

2017 Update in Geriatrics- How should new research change our practice?

Elizabeth Eckstrom, MD, MPH
Oregon Health & Science University



Maine Geriatrics
Conference

June 7, 2017

I have no conflicts
of interest

Photos thanks to
Google images

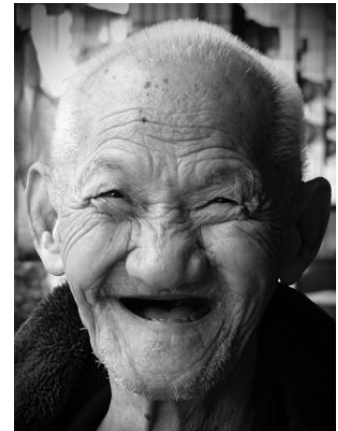
How does this update work?

- I get an email from Ovid weekly with abstracts of new articles from most relevant journals
- I review potential articles of interest for strength of their research design and applicability to primary care teams
- I focus on articles that should change our practice
- I check in with colleagues nationally to ensure I have made good choices

This year's top picks

- Should we be using lower BP targets in patients over 75 who are frail?
- Should we treat UTIs in patients with advanced dementia?
- Tai chi or PT for knee OA?
- Medication management for fragility fracture?
- Should we do cognitive stimulation for dementia patients with superimposed delirium?

Dr. Hartwell is an 86 YO retired chemist who exercises daily, spends time with grandkids, and wants to live long enough to see them graduate from college. His BP is 146/90, and he has heard of the new SPRINT study that says it should be lower. He takes HCTZ and Lisinopril. What should you do?



What should you do for Dr. Hartwell?

A: tell him he is fine, stay on his current regimen
B: Add amlodipine 10 mg and continue visits every 6 months

C: Measure BP as done in SPRINT and set up a nurse care manager visit to see if he can comply with an intensive monitoring plan

D: Assess frailty status and only intensify therapy if Dr. Hartwell has a low frailty score



The SPRINT Trial: Intensive vs Standard BP Control and CVD Outcomes in Adults Aged ≥ 75

Williamson, et al,
JAMA.
2016;315(24):2673-2682

Funding source: NIH,
VA; drugs provided by
pharma

What is the question?

- In patients over age 75, and with varying levels of frailty, does a target of 120 vs 140 SBP improve cardiovascular outcomes without increasing adverse events?

What they did

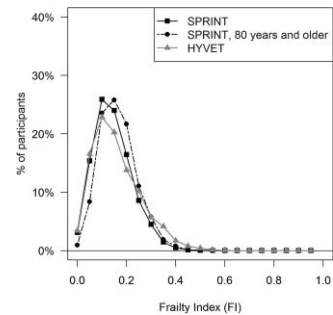
- 9361 subjects randomized to SBP<120 vs SBP<140
- Frailty measures:
 - 4 meter walk test (gait aid OK)
 - 36-item frailty scale classified subjects as fit, less fit, or frail (28% fit this category) based on:
 - Montreal Cognitive Assessment
 - self-ratings of health from the Veterans RAND 12-Item Health Survey (VR-12)
 - self-ratings of depressive symptoms from the nine item-Patient Health Questionnaire (PHQ-9)
 - laboratory measurements, BP measurements, and self-reported comorbidities.
- 3756 subjects over 75 assessed, 2636 randomized

Important Caveat: Exclusion Criteria

- Dementia
- Expected survival < 3 years
- Recent weight loss
- SBP < 110 after standing one minute
- Diabetes
- Stroke
- Symptomatic HF in last 6 mo or EF <35%
- Nursing home resident

SO- if you have any patients who would still qualify, let's see the results!

Distribution of frailty index (FI) in SPRINT participants at randomization.

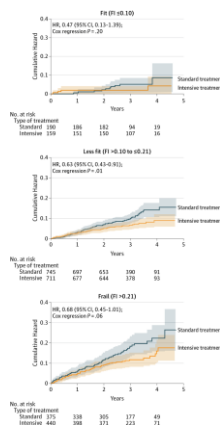


Nicholas M. Pajewski et al. J Gerontol A Biol Sci Med Sci 2016;71:549-555

© The Author 2016. Published by Oxford University Press on behalf of The Gerontological Society of America. All rights reserved. For permissions, please e-mail: journals.permissions@oup.com.

the journals of
gerontology
Series A

CV outcomes
by fit, less fit,
or frail status



Clinical Bottom Line

- In this analysis of “fit to frail” SPRINT subjects, most subjects were still “fit” or “less fit” - so it is hard to extrapolate to truly frail patients
- Frail patients had higher rates of falls, injurious falls and hospitalization
- We STILL don't have the cognitive data! You may want to wait till those are out before extrapolating SPRINT to those over 75 who are frail, have diabetes, or are nursing home residents

What should you do for Dr. Hartwell?

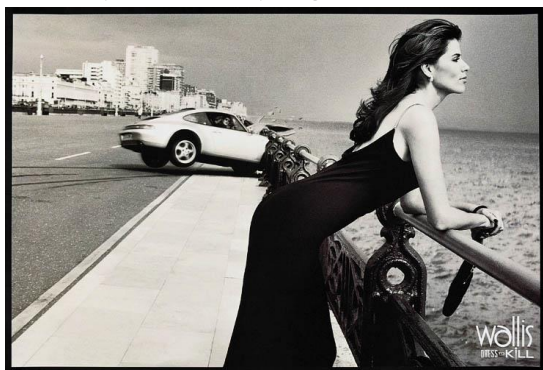
- A: tell him he is fine, stay on his current regimen
- B: Add amlodipine 10 mg and continue visits every 6 months
- C: Measure BP as done in SPRINT and set up a nurse care manager visit to see if he can comply with an intensive monitoring plan
- D: Assess frailty status and only intensify therapy if Dr. Hartwell has a low frailty score



Dr. Hartwell fits the "fit" category, and might benefit from a SBP target of 120. He will likely need careful monitoring for side effects and counseling on home BP assessment (use your pharmacist and nurse care manager!) to help him meet his longevity goal



Why do men die younger than women?



Mr. Drew

89 YO with advanced dementia

Lives in a memory facility. Has had multiple urinary tract infections treated with antibiotics after staff noted his urine looked "cloudy."

You are the weekend on-call provider and receive a call that Mr. Drew has another positive urine culture, with pansensitive e. coli, though he has no symptoms.

What should you do?



Mr. Drew

What should you do?

- A: Begin treatment with oral TMP/Sulfa
- B: Begin treatment with IM ceftriazone
- C: Call his daughter
- D: Order another urine culture to be sure this wasn't a contaminant



Survival After Suspected UTI in Individuals with Advanced Dementia



Dufour, et al,
JAGS. 63:2472-2477

Funding source: NIA

What is the question?

We know that a lot of nursing home patients get antibiotics for suspected UTIs

We know antibiotics cause harm in nursing home patients

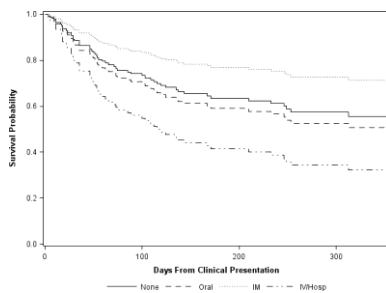
- Clostridium difficile
- Diarrhea or gastroenteritis
- Antibiotics resistant organisms
- Allergic reactions to antibiotics

Do antibiotics cause good in patients with advanced dementia and suspected UTI?

What they did

- Prospective trial in 35 nursing homes in Boston area, followed residents who had experienced at least 1 suspected UTI in last 12 months
- 110 residents, avg age 86, 84% female, all very demented (33% died in next year)
- 196 UTIs, 25% did not receive antibiotics
- Used Cox proportional hazards modeling to examine the association between treatment of at least 1 suspected UTI and death

Survival After Suspected Urinary Tract Infection in Individuals with Advanced Dementia



Journal of the American Geriatrics Society

Clinical Bottom Line

- For patients with end-stage dementia, treatment of UTIs did not lead to a survival benefit
- Those who got the most aggressive treatment (IV/hospitalization) had the shortest survival
- Only 16% had UTI-attributable symptoms, and in most cases it was hard to tell if there was any benefit from treatment.
- Best to provide good palliative care- and avoid antibiotics whenever possible

Mr. Drew

What should you do?

- A: Begin treatment with oral TMP/Sulfa
- B: Begin treatment with IM ceftriaxone
- C: Call his daughter
- D: Order another urine culture to be sure this wasn't a contaminant



Mr. Drew

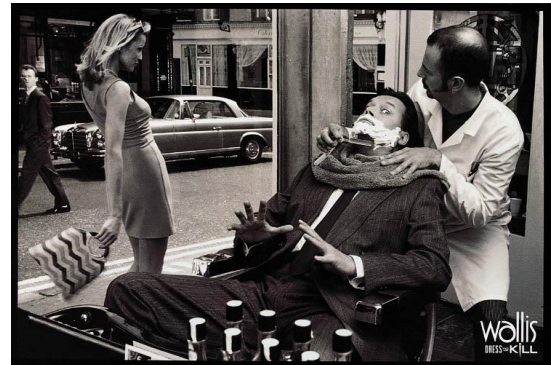
89 YO with advanced dementia

If you recommend withholding antibiotics, what are the considerations?

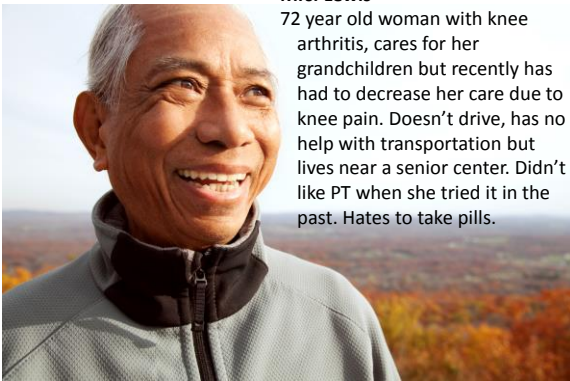


*Mr. Drew***What are your considerations?**

- What do you tell his family?
- How should the team monitor him?
- What training might you need to do to ensure team acceptance?

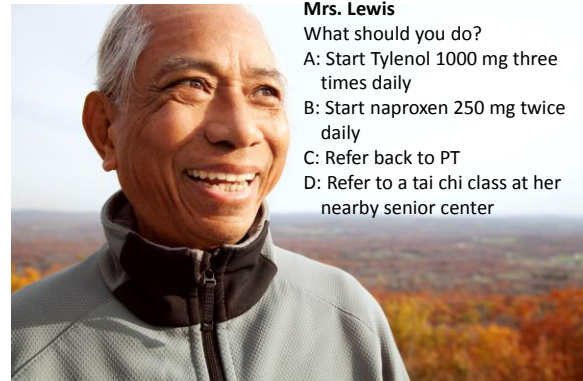
**Why do men die younger than women?****Mrs. Lewis**

72 year old woman with knee arthritis, cares for her grandchildren but recently has had to decrease her care due to knee pain. Doesn't drive, has no help with transportation but lives near a senior center. Didn't like PT when she tried it in the past. Hates to take pills.

**Mrs. Lewis**

What should you do?

- A: Start Tylenol 1000 mg three times daily
- B: Start naproxen 250 mg twice daily
- C: Refer back to PT
- D: Refer to a tai chi class at her nearby senior center



Comparative Effectiveness of Tai Chi Vs Physical Therapy for Knee OA: An RCT



Wang et al, Ann Intern Med. 2016;165:77-86

Funding source: National Center for Complementary and Integrative Health of the NIH

What is the question?

- Acetaminophen and NSAIDs are often inadequate for pain in knee OA and can cause side effects.
- PT has pain benefits but no evidence for improvement in well-being
- Tai chi has shown benefits for managing other types of pain- could it help with knee OA too?

What they did

- 1 year RCT
 - Tai chi twice weekly for 12 weeks
 - PT twice weekly for 6 weeks plus 6 weeks monitored home exercise
- 204 participants, avg age 60, 70% women, avg BMI 33, avg time of knee OA 8 years
- Outcomes: Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC), physical function, medication use, quality of life

Annals of Internal Medicine

Established in 1975 by the American College of Physicians

From: Comparative Effectiveness of Tai Chi Versus Physical Therapy for Knee Osteoarthritis: A Randomized Trial

Ann Intern Med. 2016;165(2):77-86. doi:10.7326/M15-2143

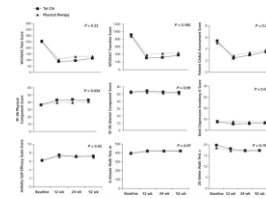


Figure Legend:

Mean change in outcomes by treatment group. Measurements were obtained at baseline and at 12, 24, and 52 wk, but data points are often slightly for clarity. SF-36 = 36 Item Short-Form Health Survey; WOMAC = Western Ontario and McMaster Universities Osteoarthritis Index.

Date of download: 9/9/2016

Copyright © American College of Physicians. All rights reserved.

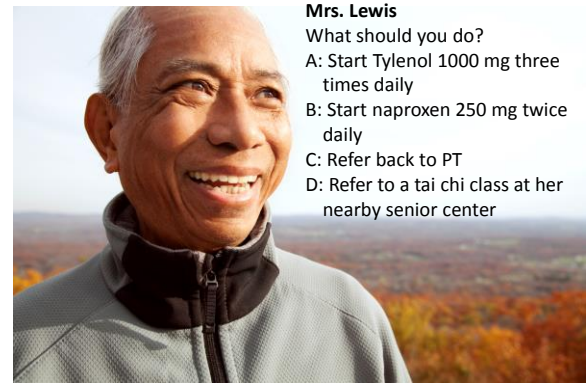
Clinical Bottom Line

- Both groups had substantial improvement in multiple measures at 12 weeks, many of which were sustained for a full year
- Tai chi already known to cut risk of falls in half, reduce pain in fibromyalgia, reduce BP, reduce cholesterol, reduce shortness of breath in CHF, improve sleep- and it is a lot cheaper than physical therapy!

Mrs. Lewis

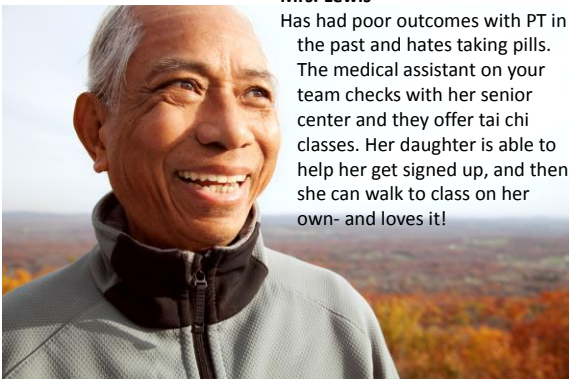
What should you do?

- A: Start Tylenol 1000 mg three times daily
- B: Start naproxen 250 mg twice daily
- C: Refer back to PT
- D: Refer to a tai chi class at her nearby senior center



Mrs. Lewis

Has had poor outcomes with PT in the past and hates taking pills. The medical assistant on your team checks with her senior center and they offer tai chi classes. Her daughter is able to help her get signed up, and then she can walk to class on her own- and loves it!



Why do men die younger than women?





Ms. Perez

84 years old, admitted to the hospital with a hip fracture

Medications include HCTZ, zolpidem, and occasional hydrocodone for knee arthritis

She receives great surgical care, and is sent home on the same medications after 4 days in the hospital



Ms. Perez

What is the next best step?

A: Check a vitamin D level and refer her to a pharmacist

B: Stop all her current medications

C: Start alendronate

D: Refer to tai chi

Patterns of Prescription Drug Use Before and After Fragility Fracture

Munson, et al, JAMA Int Med 2016, 176 (10): 1531-38

Funding: none noted



What is the question?



- We know treatment of osteoporosis is recommended after fragility fracture (risk of a second fracture is high!)
- How often do persons with fragility fracture get started on osteoporosis treatment?
- How often do they have other risky medications stopped?

What they did

- Cohort of Medicare beneficiaries who fractured a hip, shoulder or wrist 2007-2011, community-dwelling
- Identified 21 drugs that increase fracture risk
 - Increase risk of falls (e.g., benzos, sedative-hypnotics, thiazide diuretics)
 - Decrease bone density (e.g., proton pump inhibitors, anticonvulsants)
- Captured data on initiation of drugs that increase bone density (primarily bisphosphonates)

Results

- 168,133 patients included, mean age 80, 84% women
- 76% on fracture-promoting drugs prior to fragility fracture. No change after fracture
- ~20% of patients were on protective drugs before fragility fracture. No change after fracture

Clinical Bottom Line

- Most patients with a fragility fracture are users of at least one drug that increases fracture risk
- Fracture does not “trigger” the team to discontinue risky medications
- Fracture does not trigger initiation of fracture preventing drugs (bisphosphonates)
- We have a lot of room for improvement in this area- and need to partner with pharmacists, nurses, and other team members to reduce risky medications (such as sleeping pills, pain medications) and initiate fracture preventing drugs



Ms. Perez

What is the next best step?

- A: Check a vitamin D level and refer her to a pharmacist
- B: Stop all her current medications
- C: Start alendronate
- D: Refer to tai chi



Ms. Perez

All of her current medications (HCTZ, zolpidem, and occasional hydrocodone for knee arthritis) increase risk for fracture. Use your team to help find non-pharmacologic strategies (tai chi?) for her insomnia and arthritis, reduce or change HCTZ

In addition, she has not had vitamin D status assessed and is a candidate for a bisphosphonate



Mr. Hashimoto is 90 and has mild dementia, but lives independently with his wife of 70 years. Recently, he was admitted with pneumonia and delirium. Now he is in your post-acute care facility because he had significant functional decline during his hospitalization. He still has active paranoia, and his MOCA has declined from a baseline of 16 to just 11. What should you do to help him get back home to his wife as quickly as possible?



What should you do to help him get back home to his wife as quickly as possible?

- A: Start quetiapine 12.5 mg every evening
- B: Start mental health counseling
- C: Start cognitive activities that align with prior hobbies
- D: Start Start Haldol 1 mg twice daily



Effect of Cognitively Stimulating Activities on Symptom Management of Delirium Superimposed on Dementia- An RCT

Kolanowski, et al,
JAGS 2016,
64:2424-2432

Funding source:
National Institute
of Nursing
Research



What is the question?

- In persons with dementia, a bout of delirium can be devastating- worsening cognition for months, limiting ability to participate in rehab, and increasing costs and rates of institutionalization
- Can non-pharmacological interventions for delirium in post-acute care (PAC) settings improve clinical outcomes for this group?

What they did

- 283 patients with delirium superimposed on mild to moderate dementia admitted to PAC (all were community-dwelling prior to hospital admission) randomized to:
 - Cognitive stimulation
 - Active engagement in attention, memory, orientation, and executive function activities (individualized based on past interests and leisure time activities)
 - 30 minutes/day, 5 days/week for 30 days or till DC (avg 13 sessions)
 - Usual care (control)

What were these cognitive activities? For example...

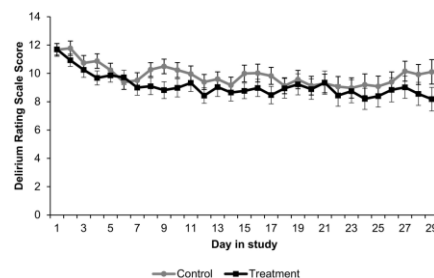
"If the participant was a former high school chemistry teacher who enjoyed woodworking and movies, he would be prescribed the following activities: name 3 gasses and 3 metals from the periodic table, copy a block design, identify famous faces"



What they did

- Delirium measured via Confusion Assessment Method (CAM) daily, Delirium Rating Scale (DRS) daily
- Cognition measured via Digit Span Forward (attention), memory and orientation items from Montreal Cognitive Assessment (MOCA) and clock draw test (executive function)
- Also measured activities of daily living (ADLs), length of stay and discharge disposition at 3 months

Effect of Cognitively Stimulating Activities on Symptom Management of Delirium Superimposed on Dementia: A Randomized Controlled Trial



Journal of the American Geriatrics Society
Volume 64, Issue 12, pages 2424-2432, 12 NOV 2016 DOI: 10.1111/jgs.14511
<http://onlinelibrary.wiley.com/doi/10.1111/jgs.14511/full#jgs14511-fig-0002>

Results

	Intervention	Usual Care	Adjusted P value
Executive Function (CLOX 1)	6.58	5.89	.009
Length of Stay (PAC)	36.1	53.1	.01
Mortality	15.4%	12.5%	NS
Return to community-dwelling	32.6%	27.5%	NS

What should you do to help him get back home to his wife as quickly as possible?

- A: Start quetiapine 12.5 mg every evening
- B: Start mental health counseling
- C: Start cognitive activities that align with prior hobbies
- D: Start Start Haldol 1 mg twice daily



Clinical Bottom Line

- Daily 30 minute individualized cognitive stimulation did not decrease delirium duration or severity
- HOWEVER- intervention subjects spent a shorter time in PAC than control subjects, had small improvements in executive function, and had a lower rate of institutionalization
- Study did no formal cost analysis, but 30 minutes/day of RN (or similar) time has to be cheaper than 17 extra days in PAC
- Include individualized cognitive stimulation in post-acute care for dementia patients with superimposed delirium

Mr. Hashimoto has delirium superimposed on dementia. He is at risk for permanent cognitive decline and institutionalization. Working with your team, you implement cognitive and physical therapy (sudoku, singing, tai chi, etc) and after a 3 week stay, he is at his baseline functional status (MOCA back to 16) and is able to return home- where his wife continues tai chi with him



Some additional pearls

- In patients with mild cognitive impairment, center plus home-based tai chi training for 15 weeks (3 times weekly for 50 minutes) improved tests of cognition and reduced fall risk
— Sungkarat, et al, JAGS, 2017;65:721-7
- In patients with ED visits for falls, Tai chi reduced falls over the next 12 months more than lower extremity training
— Hwang, et al, JAGS, 64:518-25

Some additional pearls

- A systematic review identified that patients with chronic kidney disease (CKD) stage 3-5 received little benefit in terms of bone mineral density improvements or fracture risk from medications for osteoporosis. Harms in this population are largely unknown. This should give us pause when treating osteoporosis in patients with CKD
— Wilson, et al, Annals of Internal Medicine. Doi: 10.7326/M16-2752

Some additional pearls

- A narrative review of frailty and nutrition found that following the Mediterranean diet and ingesting adequate protein reduces the risk of developing frailty
— Yannakoulia, et al, Metabolism;2017;68:64-76
- A comparative risk assessment model of NHANES participants found that high sodium intake, low nut/seed intake, high processed meat intake, low omega-3 intake (salmon), low vegetables, low fruits, and high sugar-sweetened beverages contributed substantially to death from MI, stroke, and Type 2 diabetes. We need to find more effective techniques to improve diet at a population level
— Micha, et al, JAMA;317(9):912-24. doi:10.1001/jaa.2017.0947

Some additional pearls

- In patients with hip fracture, only 31% returned to pre-fracture ADL function and 34% to pre-fracture mobility (mortality 37%). We may be over-promising when we discuss what to expect after hip fracture repair
— Tang, et al, JGIM, 32(2):153-8
- Higher occupational cognitive requirement scores corresponded to significantly better late-life cognitive performance and to slower decline in global cognitive function over time.
— Pool, et al, Neurology, 2016;86:1386-92

What should I change this year?

- Consider a lower BP target for the right patient over 75
- Question use of antibiotics for UTI in advance dementia
- Tai chi for knee OA
- Medication review for fracture prevention
- Cognitive stimulation for delirium superimposed on dementia



Questions?

Elizabeth Eckstrom, MD, MPH
eckstrom@ohsu.edu