

Top 20 Research Studies of 2017 for Primary Care Physicians**NOT FOR DISTRIBUTION****PREPRODUCTION TEXT FROM AM FAM PHYSICIAN JOURNAL**

MARK H. EBELL, MD, MS

College of Public Health, *University of Georgia, Athens, Georgia*

ROLAND GRAD, MD, MSc

*McGill University, Montreal, Quebec, Canada***Cardiovascular**

Clinical Question	Bottom-Line Answer
What is the best way to measure blood pressure? (Ozone, 2016)	To get the most accurate measure, let patients relax for a few minutes, and then measure their blood pressure on a completely bare arm. Does a difference of 4 mm systolic and 6 mm to 7 mm diastolic matter? It might; especially when deciding whether to add a second or third drug.
How well does monitoring blood pressure for 30 minutes in the office compare with a single office reading in patients suspected of having white coat hypertension? (Bos, 2017)	In this Dutch study, monitoring blood pressure readings in the office for 30 minutes resulted in markedly lower readings compared with the last office reading (~ 23/12 mm Hg lower). The clinicians report they would be much less likely to intensify treatment if they used these readings.
Does intensive systolic blood pressure lowering in older patients increase the likelihood of renal dysfunction? (Beddhu, 2017)	In this post-hoc analysis of the previously published SPRINT trial, lowering the systolic blood pressure of patients who are at increased risk of cardiovascular events (average age 66 years) will decrease their risk of cardiovascular disease but increase their likelihood of developing moderate renal dysfunction. It will not, at least over 3 years, increase their likelihood of developing end-stage renal disease.
Is it better to evaluate for orthostatic hypotension after 1 minute or 3 minutes of standing? (Juraschek, 2017)	Finding an orthostatic drop within the first minute after standing more accurately predicts dizziness and future adverse events than finding it at the currently recommended 3 minutes.
In patients older than 65 years with elevated low-density lipoprotein levels but no cardiovascular disease, does cholesterol lowering decrease mortality or morbidity? (Han, 2017)	If a patient makes it to 65 years old without developing cardiovascular disease, lowering his or her cholesterol level at this point is not effective, and might even be harmful if treatment is started at age 75. Given the lack of benefit also shown in other studies, it might be time to stop checking—and treating—high cholesterol in these age groups.

Infections

Clinical Question	Bottom-Line Answer
Does the use of sterile gloves when performing minor outpatient cutaneous surgeries reduce the risk of infection? (Brewer, 2016)	Eight studies with over 2700 patients found no difference in the risk of infection with the use of nonsterile gloves for common outpatient skin procedures, such as laceration repair and lesion excision. The relative risk of infection was 0.95 (95% CI 0.65 – 1.40).
Is confirmatory diagnostic testing cost-effective for the management of clinically suspected onychomycosis? (Mikailov, 2017)	The most cost-effective approach to the patient with clinically suspected onychomycosis is empiric therapy with oral terbinafine. The chance of liver injury is estimated to be only 1 in 50,000 to 1 in 120,000, so testing to confirm the diagnosis would cost tens of millions of dollars per case of liver injury avoided. If you plan to prescribe the much more expensive topical solution efinaconazole 10% (Jublia), then confirmatory testing with periodic acid-Schiff (PAS) reduces costs

Diabetes mellitus and thyroid disease

Clinical Question	Bottom-Line Answer
Does home monitoring of blood glucose levels improve glycemic control or quality of life in patients with type 2 diabetes who are not using insulin? (Young, 2017)	Lots of numbers, lots of money, lots of strips in landfills, little to show for it. Home glucose monitoring of patients in primary care does not improve hemoglobin A1c scores or quality of life over 1 year in patients who are not taking insulin. Patients did not feel more empowered or satisfied as a result of home monitoring nor have fewer hypoglycemic episodes, and their physicians did not seem to respond to the home glucose levels to any beneficial effect.
What is the long-term effect of intensive blood glucose control in patients with type 2 diabetes? (ACCORD, 2016)	The initial Action to Control Cardiovascular Risk in Diabetes (ACCORD) study, which compared standard treatment with intensive control, found that, despite good intentions, cardiovascular and overall mortality is significantly higher when blood glucose levels are lower. This study, which followed up patients for an additional 5 years, found that patients in the intensive treatment group continued to keep their hemoglobin A1c levels lower than in the standard care group; they also continued to be at increased risk of death from a cardiovascular event.
Are screening tests for pre-diabetes accurate? (Barry, 2017)	In this analysis, an elevated HbA1c or fasting plasma glucose level only sometimes lines up with impaired glucose tolerance testing results via a glucose tolerance test. If we take an abnormal 2-hour glucose tolerance test result to be the true harbinger of eventual type 2 diabetes, an elevated HbA1c level is neither sensitive or specific and a fasting glucose is specific (can accurately rule-in risk) but not sensitive. Depending on the screening test you use, many people will receive an incorrect diagnosis, while others will be falsely reassured.
Is there a clinical benefit to treating subclinical hypothyroidism in older adults? (Stott, 2017)	Treatment of patients with a minimally elevated thyroid-stimulating hormone (TSH) did not result in any improvement in symptoms. If patients present with a TSH between 4.6 mIU and 10 mIU per liter, repeat the test as the levels often normalize (this occurred in 60% of the patients initially referred for the study). Only consider treatment if levels increase to above 10.0 mIU/L.

Musculoskeletal problems

Clinical Question	Bottom-Line Answer
Is pregabalin an effective treatment for the pain of acute or chronic sciatica? (Mathieson, 2017)	This study randomized 207 patients with moderate to severe sciatica, and followed them for one year. They concluded that pregabalin does not relieve pain, improve function, or improve any other outcomes in patients with sciatica.
Are gabapentinoids effective for chronic low back pain? (Shanthanna, 2017)	The existing data on gabapentinoids for chronic low back pain are limited in number and quality. The amount of pain reduction is low to moderate, while the rate of adverse effects is high. The few studies that assessed function found no improvement.
In patients with mild to moderate ankle sprain, does physical therapy (physiotherapy) hasten or improve recovery? (Brison, 2017)	Physical therapy (up to 7 sessions) does not hasten resolution of symptoms or improve function in adults with ankle sprain. Approximately 60% of patients who receive usual care or physical therapy do achieve "excellent" resolution. Send patients home with the usual RICES protocol: rest, ice, compression, elevation, and splinting.
Do intra-articular corticosteroids improve pain and function and decrease cartilage loss in adults with osteoarthritis of the knee? (McAlindon, 2017)	This well-done study found that regular three-month intra-articular injections of triamcinolone for two years resulted in no significant difference in pain and function assessments compared to saline. However, a significant increase in cartilage loss and damage did occur in patients receiving steroids compared to saline.

Screening

Clinical Question	Bottom-Line Answer
Can two questions screen for depression in older adults? (Tsoi, 2017)	The Two-Question Screen for depression consists of 2 written questions: 1) In the past month, have you been troubled by feeling down, depressed or hopeless? and 2) In the past month, have you experienced little interest or pleasure in doing things? If both answers are "no," these questions are good at quickly ruling out depression (sensitivity 92%), but if either answer is "yes," more questioning is needed to confirm the diagnosis.
Does screening of asymptomatic men for prostate cancer improve mortality? (Pinsky, 2017)	After nearly 2 decades of follow-up from the Prostate, Lung, Colorectal, and Ovarian (PLCO) Cancer Screening Trial, there appears to be no mortality benefit to screening asymptomatic men for prostate cancer. These findings are limited to some extent by contamination (about half of the men assigned to no screening had at least one PSA test during the study period).
How do older patients react to the idea of stopping cancer screening toward the end of life? (Schoenborn, 2017)	It seems that we don't want to be reminded that we are approaching what Harlan Ellison calls "the downhill side" of life. When bringing up the idea that cancer screening may no longer be beneficial given a patient's limited life expectancy, using direct language such as "You may not live long enough to benefit from this test" is perceived by many patients as overly harsh. Instead, statements such as "This test will not help you live longer" may be better received. Although not studied, this same approach may be helpful for de-prescribing efforts.

Miscellaneous

Clinical Question	Bottom-Line Answer
Is celecoxib as safe as naproxen or ibuprofen with regard to the risk of cardiovascular events? (Nissen, 2016)	The differences among the drugs are mostly very small, and there is no difference among them for the most important outcomes (death from any cause, cardiovascular death, and stroke). If you choose to recommend celecoxib over less-expensive drugs like naproxen or ibuprofen, prescribe the generic version, which is much less expensive, and do not prescribe more than 200 mg daily.
Does positive airway pressure for adults with sleep apnea reduce cardiovascular disease morbidity and mortality? (Yu, 2017)	The use of positive airway pressure (PAP) for adults with sleep apnea does not reduce adverse cardiovascular events or mortality. Patients who experience daytime fatigue at baseline benefit from reduced sleepiness and improved physical and mental well-being. Order sleep testing only in patients with signs or symptoms of sleep apnea who also experience clinically significant symptoms of daytime fatigue. No one else will benefit.

References

1. Ozone S, Shaku F, Sato M, Takayashiki A, Tsutsumi M, Maeno T. Comparison of blood pressure measurements on the bare arm, over a sleeve, and over a rolled-up sleeve in the elderly. Fam Pract 2016;33(5):517-522.
2. Bos MJ, Buis S. Thirty-minute office blood pressure monitoring in primary care. Ann Fam Med 2017;15(2):120-123.
3. Beddhu S, Rocco MV, Toto R, et al, for the SPRINT Research Group. Effects of intensive systolic blood pressure control on kidney and cardiovascular outcomes in persons without kidney disease. A secondary analysis of a randomized trial. Ann Intern Med 2017;167(6):375-383.
4. Juraschek SP, Daya N, Rawlings AM, et al. Association of history of dizziness and long-term adverse outcomes with early vs later orthostatic hypotension assessment times in middle-aged adults. JAMA Intern Med 2017; Jul 24. doi:10.1001/jamainternmed.2017.2937.
5. Han BH, Sutin D, Williamson JD, et al, for the ALLHAT Collaborative Research Group. Effect of statin treatment vs usual care on primary cardiovascular prevention among older adults. The ALLHAT-LLT randomized clinical trial. JAMA Intern Med 2017; doi:10.1001/jamainternmed.2017.1442.

6. Brewer JD, Gonzalez AB, Baum CL, et al. Comparison of sterile vs nonsterile gloves in cutaneous surgery and common outpatient dental procedures a systematic review and meta-analysis. *JAMA Dermatol* 2016;152(9):1008-1014.
7. Mikailov A, Cohen J, Joyce C, Mostaghimi A. Cost-effectiveness of confirmatory testing before treatment of onychomycosis. *JAMA Dermatol* 2016;152(3):276-281.
8. Young LA, Buse JB, Weaver MA, et al, for the Monitor Trial Group. Glucose self-monitoring in non-insulin-treated patients with type 2 diabetes in primary care settings. A randomized trial. *JAMA Intern Med* 2017;177(7):920-929.
9. The ACCORD Study Group. Nine-year effects of 3.7 years of intensive glycemic control on cardiovascular outcomes. *Diabetes Care* 2016;39(5):701-708.
10. Barry E, Roberts S, Oke J, Vijayaraghavan S, Normansell R, Greenhalgh T. Efficacy and effectiveness of screen and treat policies in prevention of type 2 diabetes: systematic review and meta-analysis of screening tests and interventions. *BMJ* 2017;356:i6538.
11. Stott DJ, Rodondi N, Kearney PM, et al, for the TRUST Study Group. Thyroid hormone therapy for older adults with subclinical hypothyroidism. *N Engl J Med* 2017;376(26):2534-2544.
12. Mathieson S, Maher CG, McLachlan A, et al. Trial of pregabalin for acute and chronic sciatica. *N Engl J Med* 2017;376(12):1111-1120.
13. Shanthanna H, Gilron I, Rajarathinam M, et al. Benefits and safety of gabapentinoids in chronic low back pain: A systematic review and meta-analysis of randomized controlled trials. *PLoS Med* 2017;14(8):e1002369.
14. Brison RJ, Day AG, Pelland L, et al. Effect of early supervised physiotherapy on recovery from acute ankle sprain: randomised controlled trial. *BMJ* 2016;355:i5650.
15. McAlindon TE, LaValley MP, Harvey WF, et al. Effect of intra-articular triamcinolone vs saline on knee cartilage volume and pain in patients with knee osteoarthritis: a randomized clinical trial. *JAMA* 2017;317(19):1967-1975.
16. Tsoi KK, Chan JY, Hirai HW, Wong SY. Comparison of diagnostic performance of Two-Question Screen and 15 depression screening instruments for older adults: systematic review and meta-analysis. *Br J Psychiatry* 2017;210(4):255-260.
17. Pinsky PF, Prorok PC, Yu K, et al. Extended mortality results for prostate cancer screening in the PLCO trial with median follow-up of 15 years. *Cancer* 2017;123(4):592-599.
18. Schoenborn NL, Lee K, Pollack CE, et al. Older adults' views and communication preferences about cancer screening cessation. *JAMA Intern Med* 2017;177(8):1121-1128.
19. Nissen SE, Yeomans ND, Solomon DH, et al for the PRECISION Trial Investigators. Cardiovascular safety of celecoxib, naproxen, or ibuprofen for arthritis. *N Engl J Med* 2016;375(26):2519-2529.
20. Yu J, Zhou Z, McEvoy D, et al. Association of positive airway pressure with cardiovascular events and death in adults with sleep apnea. A systematic review and meta-analysis. *JAMA* 2017;318(2):156-166.