TOP ARTICLES IN FAMILY MEDICINE 2017

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NEVADA ACADEMY OF FAMILY PHYSICIANS

ARTICLES

Most articles available on the Nevada Academy of Family Physicians website

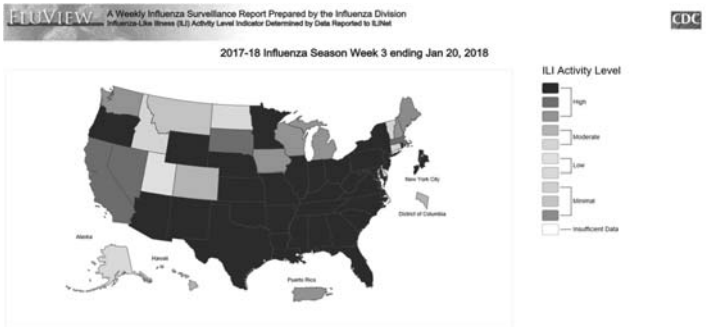
www.nvafp.com

Objectives

- At the end of this presentations, participants will:
  - Be familiar with some of the more important and interesting information from the prior year.
  - Understand the key clinical implications of these findings and recommendations.
  - Improve their ability to critique the medical literature.
  - Enjoy themselves. (we hope)

Flu Activity Highest Since 2009 Pandemic

- CDC reports highest flu activity in the U.S. since the 2009 H1N1 flu pandemic. Widespread in 49 states for past 3 weeks.
- predominant circulating virus strain is H3N2, middle-aged adults may be more susceptible than seniors to the H1N1 strain, which is also circulating.
- Hospitalizations: 65+ ranked #1, 50-64yo ranked #2
- Typically, young children rank second. Officials said that baby boomers are less likely to get vaccinated than seniors.
- The proportion of all deaths related to pneumonia and influenza rose sharply, up to 9.1%, a level last reached in the 2014–15 season.
- 7 child deaths in the past week, total # of deaths = 37 during the season, but likely to represent only 50% of the actual cases.

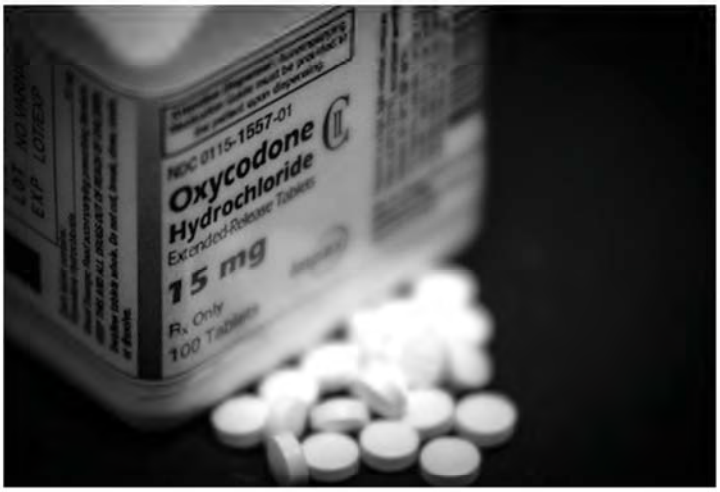


- Failure to repeal and replace Affordable Care Act was most important health policy news of 2017

- Did repeal the individual mandate (2019)

Opioid Crisis Declared Public Health Emergency

In late October, President Trump declared the opioid epidemic a national public health emergency, nearly 3



Hypertension

JACC
JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY

2017
ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults: Executive Summary

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- "The new guidelines – the first comprehensive set since 2003 – lower the definition of high blood pressure …nearly half of the U.S. adult population (46 percent) having high blood pressure…triple among men under age 45…. However, only a small increase is expected in the number of adults requiring antihypertensive medication."

- "The new ACC/AHA guidelines were developed with nine other health professional organizations and were written by a panel of 21 scientists and health experts who reviewed more than 900 published studies."

- (From the ACC)

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Main Points

- New definitions of HTN categories
- The importance of using proper technique to measure blood pressure;
- Only prescribing medications for Stage 1 HTN in those with “high risk” (DM, CVA, >10% ASCVD Risk)
- Many patients will need more than one medication – use combo-pills if appropriate.
- Identifying socioeconomic status and psychosocial stress as risk factors for high blood pressure that should be considered in a patient's plan of care.

Table 6. Categories of BP in Adults*

BP Category	SBP		DBP
Normal	<120 mm Hg	and	<80 mm Hg
Elevated	120–129 mm Hg	and	<80 mm Hg
Hypertension			
Stage 1	130–139 mm Hg	or	80–89 mm Hg
Stage 2	≥140 mm Hg	or	≥90 mm Hg

*Individuals with SBP and DBP in 2 categories should be designated to the higher BP category.

BP indicates blood pressure (based on an average of ≥2 careful readings obtained on ≥2 occasions, as detailed in Section 4); DBP, diastolic blood pressure; and SBP systolic blood pressure.

Key Steps for Proper BP Measurements	Specific Instructions
Step 1: Properly prepare the patient	1. Have the patient relax, sitting in a chair (feet on floor, back supported) for >5 min. 2. The patient should avoid caffeine, exercise, and smoking for at least 30 min before measurement. 3. Ensure patient has emptied his/her bladder. 4. Neither the patient nor the observer should talk during the rest period or during the measurement. 5. Remove all clothing covering the location of cuff placement. 6. Measurements made while the patient is sitting or lying on an examining table do not fulfill these criteria.
Step 2: Use proper technique for BP measurements	1. Use a BP measurement device that has been validated, and ensure that the device is calibrated periodically.* 2. Support the patient's arm (e.g., resting on a desk). 3. Position the middle of the cuff on the patient's upper arm at the level of the right atrium (the midpoint of the sternum). 4. Use the correct cuff size, such that the bladder encircles 80% of the arm, and note if a larger- or smaller-than-normal cuff size is used (Table 9). 5. Either the stethoscope diaphragm or bell may be used for auscultatory readings (3, 4).
Step 3: Take the proper measurements needed for diagnosis and treatment of elevated BP/hypertension	1. At the first visit, record BP in both arms. Use the arm that gives the higher reading for subsequent readings. 2. Separate repeated measurements by 1–2 min. 3. For auscultatory determinations, use a palpated estimate of radial pulse obliteration pressure to estimate SBP. Inflate the cuff 20–30 mm Hg above this level for an auscultatory determination of the BP level. 4. For auscultatory readings, deflate the cuff pressure 2 mm Hg per second, and listen for Korotkoff sounds.
Step 4: Properly document accurate BP readings	1. Record SBP and DBP. If using the auscultatory technique, record SBP and DBP as onset of the first Korotkoff sound and disappearance of all Korotkoff sounds, respectively, using the nearest even number. 2. Note the time of most recent BP medication taken before measurements.
Step 5: Average the readings	Use an average of ≥2 readings obtained on ≥2 occasions to estimate the individual's level of BP.
Step 6: Provide BP readings to patient	Provide patients the SBP/DBP readings both verbally and in writing.

Table 11. Corresponding Values of SBP/DBP for Clinic, HBPM, Daytime, Nighttime, and 24-Hour ABPM Measurements

Clinic	HBPM	Daytime ABPM	Nighttime ABPM	24-Hour ABPM
120/80	120/80	120/80	100/65	115/75
130/80	130/80	130/80	110/65	125/75
140/90	135/85	135/85	120/70	130/80
160/100	145/90	145/90	140/85	145/90

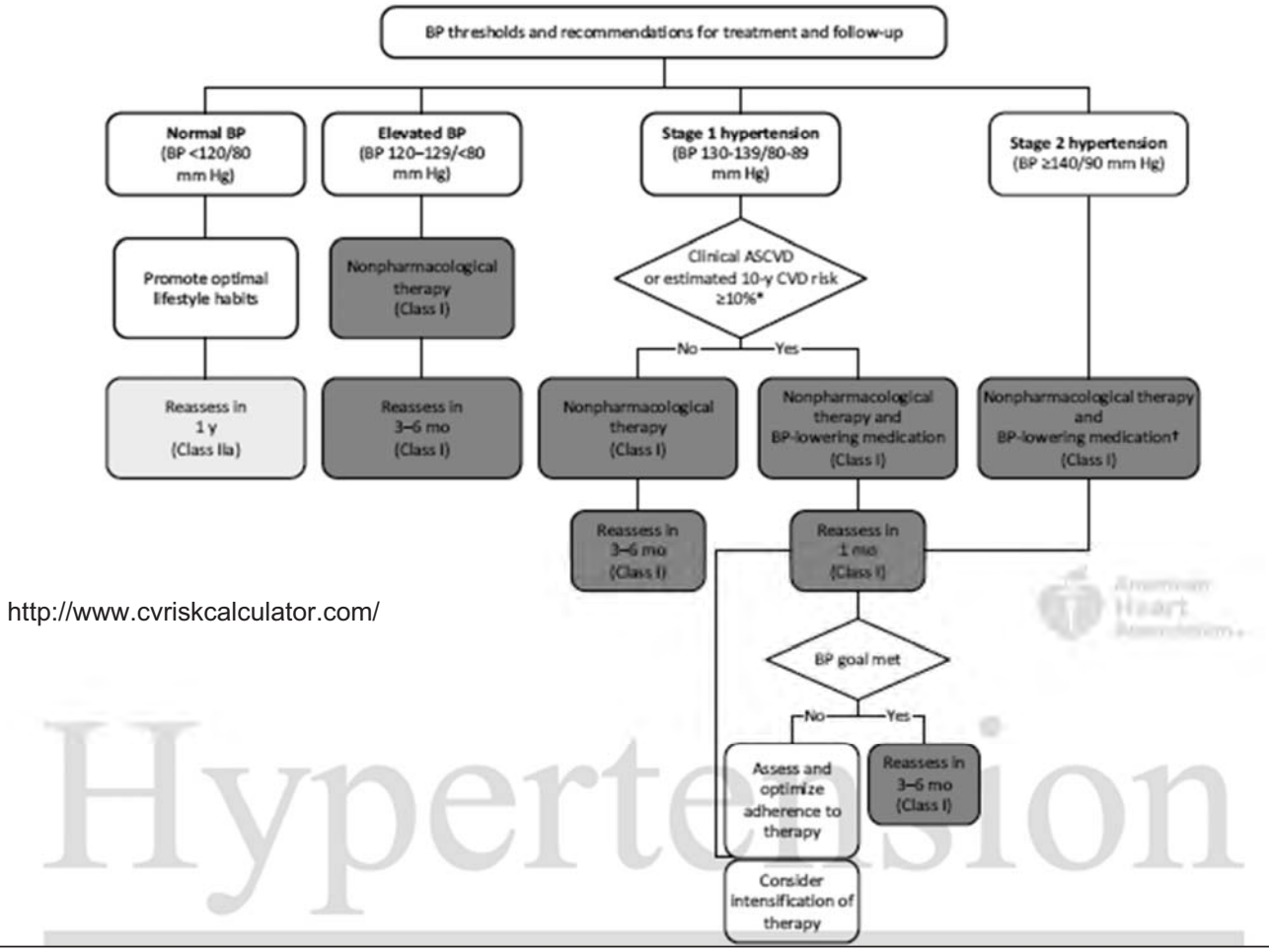
ABPM indicates ambulatory blood pressure monitoring; BP, blood pressure; DBP diastolic blood pressure; HBPM, home blood pressure monitoring; and SBP, systolic blood pressure.

Table 12. BP Patterns Based on Office and Out-of-Office Measurements

	Office/Clinic/Healthcare Setting	Home/Nonhealthcare/ABPM Setting
Normotensive	No hypertension	No hypertension
Sustained hypertension	Hypertension	Hypertension
Masked hypertension	No hypertension	Hypertension
White coat hypertension	Hypertension	No hypertension

ABPM indicates ambulatory blood pressure monitoring; and BP, blood pressure.

Figure 4. Blood Pressure (BP) Thresholds and Recommendations for Treatment and Follow-Up



http://www.cvriskcalculator.com/

Recommendations for Nonpharmacological Interventions References that support recommendations are summarized in Online Data Supplements 9-21.		
COR	**LOE**	**Recommendations**
I	A	**1. Weight loss is recommended to reduce BP in adults with elevated BP or hypertension who are overweight or obese (1-4).**
I	A	**2. A heart-healthy diet, such as the DASH (Dietary Approaches to Stop Hypertension) diet, that facilitates achieving a desirable weight is recommended for adults with elevated BP or hypertension (5-7).**
I	A	**3. Sodium reduction is recommended for adults with elevated BP or hypertension (8-12).**
I	A	**4. Potassium supplementation, preferably in dietary modification, is recommended for adults with elevated BP or hypertension, unless contraindicated by the presence of CKD or use of drugs that reduce potassium excretion (13-17).**
I	A	**5. Increased physical activity with a structured exercise program is recommended for adults with elevated BP or hypertension (3, 4, 12, 18-22).**
I	A	**6. Adult men and women with elevated BP or hypertension who currently consume alcohol should be advised to drink no more than 2 and 1 standard drinks* per day, respectively (23-28).**

*In the United States, 1 "standard" drink contains roughly 14 g of pure alcohol, which is typically found in 12 oz of regular beer (usually about 5% alcohol), 5 oz of wine (usually about 12% alcohol), and 1.5 oz of distilled spirits (usually about 40% alcohol) (29).

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- **Some more points.**
- "It is critical that health care providers follow the standards for accurate BP measurement."
- It is important to screen for and manage other CVD risk factors in adults with hypertension: smoking, diabetes, dyslipidemia, excessive weight, low fitness, unhealthy diet, psychosocial stress, and sleep apnea.
- Screening for secondary causes of hypertension is necessary for new-onset or uncontrolled hypertension in adults including drug-resistant
- The usual impact of each lifestyle change is a 4-5 mm Hg decrease in SBP and 2-4 mm Hg decrease in DBP; but diet low in sodium, saturated fat, and total fat and increase in fruits, vegetables, and grains may decrease SBP by approximately 11 mm Hg.

Table 17. Basic and Optional Laboratory Tests for Primary Hypertension

Basic testing	Fasting blood glucose*
	Complete blood count
	Lipid profile
	Serum creatinine with eGFR*
	Serum sodium, potassium, calcium*
	Thyroid-stimulating hormone
	Urinalysis
	Electrocardiogram
Optional testing	Echocardiogram
	Uric acid
	Urinary albumin to creatinine ratio

*May be included in a comprehensive metabolic panel.
eGFR indicates estimated glomerular filtration rate.

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- The benefit of pharmacologic treatment for BP reduction is related to atherosclerotic CVD (ASCVD) risk.
- Diabetes mellitus (DM) and hypertension: Antihypertensive drug treatment should be initiated at a BP ≥130/80 mm Hg with a treatment goal of <130/80 mm Hg.
- Age-related issues: Treatment of hypertension is recommended for noninstitutionalized ambulatory community-dwelling adults (≥65 years of age), with an average SBP ≥130 mm Hg with SBP treatment goal of <130 mm Hg.

Recommendation for Choice of Initial Medication References that support the recommendation are summarized in Online Data Supplement 27 and Systematic Review Report.		
COR	LOE	Recommendation
I	A^{SR}	1. For initiation of antihypertensive drug therapy, first-line agents include thiazide diuretics, CCBs, and ACE inhibitors or ARBs. (1, 2)

SR indicates systematic review.

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Controversies

- No primary care input (AAFP, ACP not on panel)
- Conflict of interest
- Too much (Exec Summary 102 pages, Full text 481 pages, 106 recommendations, 23 tables, and 11 figures)
- Too aggressive?

This is the big sticking point.

Over-weighted the SPRINT Trial

Not really based on a systematic review (systematic review had results to similar AAFP/ACO 2017 recommendations)

- No direct evidence that varying BP control based on CVD risk factors works (although it makes sense).
- Minimal discussion of harms of more intensive treatment.
- Ability to accurately gauge and monitor BP and adherence in real world versus study was not addressed.

Writing committee representatives

- The writing committee consisted of clinicians, cardiologists, epidemiologists, internists, an endocrinologist, a geriatrician, a nephrologist, a neurologist, a nurse, a pharmacist, a physician assistant, and 2 lay/patient representatives. It included representatives from the SPRINT trial (PI of SPRINT chaired)
- ACC, AHA, American Academy of Physician Assistants (AAPA), Association of Black Cardiologists (ABC), American College of Preventive Medicine (ACPM), American Geriatrics Society (AGS), American Pharmacists Association (APhA), American Society of Hypertension (ASH), American Society for Preventive Cardiology (ASPC), National Medical Association (NMA), and Preventive Cardiovascular Nurses Association (PCNA).
- **Missing a few key stakeholders in the battle against HTN in the US: AAFP and ACP.**

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- So, what are the take home points?
- HTN is a major contributor to early mortality and morbidity.
- Lowering BP lowers risk for MI, CVA and death.
- Patients are people (not just study subjects).

- Getting to Chicago

Potential U.S. Population Impact of the 2017 ACC/AHA High Blood Pressure Guideline

Paul Muntner PhD [a], Robert M. Carey MD [b], Samuel Gidding MD [c], Daniel W. Jones MD [d], Sandra J. Taler MD [e], Jackson T. Wright Jr. MD, PhD [f], Paul K. Whelton MB, MD, MSc [g]

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- **Objectives**: This study sought to determine the prevalence of hypertension, implications of recommendations for antihypertensive medication, and prevalence of BP above the treatment goal among U.S. adults using criteria from the 2017 ACC/AHA guideline and the Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC7).

- **Methods:** The authors analyzed data from the 2011 to 2014 National Health and Nutrition Examination Survey (N = 9,623). BP was measured 3 times following a standardized protocol and averaged. Results were weighted to produce U.S. population estimates.

- **Results**:

	ACC/AHA 2017	JNC7	Difference
prevalence of HTN, US adults (%)	45.6	31.9	13.7
anti-HTN meds recommended (%)	36.2	34.3	1.9
on meds, above tx goals (%)	53.4	39	14.4

Bottom line: Compared with the JNC7 guideline, the 2017 ACC/AHA guideline results in a substantial increase in the prevalence of hypertension, a small increase in the percentage of U.S. adults recommended for antihypertensive medication. and more intensive BP lowering for many adults taking antihypertensive medication. Increased attention to non-pharm BP lowering strategies.

Benefits and Harms of Intensive Blood Pressure Treatment in Adults Aged 60 Years or Older: A Systematic Review and Meta-analysis FREE

Annals of Internal Medicine

Jessica Weiss, MD, MCR; Michele Freeman, MPH; Allison Low, BA; Rochelle Fu, PhD; Amy Kerfoot, MD; Robin Paynter, MLIS; Makalapua Motu'apuaka, BS; Karli Kondo, PhD; Devan Kansagara, MD, MCR

Methods: Systematic review of randomized controlled trials (for primary outcomes) and observational studies

Key Findings:

- All studies showed benefit for hypertension treatment in older adults, most of whom had baseline SBPs >160 mm Hg.
- High-quality evidence showed lower all-cause mortality (ARR, 1.64), stroke incidence (ARR, 1.13), and adverse cardiac events (ARR, 1.25) in patients with *baseline SBPs ≥160 mm Hg who were treated to achieve SBPs <150 mm Hg.*
- In studies with lower SBP targets (<140 mm Hg) compared with higher targets, low-quality evidence showed no significant relative reductions in all-cause mortality or adverse cardiac events, whereas moderate-quality evidence showed lower risk for stroke (ARR, 0.49). However, many of these studies did not achieve target BPs and failed to show significant BP differences between the intensive treatment and control arms, so they might have been unable to show a difference in clinical outcomes.
- In patients with *histories of stroke or transient ischemic attack (TIA)*, moderate-quality evidence suggested that treating to *SBP of 130 mm Hg to 140 mm Hg* lowered risk for stroke recurrence (ARR, 3.02) but not for adverse cardiac events or all-cause death.
- Evidence was insufficient to evaluate benefit of treating patients who have isolated diastolic hypertension.
- With regard to harms, low-quality evidence suggested that treating to lower BP targets (achieved SBP range, 121.5−143 mm Hg) heightened risk for syncope.

Pharmacologic Treatment of Hypertension in Adults Aged 60 Years or Older to Higher Versus Lower Blood Pressure Targets: A Clinical Practice Guideline From the American College of Physicians and the American Academy of Family Physicians FREE

Annals of Internal Medicine

Amir Qaseem, MD, PhD, MHA; Timothy J. Wilt, MD, MPH; Robert Rich, MD; Linda L. Humphrey, MD, MPH; Jennifer Frost, MD; Mary Ann Forciea, MD; for the Clinical Guidelines Committee of the American College of Physicians and the Commission on Health of the Public and Science of the American Academy of Family Physicians (*)

RECOMMENDATIONS:

- Initiate treatment in older adults with SBP persistently ≥150 mm Hg to achieve a target SBP of <150 mm Hg (strong recommendation, high-quality evidence).
- In older adults with previous stroke or TIAs, consider treating to <140 mm Hg to lower risk for recurrence (weak recommendation, moderate-quality evidence).
- In older adults at high cardiovascular (CV) risk, consider treating to <140 mm Hg to lower risk for stroke or adverse cardiac events (weak recommendation, low-quality evidence). Patients at high CV risk include those with known vascular disease, most patients with diabetes, patients with chronic kidney disease (CKD), patients with metabolic syndrome or 10-year CVD risk ≥15%, and older patients (age, ≥75).

BOTTOM LINE:

Target SBP of <150 mm Hg for older patients (age, ≥60) and consider additional lowering of SBP for patients with previous stroke or TIA, or for those at high CV risk.

A recurring theme = individualize treatment goals for each patient.

January 2018

Association of Blood Pressure Lowering With Mortality and Cardiovascular Disease Across Blood Pressure Levels

A Systematic Review and Meta-analysis

JAMA Internal Medicine

Mattias Brunström, MD[1]; Bo Carlberg, MD, PhD[1]

- **Objective** To assess the association between BP lowering treatment and death and CVD at different BP levels.
- **Study Selection** Seventy-four unique trials, representing 306 273 unique participants (39.9% women and 60.1% men; mean age, 63.6 years) and 1.2 million person-years, were included in the meta-analyses.
- **Results** baseline SBP 160 mm Hg or above, treatment was associated with reduced risk for death (RR, 0.93; 95% CI, 0.87-1.00) and a substantial reduction of major cardiovascular events (RR, 0.78; 95% CI, 0.70-0.87).
- baseline SBP ranged from 140 to 159 mm Hg, the association of treatment with mortality was similar (RR, 0.87; 95% CI, 0.75-1.00), but the association with major cardiovascular events was less pronounced (RR, 0.88; 95% CI, 0.80-0.96).
- baseline SBP below 140 mm Hg, treatment was not associated with mortality (RR, 0.98; 95% CI, 0.90-1.06) and major cardiovascular events (RR, 0.97; 95% CI, 0.90-1.04).
- previous CHD and mean baseline SBP of 138 mm Hg, treatment was associated with reduced risk for major cardiovascular events (RR, 0.90; 95% CI, 0.84-0.97), but was not associated with survival (RR, 0.98; 95% CI, 0.89-1.07).
- **Conclusions and Relevance** Primary preventive BP lowering is associated with reduced risk for death and CVD if baseline SBP is 140 mm Hg or higher. At lower BP levels, treatment is not associated with any benefit in primary prevention but might offer additional protection in patients with CHD.

Whew!

Coffee consumption and health: umbrella review of meta-analyses of multiple health outcomes

thebmj

BMJ 2017 ; 359 doi: https://doi.org/10.1136/bmj.j5024 (Published 22 November 2017)
Cite this as: *BMJ* 2017;359:j5024

- **Objectives** To evaluate the existing evidence for associations between coffee consumption and multiple health outcomes.
- **Results** The umbrella review identified 201 meta-analyses of observational research with 67 unique health outcomes and 17 meta-analyses of interventional research with nine unique outcomes.
- Daily consumption of 3 cups of coffee — regular or decaffeinated — was associated with a 17% lower risk for all-cause mortality, relative to no coffee consumption.
- Caffeinated coffee was linked to lower risks for cardiovascular disease, coronary heart disease, and stroke, with benefits highest at 3–5 cups daily.
- Caffeinated coffee was associated with lower risks for cancer and liver conditions.
- Both regular and decaf coffee appeared to lower risk for type 2 diabetes.
- In terms of harms, high coffee consumption in pregnancy was tied to pregnancy loss, low birth weight, and preterm birth. High consumption was also associated with higher fracture risk in women, but not men.
- **Bottom line: Coffee consumption seems generally safe within usual levels of intake, with summary estimates indicating largest risk reduction for various health outcomes at three to four cups a day, and more likely to benefit health than harm. Robust randomized controlled trials are needed to understand whether the observed associations are causal. Editorial comment: "The evidence is so robust and consistent ... that we can be reassured that drinking coffee is generally safe."**

Percutaneous coronary intervention in stable angina (ORBITA): a double-blind, randomised controlled trial

THE LANCET

*Rasha Al-Lamee, David Thompson, Hakim-Moulay Dehbi, Sayan Sen, Kare Tang, John Davies, Thomas Keeble, Michael Mielewczik, Raffi Kaprielian, Iqbal S Malik, Sukhjinder S Nijjer, Ricardo Petraco, Christopher Cook, Yousif Ahmad, James Howard, Christopher Baker, Andrew Sharp, Robert Gerber, Suneel Talwar, Ravi Assomull, Jamil Mayet, Roland Wensel, David Collier, Matthew Shun-Shin, Simon A Thom, Justin E Davies, Darrel P Francis, on behalf of the ORBITA investigators**

Published online November 2, 2017

- **Objective**: To assess whether PCI relieves symptoms of unstable angina more than medical therapy.
- **Methods**: Blinded, randomised trial of PCI versus a placebo procedure for angina relief that was done at five study sites in the UK. Patients with severe (≥70%) single-vessel stenosis. After enrolment patients received 6 weeks of medication optimization. Patients were randomized to PCI or sham PCI. Final outcome measurement was difference in exercise time increment between groups.
- **Results**: 200 patients randomized, mean stenosis 84.4%, fractional flow reserve 0.69.
- No difference in exercise time increment between groups.
- No deaths. 4 pressure wire complications requiring PCI in the placebo group. Bleeding events: 2 PCI, 3 placebo.

Discussion:

- This study highlights the importance (and rarity) of placebo control arms for procedures. Unfortunately we've "known" this since at least the 1950's with the IMA sham procedures for angina!
- Builds on the COURAGE trial which showed PCI didn't affect mortality ("We knew this. PCI is for symptoms!")
- Big limitations: Small study (200), 30% with "Normal FFR/IFR", only 6 week follow up, very intensive medical follow up and titration, very low risk patients.

Bottom line:

Feel reassured if your patient doesn't want PCI for angina, but it probably won't change practice patterns (COURAGE hasn't).

Risk of acute myocardial infarction with NSAIDs in real world use: bayesian meta-analysis of individual patient data

thebmj

Michèle Bally,[1,2] Nandini Dendukuri,[3,4] Benjamin Rich,[4] Lyne Nadeau,[4] Arja Helin-Salmivaara,[5] Edeltraut Garbe,[6] James M Brophy[2,4,7]

- **Objective** To characterize the determinants, time course, and risks of acute myocardial infarction associated with use of oral non-steroidal anti-inflammatory drugs (NSAIDs).
- **Design** Systematic review followed by a one stage bayesian individual patient data meta-analysis. Studies from Canadian and European healthcare databases.
- **Exposure and outcomes** The outcome measures were the summary adjusted odds ratios of first acute myocardial infarction after study entry for each category of NSAID use at index date (date of acute myocardial infarction for cases, matched date for controls) versus non-use in the preceding year and the posterior probability of acute myocardial infarction.
- **Results** A cohort of 446 763 individuals including 61 460 with acute myocardial infarction was acquired. *Taking any dose of NSAIDs for one week, one month, or more than a month was associated with an increased risk of myocardial infarction.* With use for one to seven days the probability of increased myocardial infarction risk (posterior probability of odds ratio >1.0) was 92% for celecoxib, 97% for ibuprofen, and 99% for diclofenac, naproxen, and rofecoxib. The corresponding odds ratios (95% credible intervals) were 1.24 (0.91 to 1.82) for celecoxib, 1.48 (1.00 to 2.26) for ibuprofen, 1.50 (1.06 to 2.04) for diclofenac, 1.53 (1.07 to 2.33) for naproxen, and 1.58 (1.07 to 2.17) for rofecoxib. *Greater risk of myocardial infarction was documented for higher dose of NSAIDs. With use for longer than one month, risks did not appear to exceed those associated with shorter durations.*
- **Conclusions** All NSAIDs, including naproxen, were found to be associated with an increased risk of acute myocardial infarction. Risk of myocardial infarction with celecoxib was comparable to that of traditional NSAIDS. Risk was greatest during the first month of NSAID use and with higher doses.

EXTENDED REPORT

Pharmaceutical-grade Chondroitin sulfate is as effective as celecoxib and superior to placebo in symptomatic knee osteoarthritis: the ChONdroitin versus CElecoxib versus Placebo Trial (CONCEPT)

Annals of the Rheumatic Diseases

Ann Rheum Dis 2017;**0**:1–7.

- **Objective**: To compare the efficacy of chondroitin sulfate with celecoxib n the management of knee osteoarthritis.
- **Methods**: Prospective, RCT comparing chondroitin, celecoxib and placebo over 6mos in 5 European countries.
- Compared VAS and Lequesne Index scores.
- **Results**: 604 patients - CS and celecoxib showed a greater significant reduction in pain and LI than placebo.
- In the intention-to-treat (ITT) population, pain reduction in VAS at day 182 in the CS group (−42.6 mm) and in celecoxib group (−39.5 mm) was significantly greater than the placebo group (−33.3 mm) (p=0.001 for CS and p=0.009 for celecoxib), while no difference observed between CS and celecoxib.
- All treatments demonstrated excellent safety profiles.

Discussion:

- 4.3 million Americans with OA of the knee, leading to a LOT of NSAID use. Differing recommendations on use of chondroitin.
- Moderate, and equal, benefit from both chondroitin and celecoxib compared to placebo
- Larger GAIT study showed no benefit of chondroitin.

Bottom line:

Chondroitin MAY help some patients with OA of the knee and seems have very little harm. Why not?

Importance of Assessing Cardiorespiratory Fitness in Clinical Practice: A Case for Fitness as a Clinical Vital Sign

A Scientific Statement From the American Heart Association

Circulation

Circulation. 2016;134:00–00.

- 37 page practice recommendation
- Cites 3 decades of evidence that "firmly established" relationship between CRF and mortality.
- Authors of the 2013 ASCVD risk calculator excluded CRF because evidence it would enhance risk classification was "inconclusive".
- The AHA/ACC now recognizes this as a mistake. (duh!)
- CRF is as strong a predictor of mortality as diabetes mellitus, smoking, hypertension and dyslipidemia
- < 5 METS associated with high mortality and >8 METS with a significant reduction in mortality (30-50%!)
- Every MET increase in fitness (especially at the low end), is associated with a 10 – 20% decrease in mortality!!!
- CRF can be improved (even just walking 3 times a week)

Discussion:

The challenge is putting this into practice. How do we evaluate fitness?

Recommended methods include: Maximal testing with CPS, Maximal exercise testing w/o CPX, Submaximal exercise testing, ….. Estimations.

Bottom line:

We need to start incorporating CRF (or, more likely, LACK of CRF) into risk calculators.

Estimations aren't ideal, but good enough

Low, medium and high levels of CRF correspond to HR of approximately 1.5, 1, 0 and 0.75 for mortality

JAMA Internal Medicine | Original Investigation

Glucose Self-monitoring in Non-Insulin-Treated Patients With Type 2 Diabetes in Primary Care Settings A Randomized Trial

JAMA Internal Medicine

JAMA Intern Med. 2017;177(7):920-929.
Published online June 10, 2017.

Study

- **Objective**:To compare 3 approaches of SMBG for effects on hemoglobin A1c levels and health-related quality of life (HRQOL) among people with non–insulin-treated type 2 diabete in primary care practice.
- **Methods**: Open label trial in 15 primary care practices in NC. DM2 age >30, HbA1c 6.5 – 9.5 in the preceding 6 months. Compared No SMBG, Once daily SMBG and once daily SMBG with enhanced feedback. Outcomes were HbA1c levels at and HRGOL at 52 weeks.

Results:

- 450 patients were randomized and 418 (92.9%) completed the final visit.
- There were no significant differences in hemoglobin A1c levels, HRQOL or adverse events.

Discussion

- ADA and Am Assoc of Diabetic Educators still encourage SMBG.
- Prior studies found increased anxiety and depression with SMBG.
- "Pragmatic trial", compared intervention (no SMBG) with current practice in "real world setting" (rural practices in NC).

Bottom line:

Consistent with Cochrane Review and other studies telling us SMBG is not helpful in most patients NOT on insulin.

Just say no!

What a difference a year makes !

Diazepam Is No Better Than Placebo When Added to Naproxen for Acute Low Back Pain

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Annals of Emergency Medicine
An International Journal

- **Objective:** Low back pain patients are often treated with nonsteroidal anti-inflammatory drugs and benzodiazepines. The former is an evidence-based intervention, whereas the efficacy of the latter has not been established. We compare pain and functional outcomes 1 week and 3 months after ED discharge among patients randomized to a 1-week course of naproxen+diazepam versus naproxen+placebo.

- **Methods: R**andomized, double-blind, comparative efficacy clinical trial conducted in an urban health care system. Patients presenting with acute, nontraumatic, nonradicular low back pain of no more than a duration of 2 weeks were eligible for enrollment .

- **Outcome:** The primary outcome in the trial was improvement in the score between ED discharge and 1 week later. Secondary outcomes included pain intensity 1 week and 3 months after ED discharge, as measured on a 4-point descriptive scale (severe, moderate, mild, and none).

- **Results:** Five hundred forty-five patients were screened for eligibility. One hundred fourteen patients met selection criteria and were randomized. One hundred twelve patients (98%) provided 1-week outcome data.

- At 1-week follow-up and 3-month follow-up, improvements in pain and disability were similar in the two groups Adverse events were mild and comparable in the two groups.

- **Conclusion:** Among ED patients with acute, nontraumatic, nonradicular low back pain, naproxen+diazepam did not improve functional outcomes or pain compared with naproxen+placebo 1 week and 3 months after ED discharge.

- **BOTTOM LINE: Leave the benzo's in the pharmacy where they belong.**

Trial of Pregabalin for Acute and Chronic Sciatica

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The NEW ENGLAND JOURNAL of MEDICINE
MARCH 23, 2017 VOL. 376 NO. 12

Study

- **Objective**: To assess the efficacy of pregabalin for acute and chronic sciatica.
- **Methods**: Randomized, double-blind, RCT of pregabalin 150 – 600mg daily vs placebo. Primary endpoint was leg pain (10 point scale) at 8 weeks. Secondary endpoints included pain at 52 weeks, disability, quality of life and back pain.
- **Results**: 209 randomized. Leg pain intensity at 8 weeks was 3.7 in the pregabalin group and 3.1 in the placebo group (mean difference 95%CI -0.2 – 1.2). Mean pain difference was similar at the end of 52 weeks. No secondary outcomes showed a benefit of pregabalin. Adverse events were almost twice as common in the pregabalin group 227 vs 124) with dizziness being the most common adverse event.

Discussion:

While it would be great news if we had an effective, non-opioid medication for back pain and sciatica, this study demonstrates that pregabalin just isn't it. An important note on this study, however, is that it combined chronic and acute sciatica, and that most (80%) of patients had ACUTE sciatica. This study also found twice as many negative side effects (especially dizziness) in the pregabalin group. The authors also noted that many patients in both groups had significant improvement.

Bottom line:

- **Tincture of time and a bit of exercise are probably the most effective (and least harmful) therapies for most patients with sciatica.**
- **Remember to check for "red flags'!**

Oral morphine versus ibuprofen administered at home for postoperative orthopedic pain in children: a randomized controlled trial

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cmaj
BEST EVIDENCE • BEST PRACTICE • BEST HEALTH

- BACKGROUND: Oral morphine for postoperative pain after minor pediatric surgery, while increasingly popular, is not supported by evidence. We evaluated whether oral morphine was superior to ibuprofen for at-home management of children's postoperative pain.
- METHODS: We conducted a randomized superiority trial comparing oral morphine (0.5 mg/kg) with ibuprofen (10 mg/kg) in children 5 to 17 years of age who had undergone minor outpatient orthopedic surgery (June 2013 to September 2016). Participants took up to 8 doses of the intervention drug every 6 hours as needed for pain at home.
- RESULTS: We analyzed data for 77 participants in each of the morphine and ibuprofen groups. Both interventions decreased pain scores with no difference in efficacy. The median difference in pain score before and after the first dose of medication was 1 (interquartile range 0–1) for both morphine and ibuprofen ($p = 0.2$). For doses 2 to 8, the median differences in pain score before and after the dose were not significantly different between groups.
- Significantly more participants taking morphine reported adverse effects (45/65 [69%] v. 26/67 [39%], $p < 0.001$), most commonly drowsiness (31/65 [48%] v. 15/67 [22%] in the morphine and ibuprofen groups, respectively; $p = 0.003$).
- CONCLUSION: Morphine was not superior to ibuprofen, and both drugs decreased pain with no apparent difference in efficacy. Morphine was associated with significantly more adverse effects, which suggests that
- **BOTTOM LINE: I*buprofen is a better first-line option after minor surgery. Does this externally generalizable to all types of minor surgery or in-office procedures?***

Bariatric Surgery versus Intensive Medical Therapy for Diabetes — 5-Year Outcomes

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The NEW ENGLAND JOURNAL of MEDICINE

N ENGL J MED 376;7 NEJM.ORG FEBRUARY 16, 2017

Study

- **Background/Objective:** Long-term results from randomized, controlled trials that compare medical therapy with surgical therapy in patients with type 2 diabetes are limited
- **Methods**: Three-group, randomized, controlled, nonblinded, single-center study involving 150 obese patients who had type 2 diabetes,
- **Results**
- All measures improved more in the surgical groups than in the medical groups, with gastric bypass superior to sleeve gastrectomy (HbA1c 7.0 vs 8.5, wt loss 5.3kg vs 23.2)
- **Discussion**:
- Nonblinded study at one center, only 150 patents.
- Although the results are impressive, they were almost all DOE's (HbA1c, Lipids). No difference in retinopathy. QALY was somewhat better in the surgical groups.

Bottom line:

Surgery beats medical therapy for many patients with diabetes and obesity.

Corticosteroids for treatment of sore throat: systematic review and meta-analysis of randomised trials

thebmj

Behnam Sadeghirad,[1,2] Reed A C Siemieniuk,[1] Romina Brignardello-Petersen,[1,3] Davide Papola,[4] Lyubov Lytvyn,[5] Per Olav Vandvik,[6,7] Arnaud Merglen,[8] Gordon H Guyatt,[1] Thomas Agoritsas[1,9]

- **Objective** To estimate the benefits and harms of using corticosteroids as an adjunct treatment for sore throat.
- **Design** Systematic review and meta-analysis of randomised control trials of the addition of corticosteroids to standard clinical care for patients aged 5 or older in emergency department and primary care settings with clinical signs of acute tonsillitis, pharyngitis, or the clinical syndrome of sore throat. Trials were included irrespective of language or publication status.
- **Results** 10 eligible trials enrolled 1426 individuals.
- Patients who received single low dose corticosteroids (the most common intervention was oral dexamethasone with a maximum dose of 10 mg) were twice as likely to experience pain relief after 24 hours (relative risk 2.2 and 1.5 times more likely to have no pain at 48 hours
- The mean time to onset of pain relief in patients treated with corticosteroids was 4.8 hours earlier and the mean time to complete resolution of pain was 11.1 hours than in those treated with placebo. The absolute pain reduction at 24 hours (visual analogue scale 0-10) was greater in patients treated with corticosteroids
- Six studies reported no adverse effects, and three studies reported few adverse events, which were mostly complications related to disease, with a similar incidence in both groups.
- **BOTTOM LINE: Single low dose corticosteroids can provide pain relief in patients with sore throat, with no increase in serious adverse effects. DON'T FORGET THAT ANTIBIOTICS DO NOT TREAT PAIN!**

JAMA | Original Investigation

Association Between Early Participation in Physical Activity Following Acute Concussion and Persistent Postconcussive Symptoms in Children and Adolescents

JAMA The Journal of the American Medical Association

JAMA December 20, 2016 Volume 316, Number 23

Study

Objective: To investigate the association between participation in physical activity within 7 days postinjury and incidence of persistent postconcussive symptoms (PPCS)

Methods:

- Prospective, multicenter cohort study patients aged 5.00-17.99 years with acute concussion from 9 Canada network emergency departments (EDs

Results:

- 2413 participants. On unadjusted analysis, early physical activity participants had lower risk of PPCS than those with no physical activity (24.6%vs 43.5%; Absolute risk difference [ARD], 18.9%[95%CI,14.7%-23.0%]).

Discussion:

Cohort study – children were NOT assigned to activity levels (possible confounding)

ASSM has not weighed in.

Many sports docs are slowly progressing activity if MILD symptoms.

Bottom line:

If the kid doesn't want to stay in bed, that's good! Let her go – SLOWLY!

Limit screen time!

Pharmacologic Treatment of Seasonal Allergic Rhinitis: Synopsis of Guidance From the 2017 Joint Task Force on Practice Parameters FREE

Annals of Internal Medicine

Dana V. Wallace, MD; Mark S. Dykewicz, MD; John Oppenheimer, MD; Jay M. Portnoy, MD; David M. Lang, MD

- **Description:**The Joint Task Force on Practice Parameters, which comprises representatives of the American Academy of Allergy, Asthma and Immunology (AAAAI) and the American College of Allergy, Asthma and Immunology (ACAAI), formed a workgroup to review evidence and provide guidance to health care providers on the initial pharmacologic treatment of seasonal allergic rhinitis in patients aged *12 years or older.*

- **Methods:**To update a prior systematic review,

- **Recommendation 1:***For initial treatment of seasonal allergic rhinitis in persons aged 12 years or older, routinely prescribe monotherapy with an intranasal corticosteroid rather than an intranasal corticosteroid in combination with an oral antihistamine. (Strong recommendation)*

- **Recommendation 2:***For initial treatment of seasonal allergic rhinitis in persons aged 15 years or older, recommend an intranasal corticosteroid over a leukotriene receptor antagonist. (Strong recommendation)*

- **Recommendation 3:***For treatment of moderate to severe seasonal allergic rhinitis in persons aged 12 years or older, the clinician may recommend the combination of an intranasal corticosteroid and an intranasal antihistamine for initial treatment. (Weak recommendation)*

BOTTOM LINE: 1st line: Use intranasal steroids +/- intranasal antihistamine (azelastine, Astepro). Not much discussion on use of PO antihistamines and montelukast.

Fluticasone/azelastine spray available (*Dymista)*

2017 ACC/AHA/HRS Guideline for the Evaluation and Management of Patients With Syncope

A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines, and the Heart Rhythm Society

JACC
JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY

RECOMMENDATIONS:

- In obtaining a medical history, focus questions on elucidating situations in which syncope occurs (e.g., time in relationship to meals and exercise), prodromal symptoms, and patient comorbidities and medication use.
- Perform a physical examination to determine orthostatic blood pressure and heart rate changes when the patient is lying down and sitting, has just stood up, and has been upright for 3 minutes.
- A resting, 12-lead electrocardiogram is useful when first evaluating a patient with syncope to help identify the cause (e.g., ventricular tachyarrhythmia).
- Cardiac imaging (e.g., transthoracic echocardiography or MRI) is not useful unless the initial exam or ECG suggests a cardiac cause.

BOTTOM LINE: Mandatory items to evaluation: careful history, orthostatics, EKG. Tailor remaining work-up based upon your findings

JAMA Internal Medicine | Original Investigation

Thiazolidinediones and Advanced Liver Fibrosis in Nonalcoholic Steatohepatitis
A Meta-analysis

JAMA Internal Medicine

JAMA Internal Medicine May 2017 Volume 177, Number 5

Objective: To synthesize the evidence about the association of thiazolidinedione therapy with advanced liver fibrosis in NASH.

Methods: A meta-analysis of randomized clinical trials evaluating the effect of thiazolidinedione therapy on histologic features of the liver in biopsy-proven NASH.

Results:

- The primary outcome was a dichotomous improvement in advanced fibrosis on liver biopsy, defined as an improvement in fibrosis stage from F3-F4 to F0-F2. Secondary outcomes were at least a 1-point improvement in fibrosis of any stage and NASH resolution.
- 8 RCTs (5 evaluating pioglitazone use and 3 evaluating rosiglitazone maleate use) enrolling 516 patients with biopsy-proven NASH for a duration of 6 to 24 months.
- Among all studies combined, thiazolidinedione therapy was associated with improved advanced fibrosis (OR, 3.15; 95%CI, 1.25-7.93; P = .01)
- All effects were accounted for by pioglitazone use.

Discussion:

It's exciting to have a therapy that might work for slowing the progression of NASH, but there are (of course) caveats. We don't know if the delay in pathological progression will translate to clinical improvements such as ESLD, QAL or mortality.

Didn't look at Vitamin E

Bottom line:

Reasonable to use pioglitazone in diabetics with NASH, maybe all with advanced NASH, but lifestyle changes (esp alcohol avoidance) is still first line (and effective, but difficult). Consider Vitamin E (PIVENS – 2010)

SPECIAL ARTICLES

Clinical Use of a Home Sleep Apnea Test: An American Academy of Sleep Medicine Position Statement

JCSM
Journal of Clinical Sleep Medicine
, Vol. 13, No. 10, 2017

Background:

- OSA affects between 3% - 7 % of adults
- Associated with morbidity – Daytime sleepiness, HTN, cardiovascular disease, stroke, and abnormal glucose metabolism.
- Symptoms/partner report are not sufficient to diagnose.
- Past guidelines have required sleep lab studies
- Insurances are pushing for home sleep testing

Recommendations:

1. Clinical tools, questionnaires and prediction algorithms not be used to diagnose OSA (STRONG)

2. Polysomnography, or home sleep apnea testing with a technically adequate device, be used for the diagnosis of OSA in uncomplicated adult patients presenting with signs and symptoms that indicate an increased risk of moderate to severe OSA. (STRONG)

3. We recommend that if a single home sleep apnea test is negative, inconclusive, or technically inadequate, polysomnography be performed for the diagnosis of OSA. (STRONG)

4. We recommend that polysomnography, rather than home sleep apnea testing, be used for the diagnosis of OSA in patients comorbidities. (STRONG)

Discussion:

- Consistent with recent studies (Spain and Australia 2017) and where the practice has been heading here.

Bottom line:

- Use the lab for patients with comorbidities or inconclusive home studies

ORIGINAL ARTICLE

Thyroid Hormone Therapy for Older Adults with Subclinical Hypothyroidism

The NEW ENGLAND JOURNAL of MEDICINE

N Engl J Med 2017;376:2534-44.

BACKGROUND/OBJECTIVES
The use of levothyroxine to treat subclinical hypothyroidism is controversial. We aimed to determine whether levothyroxine provided clinical benefits in older persons with this condition.

METHODS
- RCT 737 >65yo with subclinical hypothyroidism.
- 368 titrated thyroxine, 369 titrated placebo.
- Primary outcomes: change in the Hypothyroid Symptoms score and Tiredness score at 1 year.

RESULTS
- Mean age was 74.4 years, 53.7% were women.
- Mean (±SD) thyrotropin level was 6.40±2.01 mIU per liter at baseline; at 1 year, this level had decreased to 5.48 mIU per liter in the placebo group, as compared with 3.63 mIU per liter in the levothyroxine group (P<0.001), at a median dose of 50 µg.
- No differences in the mean change at 1 year in the Hypothyroid Symptoms score or the Tiredness Scale.
- No beneficial effects of levothyroxine were seen on secondary-outcome measures.

CONCLUSIONS
Levothyroxine provided no apparent benefits in older persons with subclinical hypothyroidism.

BOTTOM LINE
- Hard to find a benefit of treating “subclinical hypothyroidism”
- Retest
- Wait until they develop true hypothyroidism

Screening for Gynecologic Conditions With Pelvic Examination: A Systematic Review for the U.S. Preventive Services Task Force

U.S. Preventive Services TASK FORCE

- **Objective:** To systematically review literature on health benefits, accuracy, and harms of the screening pelvic examination for gynecologic conditions for the US Preventive Services Task Force (USPSTF).
- **Data Sources:** MEDLINE, PubMed, and Cochrane Central Register of Controlled Trials for relevant English-language studies published through January 13, 2016, with surveillance through August 3, 2016.
- **Study Selection:** Two reviewers independently screened abstracts and studies. The search yielded 8678 unique citations; 316 full-text articles were reviewed, and 9 studies including 27,630 patients met inclusion criteria.
- **Main Outcomes and Measures:** Morbidity; mortality; diagnostic accuracy for any gynecologic cancer or condition except cervical cancer, gonorrhea, and chlamydia, which are covered by other USPSTF screening recommendations; harms (false-positive rates, false-negative rates, surgery rates).
- **Results:** No trials examined the effectiveness of the pelvic examination in reducing all-cause mortality, reducing cancer- and disease-specific morbidity and mortality, or improving quality of life.
- **BOTTOM LINE: No direct evidence was identified for overall benefits and harms of the pelvic examination as a 1-time or periodic screening test. Limited evidence was identified regarding the diagnostic accuracy and harms of routine screening pelvic examinations in asymptomatic primary care populations. How has this changed your practice?**

AMERICAN ACADEMY OF FAMILY PHYSICIANS
STRONG MEDICINE FOR AMERICA

Clinical Preventive Service Recommendation

Screening Pelvic Exam

GRADE: D RECOMMENDATION

The AAFP *recommends against* screening pelvic exams in asymptomatic women. (2017)

U.S. Preventive Services TASK FORCE

Recommendation Summary

Population	Recommendation	Grade (What's This?)
Asymptomatic, nonpregnant adult women who are not at increased risk for any specific gynecologic condition	The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of performing screening pelvic examinations in asymptomatic women for the early detection and treatment of a range of gynecologic conditions. This statement does not apply to specific disorders for which the USPSTF already recommends screening (ie, screening for cervical cancer with a Papanicolaou ["Pap"] smear, screening for gonorrhea and chlamydia). See the Table for more information.	I

ACOG
The American College of Obstetricians and Gynecologists

- The "I" statement from the Task Force should NOT be interpreted to mean that a screening pelvic examination should never be performed. It means that there are not enough data to come to a conclusion about whether or not the benefits of performing the exam outweigh any potential risks in asymptomatic women. This is NOT a recommendation that there is no net benefit or that the harms outweigh the benefits (a "D"-grade).

ACP American College of Physicians®
Leading Internal Medicine, Improving Lives

Recommendation: ACP recommends against performing screening pelvic examination in asymptomatic, nonpregnant, adult women (strong recommendation, moderate-quality evidence).

Effect of Cephalexin Plus Trimethoprim-Sulfamethoxazole vs Cephalexin Alone on Clinical Cure of Uncomplicated Cellulitis: A Randomized Clinical Trial

Gregory J. Moran, MD; Anusha Krishnadasan, PhD; William R. Mower, MD, PhD; et al.

JAMA

- **Objective** To determine whether cephalexin plus trimethoprim-sulfamethoxazole yields a higher clinical cure rate of uncomplicated cellulitis than cephalexin alone.
- **Design, Setting, and Participants** Multicenter, double-blind, randomized superiority trial in 5 US emergency departments among outpatients older than 12 years with cellulitis and no wound, purulent drainage
- **Main Outcomes and Measures** The primary outcome determined a priori in the per-protocol group was clinical cure
- **Results** Among 500 randomized participants,

	per protocol	modified intention-to-tx
cephalexin + TMP/SMX, clinical cure	83.5%	76.2%
cephalexin alone, clinical cure	85.5%	69.0%

- **Conclusions and Relevance** Among patients with uncomplicated cellulitis, the use of cephalexin plus trimethoprim-sulfamethoxazole compared to cephalexin alone did not result in higher rates of clinical resolution of cellulitis in the per-protocol analysis. However, because imprecision around the findings in the modified intention-to-treat analysis included a clinically important difference favoring cephalexin plus trimethoprim-sulfamethoxazole, further research may be needed.

BOTTOM LINE: healthy, nontoxic patient with uncomplicated cellulitis = cephalexin alone is fine