“Wow! I am glad I knew that!”

A review of recent practice-changing clinical guidelines and evidence

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UCI Health

Disclosures:

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ASK QUESTIONS USING OUR NEW SOCIAL Q&A FEATURE!

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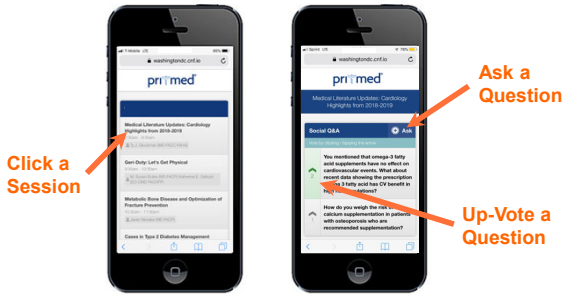

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Objectives

1. Review recent biomedical research as well as clinical guidelines relevant to primary care.
2. Analyze data to determine what is most applicable in primary care.
3. Engage in discussion regarding the relative merits of changes to clinical practice.

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A Case for Consideration

A 79 year-old woman with a h/o T2DM, HTN, HLD, MCI transfers into your practice. Current treatment includes atorvastatin 40 mg. No h/o CVD and no symptoms or adverse events.

What do you do with her statin?

A. Continue at 40 mg
B. Stop it now
C. Recheck a lipid panel and decide on treatment
D. Change to a lower-intensity statin or dose

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Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial (ALLHAT-LLT)

- 2867 adults (mean age 71.3 yrs) w HTN and no CVD
- Randomized to pravastatin 40 mg or pbo over 6 yrs
- Outcomes:
  - Mortality
  - CHD events

Han BH, et al. JAMA Int Med 2017; 177: 955-65.

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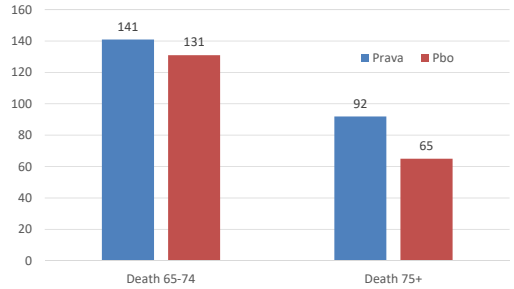
Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial (ALLHAT-LLT)



All differences NS

Han BH, et al. JAMA Int Med 2017; 177: 955-65.

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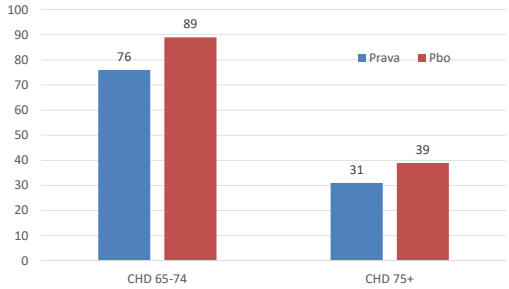
Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial (ALLHAT-LLT)



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Meta-analysis of 28 trials w > 180K adults at 75 years or older

- 21% reduction vascular events for each 18 mg/dL LDL-C reduction. 24% w more intensive statins
- Benefit attenuated only slightly with increasing age
- Less benefit w statins for old vs. young w/o CVD
- 12% reduction vascular mortality for each 18 mg/dL LDL-C reduction
  - NS after exclusion of HD, HF trials

Cholesterol Treatment Trialists' Collaboration. Lancet 2019; 393: 407-15.

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Statin safety statement from AHA

- Risk of serious muscle injury: <0.1%
- Risk of serious hepatotoxicity: 0.001%
- Risk of new DM: 0.02%/year
- Poss risk of hemorrhagic CVA outweighed by benefit against ischemic CVA
- No convincing evidence that statins connected with:
  - Cataracts
  - Cancer
  - Cognitive dysfunction

Newman CB, et al. Arterioscler Thromb 2019; 39: e38-e81.

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Supplements – Popular!!

- ~~52% of US adults used supplement in 2012~~
- ~~MVI most popular; nearly 1/3 adults~~
- USPSTF 2014 recommendation
  - Insufficient evidence overall
  - Beta-carotene & vitamin E – recommend against

Jenkins, DJ, et al. JACC 2018; 71: 2570-84.

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Systematic review of supplements for CVD prevention

- 179 studies with a focus on 15 supplements

Helpful	Harmful	Money for nothin'
• Folate (CVA) • B complex (CVA)	• Niacin (mortality) • Ca? (MI)	• MVI • Vit A, B6, C, D, E • Beta carotene • Zinc • Fe • Mg • Sel

Jenkins, DJ, et al. JACC 2018; 71: 2570-84.

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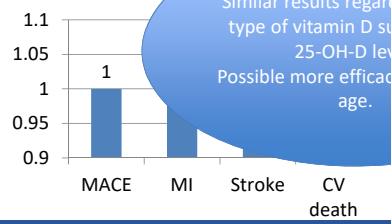
Meta-analysis of vitamin D supplements

- 21 RCTs with 83,291 ad
- Mean age: 65.8 d outcome



Similar results regardless of sex, type of vitamin D supplement, 25-OH-D level.
Possible more efficacy with older age.

Barbarawi M, et al. JAMA Card 2019; Epub.

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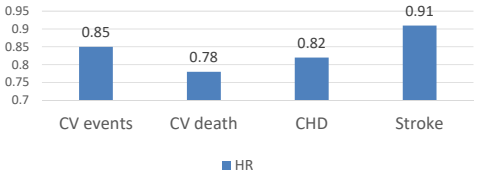
To muddy the waters

- Glucosamine with some anti-inflammatory effect
- 466,039 adults in UK database
- Compared glucosamine use (19.3% of pop.) w non-use w median follow-up 7 yrs
- Results

All significant



Ma H, et al. BMJ 2019; 365: l1628

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Sure, but what about mortality?

- 30,899 adults from NHANES X 6 cycles
- Supplement use associated with lower mortality in 1st analysis
- Adjusting for diet, lifestyle – NS results
- Calcium supplements asst'd w higher cancer death
- Vitamin D asst'd higher death when 25-OH-D nml
- Dietary vitamins and minerals improved risk of death

Chen F, et al. Ann Int Med 2019; ePub.

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Discussion!

Supplements? Good? Bad? Indifferent?

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Preventing dementia - background

- Video games for cognition x 20 hrs vs. controls
- Active tx w better:
  - Processing speed
  - Attention
  - Immediate & delayed memory
- No improvement:
  - Executive control

Ballesteros S, et al. Front Aging Neurosci 2014; 6: 277.

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Cohort study – what prevents dementia?

- 15,582 adults at least 65 yo in Hong Kong
- All free of cognitive impairment (CI).
- Assessed activities:
  - Intellectual
  - Social
  - Recreational
- Multiple tests for CI; median follow up 5 yrs
- Results adjusted for demographics, dz, health habits

Lee AT, et al. JAMA Psych 2018; 75: 697-703.

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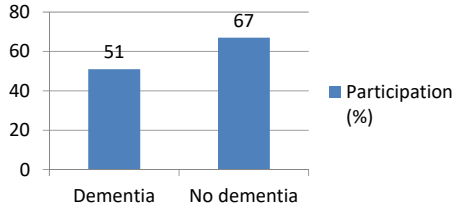
Cohort study – what prevents dementia?

- Mean age 74 years; most female
- Incidence of dementia: 8.7%



Lee AT, et al. JAMA Psych 2018; 75: 697-703.

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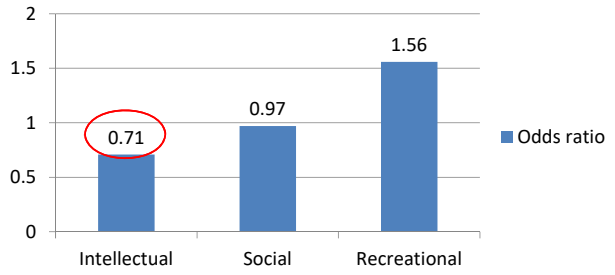
Comparison of 3 activities in preventing dementia



Lee AT, et al. JAMA Psych 2018; 75: 697-703.

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Polling Question

Low-carbohydrate diets among
my patients are:

A. Very popular
B. Somewhat popular
C. Not popular
D. Less popular than whatever diet is being advertised at 2 AM on the local TV station

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Meta-analysis of 19 RCTs through 2014

3 to 6 months:

Low CHO: - 2.6 to - 10.2 kg

Balanced: - 2.6 to – 9.4 kg

1 to 2 years:

Low CHO: - 2.9 to – 12.3 kg

Balanced: - 3.5 to – 10.9 kg

Also little difference in BP, lipids, FBG

Results similar for adults with DM

Naude CE, et al. PLoS One 2014; 9: e100652.

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CHO & Death

- Atherosclerosis in Communities (ARIC) study, which enrolled US adults between 45 and 64 years of age between 1987 and 1989
- 2 FFQ – 18 years apart
- Main outcome: CHO and mortality risk
- Adjusted for demographic, health habit, disease variables
- 15,428 participants; 6283 deaths over median of 25 years

Seidelmann SB, et al. Lancet Public Health 2018; 3: e419-28

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CHO & Death

See fig 1 in
https://www.thelancet.com/journals/lanpub/article/PIIS2468-2667(18)30135-X/fulltext

Seidelmann SB, et al. Lancet Public Health 2018; 3: e419-28

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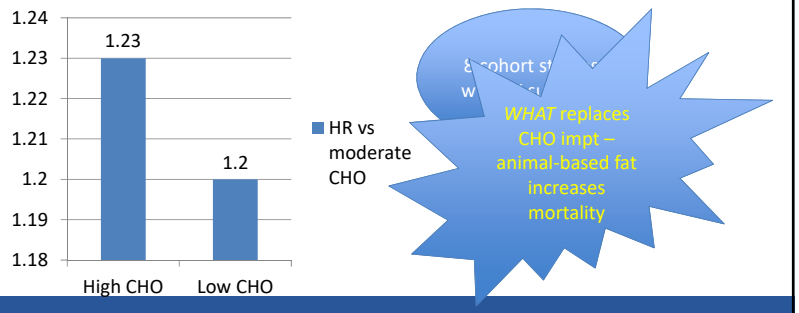
CHO & Death – meta-analysis



Seidelmann SB, et al. Lancet Public Health 2018; 3: e419-28

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Does alternate day fasting work?

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RCT in adults

3 groups X 1 year

- Alternate day fast: 25% of calorie needs on fast days; 125% on feast days
- Calorie restriction: 75% of calorie needs all days
- No-intervention (control)

Outcomes

- Body weight
- Adherence
- CV risk factors

Trepanowski JF, et al. JAMA Intern Med 2017; 177: 930-8.

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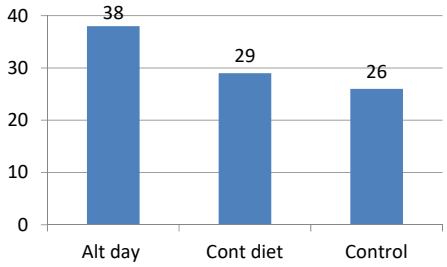
Study dropout rates (%)



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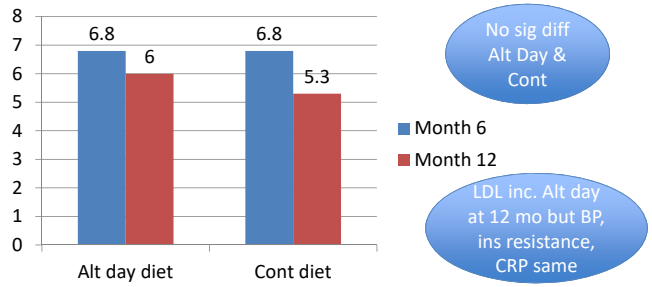
Weight loss (% vs control group)



Trepanowski JF, et al. JAMA Intern Med 2017; 177: 930-8.

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What About Alternate Day Fast in DM?

- Australian adults with T2DM and BMI > 27
- Fast group – 2 days / wk w 500 – 600 kcal/day
- Continuous group – 1200 to 1500 kcal/day (2 diets isocaloric)
- Main outcome: A1c at 12 months
- Secondary outcomes: body weight, % fat mass, lipids
- Analysis for non-inferiority

Carter S, et al. JAMA Network Open 2018; 1: e180756

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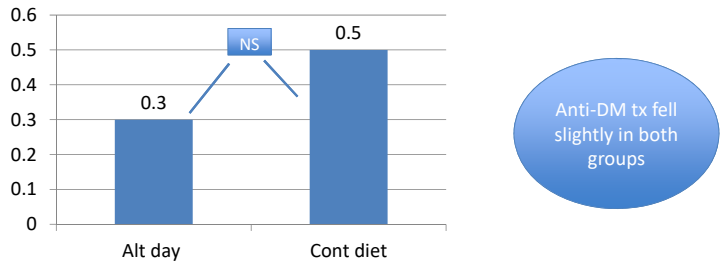
HbA1c reduction at 1 year



Carter S, et al. JAMA Network Open; 1: e180756

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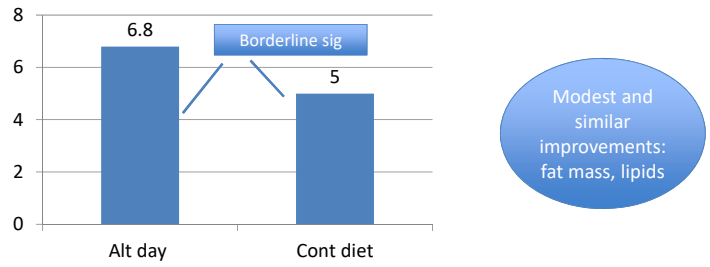
Weight reduction at 1 year (kg)



Carter S, et al. JAMA Network Open; 1: e180756

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Discussion!

Diets and Weight Loss: What Works?

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The Weekend Effect

- 97 studies with > 51 million patients
- Main outcome of meta-analysis: does weekend admission affect mortality?
- Relative risk: 1.19 (95% CI, 1.14 to 1.23)
- Analyses demonstrate not tied to
  - Staffing levels
  - Procedure rates & delays
  - Illness severity

Pauls LA, et al. J Hosp Med 2017; 12: 760-6.

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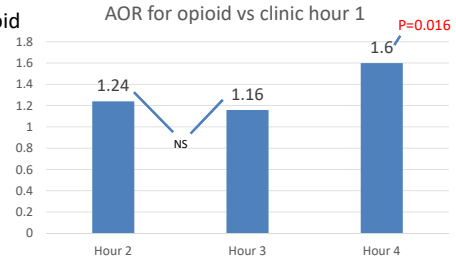
It's not just inpatient care…

- Patients w LBP in Mayo outpt clinics in 2015
- 2772 visits; 19.8% recv'd opioid



Philpot M, et al. J Gen Int Med 2018; 11: 1828-30.

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Hypothesis: Clinic appt time affects health maintenance advice & execution

- 33 primary care practices w 19,254 visits from 2014 – 16
- Primary outcome: orders for:
  - Breast cancer screening
  - Colorectal cancer (CRC) screening
- Secondary outcome
  - Completion of screening within one year
- Variable: clinic appointment time

Hsiang EY, et al. JAMA Netw Open 2019; 2: e193403.

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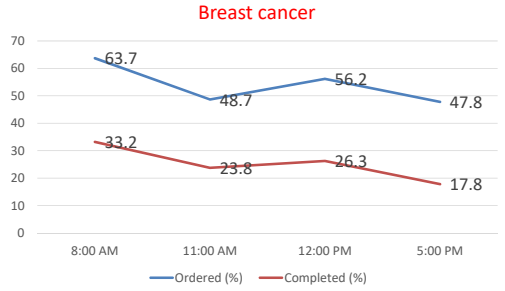
Hypothesis: Clinic appt time affects health maintenance advice & execution



Hsiang EY, et al. JAMA Onc 2019; 2: e193403.

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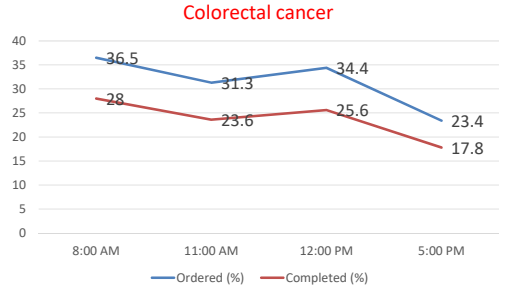

Hsiang EY, et al. JAMA Netw Open 2019; 2: e193403.

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Discussion!

How do we create more equitable care even when healthcare resources are strained?

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Final Thoughts & Questions

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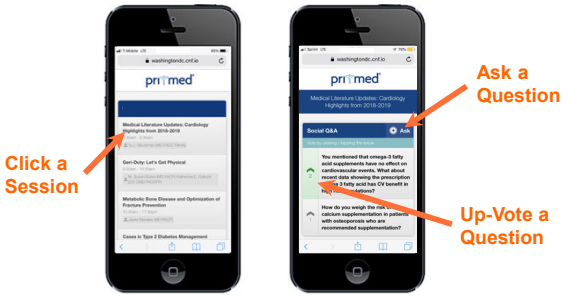

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