

Kaiser Permanente
Research

Selected findings

2013 publications



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Total publications: 371

First author: 215

Senior author: 169

In 2013, Kaiser Permanente Southern California scientists and clinician researchers made important findings in a variety of research areas. The following is a small sample of some of these discoveries.

Allergy and Asthma

The risk of severe asthma attacks for overweight and obese adults is greater during the fall and winter months.¹

Five questions about medication adherence and asthma control can aid clinicians in identifying patients at risk of not taking their prescribed medications and the specific barriers involved.²

Bone Health and Orthopedics

Patients with diabetes who undergo total knee replacement surgery do not have increased risk of surgical complications compared to those patients without diabetes.³

Use of a comprehensive infection surveillance system, combined with a total joint replacement registry,

identified patient and surgical factors associated with infection following knee replacement surgery.⁴

Risks and benefits of using routine medications to prevent blood clots should be considered in surgeries in which the risk of blood clots may be higher. These include reverse shoulder arthroplasties and traumatic hemiarthroplasties.⁵

Cancer

The presence of microscopic hematuria—blood found in urine that can't be seen by the naked eye—does not necessarily indicate the presence of cancer. This study suggests that tests routinely done on patients with microscopic hematuria could be avoided and has led to the creation of a screening tool to better identify certain types of cancers.⁶

Measurements of serum prostate-specific antigen (PSA) taken over time, the most commonly used screening test for prostate cancer in men, improve the accuracy of aggressive prostate cancer detection when compared to a single measurement of PSA.⁷

Cardiovascular Disease

Nearly 13% of people with high blood pressure have resistant hypertension, meaning their hypertension cannot be controlled with 3 or more medications or they require 4 or more medications to treat their hypertension.⁸

On the cover: Janet Lee, Ernest Shen, Erin Hahn, Corrine Muñoz-Plaza, and Tania Tang

¹ Schatz M, Zeiger RS, Zhang F, Chen W, Yang SJ, Camargo CA. Overweight/obesity and risk of seasonal asthma exacerbations. *J Allergy Clin Immunol Pract*. 2013;1(6):618-622.

² Schatz M, Zeiger RS, Yang SJ, Weinstein AG, Chen W, Saris-Baglama RN, Turner-Bowker DM. Development and preliminary validation of the Adult Asthma Adherence Questionnaire™. *J Allergy Clin Immunol Pract*. 2013;1(3):280-288.

³ Adams AL, Paxton EW, Wang JQ, Johnson ES, Bayliss EA, Ferrara A, Nakasato C, Bini SA, Namba RS. Surgical outcomes of total knee replacement according to diabetes status and glycemic control, 2001 to 2009. *J Bone Joint Surg Am*. 2013;95(6):481-487.

⁴ Namba RS, Inacio MC, Paxton EW. Risk factors associated with deep surgical site infections after primary total knee arthroplasty: an analysis of 56,216 knees. *J Bone Joint Surg Am*. 2013;95(9):775-782.

⁵ Navarro RA, Inacio MC, Burke MF, Costouros JG, Yian EH. Risk of thromboembolism in shoulder arthroplasty: effect of implant type and traumatic indication. *Clin Orthop Relat Res*. 2013;471(5):1576-1581.

⁶ Loo RK, Lieberman SF, Slezak JM, Landa HM, Mariani AJ, Nicolaisen G, Aspera AM, Jacobsen SJ. Stratifying risk of urinary tract malignant tumors in patients with asymptomatic microscopic hematuria. *Mayo Clin Proc*. 2013;88(2):129-138.

⁷ Wallner LP, Frencher SK, Hsu JW, Chao CR, Nichol MB, Loo RK, Jacobsen SJ. Changes in serum prostate-specific antigen levels and the identification of prostate cancer in a large managed care population. *BJU Int*. 2013;111(8):1245-1252.

⁸ Sim JJ, Bhandari SK, Shi J, Liu IL, Calhoun DA, McGlynn EA, Kalantar-Zadeh K, Jacobsen SJ. Characteristics of resistant hypertension in a large, ethnically diverse hypertension population of an integrated health system. *Mayo Clin Proc*. 2013;88(10):1099-1107.

Child and Adolescent Health

Boys are more likely to receive the quadrivalent human papillomavirus vaccine if their mothers receive flu shots or Pap screenings.⁹

Clinical Guidelines

A multi-disciplinary panel developed new recommendations for evaluating patients with potentially cancerous pulmonary nodules. The new guidelines stress the value of assessing the probability of cancer, the accuracy and utility of imaging tests, the need to weigh the benefits and harms of different management strategies (nonsurgical biopsy, surgical resection, and surveillance with chest CT imaging), and the importance of eliciting patient preferences.¹⁰

Diabetes

The distribution of DRB1-DQB1 haplotypes and their association with onset-related characteristics of autoimmune diabetes varies across major racial/ethnic groups in the U.S. This may contribute to variation in clinical presentation of autoimmune diabetes by race/ethnicity.¹¹

High-fat diets may contribute to increased obesity, insulin resistance, and associated beta-cell dysfunction in Mexican-Americans.¹²

Gestational Diabetes

Women who are overweight or obese are more likely to deliver infants who are large for their gestational age at delivery, regardless of whether they develop gestational diabetes during their pregnancy.¹³

Health Equity

Among California Medicaid rheumatoid arthritis patients, African-Americans had 53% lower odds of receiving biologic disease-modifying anti-rheumatic drugs as compared to Caucasians.¹⁴

Injury

Greater body mass index in children is associated with increased odds of lower extremity injuries and pain issues. Because the benefits of physical activity may still outweigh the risk of injury, attention should be paid to injury prevention strategies for children at greater risk for lower extremity injuries.¹⁵

Innovation and Process Transformation

Patients who received automated telephone calls inviting them to get their blood pressure checked at a walk-in clinic were more likely to have controlled hypertension than patients who did not receive calls.¹⁶

Kidney Disease

Black, Hispanic, and Asian patients have higher rates of end-stage renal disease than white patients, due in part to faster kidney function decline and in part to increased survival.¹⁷

⁹ Hechter RC, Chao CR, Sy LS, Ackerson BK, Slezak JM, Sidell MA, Jacobsen SJ. Quadrivalent human papillomavirus vaccine uptake in adolescent boys and maternal utilization of preventive care and history of sexually transmitted infections. *Am J Public Health*. 2013;103(9):e63-68.

¹⁰ Gould MK, Donington J, Lynch WR, Mazzone PJ, Midthun DE, Naidich DP, Wiener RS. Evaluation of individuals with pulmonary nodules: when is it lung cancer?: diagnosis and management of lung cancer, 3rd ed: American College of Chest Physicians evidence-based clinical practice guidelines. *Chest*. 2013;143(5 Suppl):e93S-120S.

¹¹ Black MH, Lawrence JM, Pihoker C, Dolan LM, Anderson A, Rodriguez B, Marcovina SM, Mayer-Davis EJ, Imperatore G, Dabelea D, SEARCH for Diabetes in Youth Study Group. HLA-associated phenotypes in youth with autoimmune diabetes. *Pediatr Diabetes*. 2013;14(2):121-128.

¹² Black MH, Watanabe RM, Trigo E, Takayanagi M, Lawrence JM, Buchanan TA, Xiang AH. High-fat diet is associated with obesity-mediated insulin resistance and beta-cell dysfunction in Mexican-Americans. *J Nutr*. 2013;143(4):479-485.

¹³ Black MH, Sacks DA, Xiang AH, Lawrence JM. The relative contribution of prepregnancy overweight and obesity, gestational weight gain, and IADPSG-defined gestational diabetes mellitus to fetal overgrowth. *Diabetes Care*. 2013;36(1):56-62.

¹⁴ Chu LH, Portugal C, Kawatkar AA, Stohl W, Nichol MB. Racial/ethnic differences in the use of biologic disease-modifying antirheumatic drugs among California Medicaid (MediCal) rheumatoid arthritis patients. *Arthritis Care Res (Hoboken)*. 2013;65(2):299-303.

¹⁵ Adams AL, Kessler JI, Deramerian K, Smith N, Black MH, Porter AH, Jacobsen SJ, Koebnick C. Associations between childhood obesity and upper and lower extremity injuries. *Inj Prev*. 2013;19(3):191-197.

¹⁶ Harrison TN, Ho TS, Handler J, Kanter MH, Goldberg RA, Reynolds K. A randomized controlled trial of an automated telephone intervention to improve blood pressure control. *J Clin Hypertens (Greenwich)*. 2013;15(9):650-654.

¹⁷ Derose SF, Rutkowski MP, Crooks PW, Shi JM, Wang JQ, Kalantar-Zadeh K, Kovesdy CP, Levin NW, Jacobsen SJ. Racial Differences in Estimated GFR Decline, ESRD, and Mortality in an Integrated Health System. *Am J Kidney Dis*. 2013;62(2):236-244.

Maternal and Infant/Neonatal Health

The incidence of chorioamnionitis—an infection of the amniotic fluid, fetal membranes, and placental tissues, and one of the most frequent causes of preterm birth and infant illness—more than doubled between 1995 and 2010.¹⁸

The rate of children diagnosed with Attention Deficit Hyperactivity Disorder rose dramatically between 2001 and 2010, with non-Hispanic white children having the highest diagnosis rates. There also was a 90% increase in the diagnosis of ADHD among non-Hispanic black girls during the same 9-year period.¹⁹

Medication Adherence

Automated phone and letter intervention was effective in reducing the number of patients who didn't fill their first-time statin prescriptions. Because of the low cost of this outreach, this strategy appears feasible for reducing primary nonadherence and may generalize well to other medications and chronic conditions.²⁰

Patients who do not fill their first prescription for cholesterol-lowering statins give a wide range of reasons for not doing so, including perceived concerns about the medication, a fear of side-effects and a decision to try lifestyle modifications instead of prescription.²¹

Nearly 30% of women failed to pick up their bisphosphonate prescriptions, a medication that is most commonly used to treat osteoporosis and similar bone diseases. The failure to pick up these newly prescribed medications can lead to an increased risk of fractures for these patients.²²

Neurological Disorders

Multiple sclerosis is more common in black women than in white women. The finding runs contrary to the widely accepted belief that blacks are less susceptible to MS.²³

Prevention and Behavior Change

High body weight in children and adolescents is strongly associated with the likelihood of hypertension.²⁴

Sports Medicine

Although the overall infection rate after anterior cruciate ligament reconstruction (ACLR) is 0.48%, there is an increased risk of deep infections with hamstring tendon autografts.²⁵

Vaccine Safety and Effectiveness

Older adults who were immunized with the tetanus-diphtheria-acellular pertussis vaccine (Tdap) to help prevent pertussis were at no greater risk of side effects than older adults immunized with tetanus and diphtheria vaccine (Td).²⁶

¹⁸ Fassett MJ, Wing DA, Getahun D. Temporal trends in chorioamnionitis by maternal race/ethnicity and gestational age (1995 - 2010). *Int J Reprod Med.* 2013;2013(5).

¹⁹ Getahun D, Jacobsen SJ, Fassett MJ, Chen W, Demissie K, Rhoads GG. Recent Trends in Childhood Attention-Deficit/Hyperactivity Disorder. *JAMA Pediatr.* 2013;167:282-288.

²⁰ Derose SF, Green K, Marrett E, Tunceli K, Cheetham TC, Chiu VY, Harrison TN, Reynolds K, Vansomphone SS, Scott RD. Automated outreach to increase primary adherence to cholesterol-lowering medications. *JAMA Intern Med.* 2013;173(1):38-43.

²¹ Harrison TN, Derose SF, Cheetham TC, Chiu V, Vansomphone SS, Green K, Tunceli K, Scott RD, Marrett E, Reynolds K. Primary nonadherence to statin therapy: patients' perceptions. *Am J Manag Care.* 2013;19(4):e133-139.

²² Reynolds K, Muntner P, Cheetham TC, Harrison TN, Morisky DE, Silverman S, Gold DT, Vansomphone SS, Wei R, O'Malley CD. Primary non-adherence to bisphosphonates in an integrated healthcare setting. *Osteoporos Int.* 2013;24(9):2509-2517.

²³ Langer-Gould A, Brara SM, Beaver BE, Zhang JL. Incidence of multiple sclerosis in multiple racial and ethnic groups. *Neurology.* 2013;80(19):1734-1739.

²⁴ Koebnick C, Black MH, Wu J, Martinez MP, Smith N, Kuizon B, Cuan D, Young DR, Lawrence JM, Jacobsen SJ. High blood pressure in overweight and obese youth: implications for screening. *J Clin Hypertens (Greenwich).* 2013;15(11):793-805.

²⁵ Maletis GB, Inacio MC, Reynolds S, Desmond JL, Maletis MM, Funahashi TT. Incidence of postoperative anterior cruciate ligament reconstruction infections: graft choice makes a difference. *Am J Sports Med.* 2013;41(8):1780-1785.

²⁶ Tseng HF, Sy LS, Qian L, Marcy SM, Jackson LA, Glanz J, Nordin J, Baxter R, Naleway A, Donahue J, Weintraub E, Jacobsen SJ, Vaccine Safety Datalink (VSD) Team. Safety of a tetanus-diphtheria-acellular pertussis vaccine when used off-label in an elderly population. *Clin Infect Dis.* 2013;56(3):315-321.

