we should re-emphasize the importance of annual and biennial retinopathy screening exams and make sure that members with pathology are treated and closely followed. Second, we should initiate antihyperglycemic treatments at <7.0% HbA<sub>1c</sub>, rather than at the ADA-recommended 8.0%. This will reduce risk of post-treatment "accelerated diabetic retinopathy," and the long-term glycemic burden of our members. Long-term burden is growing thanks to aggressive CVD prevention, providing more years for development of blindness and renal failure. Third, we should consider rapid, office-based HbA<sub>1c</sub> assays, or have members come in for tests before their visits. Rapid testing reduces mean HbA<sub>1c</sub> and glycemic control may deteriorate quickly as treatments fail. It is hard to respond quickly when the HbA<sub>1c</sub> result arrives after the patient is out the door. —JB

From Northern California:

**The early repolarization normal variant electrocardiogram: correlates and consequences**

*Klatsky AL, Oebm R, Cooper RA, Udaltsova N, Armstrong MA. Am J Med. 2003 Aug 15;115(3):171-7.*

**PURPOSE:** We compared the characteristics and outcomes of patients with “early repolarization” electrocardiograms (ECGs) with those who had normal ECGs.

**METHODS:** In 1983 to 1985, we collected photocopies of 2234 selected ECGs from 73,088 patients undergoing health examinations. Excluding 153 ECGs with missing data or that were judged to be abnormal, the remaining ECGs were reinterpreted in 2000 by cardiologists as showing early repolarization (n = 670), or being borderline (n = 330) or normal (n = 1081). Characteristics and outcomes of persons with early repolarization ECGs were compared with those who had normal ECGs using analysis of variance, logistic regression, or proportional hazards models. Information on exercise was available in 325 patients.

**RESULTS:** Patients with early repolarization were more likely to be male (81% [n = 583] vs 33% [n = 360]), <40 years old (60% [n = 441] vs 37% [n = 403]), black (48% [n = 384] vs 26% [n = 280]), and more athletically active (mean [± SD], 10.4 ± 1.3 hours per week of activity vs 6.4 ± 1.2 hours per week of activity) than those with normal ECGs. Patients with early repolarization were not more likely to be hospitalized (hazard ratio [HR] = 1.0; 95% confidence interval [CI]: 0.9 to 1.2) or to die (HR = 0.8; 95% CI: 0.6 to 1.2) during follow-up than those with normal ECGs. Out-patient diagnoses were not more common in those with early repolarization; arrhythmias were actually less common (p < 0.01).

**CONCLUSION:** Although especially prevalent in young, athletic, black men, early repolarization is not rare in other patients. The long-term prognosis of early repolarization is benign.

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From Northern California:

**Meconium-stained amniotic fluid is associated with puerperal infections**

*Tran SH, Caughey AB, Musci TJ. Am J Obstet Gynecol. 2003 Sep;189(3):746-50.*

**OBJECTIVE:** The purpose of this study was to determine whether meconium-stained amniotic fluid is associated with puerperal infection and whether the quality of the meconium is further associated with this risk.

**STUDY DESIGN:** We designed a retrospective cohort study of all deliveries beyond 37 weeks gestational age from 1992 to 2002 at a single community hospital. Data were collected on rates of chorioamnionitis, endomyometritis, quality of amniotic fluid, and length of labor and analyzed with bivariate and multivariate analyses.

**RESULTS:** We found that, among the 43,200 women who were delivered at term, 18.9% of the women had meconium staining (8.8% thin, 5.5% moderate, 4.6% thick). Compared with deliveries with clear amniotic fluid, those with meconium-stained amniotic fluid had higher rates of chorioamnionitis (2.3% vs 4.1%, p < .001) and endomyometritis (1.0% vs 1.7%, p < .001). Further, the severity of meconium staining was associated with increased rates of infection.

**CONCLUSION:** We found that the presence and severity of meconium-stained amniotic fluid is associated with puerperal infection even when being controlled for confounders.

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From the Northwest:

**The problem is getting us to stop. What teens say about smoking cessation**

*Vuckovic N, Polen MR, Hollis JF. Prev Med. 2003 Sep;37(3):209-18.*

**BACKGROUND:** Low participation and high dropout in many teen cessation programs may be due to lack of fit between teens’ needs and the way programs are delivered. Qualitative studies, designed to identify and un-

derstand preferences of intervention participants and barriers to participation, offer opportunities to customize programs and improve their reach and effectiveness.

**METHODS:** Two sets of focus groups with high school students were held in the Portland, OR, metropolitan area to elicit reactions to two smoking cessation programs and discuss motivations for and experiences with quitting. Thirty-three students (15 girls, 18 boys) participated in the first set of four focus groups; 40 students (21 girls, 19 boys) in the five focus groups for the second.

**RESULTS:** Participants preferred programs that respect the challenges that teens face in quitting, and acknowledge their choice in making the decision to quit. Teens wanted nonjudgmental and confidential support from cessation counselors, and preferred counselors who are ex-smokers, give useful quit tips, and can provide support for quit attempts. Private, computer-based programs and personalized telephone services were options for delivering cessation information and support.

**CONCLUSION:** Teen smokers can supply valuable information to improve youth cessation programs to fit teen lifestyles, respect the challenges teens face, and acknowledge their choice in making the decision to quit.

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**CLINICAL IMPLICATION:** Teen smokers value smoking cessation support that respects their choices about when and how to quit and acknowledges the challenges they face during cessation. Providing confidential, nonjudgmental support and offering cessation strategies and resources that have worked for others are important ways to support teens as they consider and undertake cessation. Many teens liked the idea of using interactive computer-based programs and multi-session telephone-based cessation approaches because of their convenience and confidentiality. Referring teens to such programs provides them with continued support beyond the office visit. –NV ❖