

AGING WELL

ELDERLY WELLNESS AND PREVENTION

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Geriatric Update
October 2016



DISCLOSURES

- I have not accepted money from any company in this century
- No major investments in pharmaceutical companies
- I have not followed all the advice I am about to give you today (but I should!)



OBJECTIVES

- Learn about some of the pitfalls in understanding preventive medicine
- Know which preventive measures in the elderly have proven value
- Know which preventive measures are of unclear value
- Know which preventive measures are proven to have no benefit



SOME COMMON PITFALLS

- Correlation = Causation
- Lead time bias
- Disease specific mortality vs. all cause mortality

For the elderly:

- Lag time to benefit
- Altered risk benefit ratio



WHAT DO WE MEAN BY PREVENTION

We will use the following (technically not accurate) framework:

1. Prevention means modifying risk factors or providing interventions so that the problem never occurs

2. Screening and finding the disease at an early stage so that treatment that modifies the disease course is feasible



MODIFYING RISK FACTORS

- If you do not smoke, chances of lung cancer and chronic lung disease dramatically reduced
- If you avoid excess alcohol, traffic accidents and cirrhosis dramatically decreased

Effect of timing:

Midlife obesity, midlife hypertension, midlife cholesterol levels impact negatively on late life cognition, but the same abnormalities in late life do not have the same impact



VACCINATION = TRUE PREVENTION

Recommendations for those >65:*

1. Influenza vaccine yearly (all ages)
2. Tetanus, diphtheria, pertussis booster every 10 years (all ages)
3. Zoster (recommended for >60)
4. Pneumococcal vaccine (>65)
5. Hepatitis A & B, meningococcal, H. influenza under special circumstances

*Centers for Disease Control, Feb 3, 2015, Annals of Internal Medicine



LITTLE ELSE IS TRUE PREVENTION EXCEPT....

- Nutrition
 - Mediterranean diet
 - Multiple others
- Exercise
 - Almost any type
 - McArthur study on successful aging
 - The earlier the better, but it is never too late
 - The more the better, but anything helps



QUESTIONS TO ASK ABOUT SCREENING*

- How good is the screening test?
- Does early diagnosis result in improved survival or quality of life (or both)?
- Are the early diagnosed patients willing partners in the treatment strategy?
- Is the time and energy required to confirm the diagnosis and provide (lifelong care) worth the effort?
- Do the frequency and severity of the target disorder warrant the degree of effort and expenditure?

*Evidence-Based Medicine, Sackett, Straus, et al



IN ADDITION FOR THE ELDERLY GERIATRIC SYNDROME vs TYPICAL ISSUE

Geriatric Syndrome

- Falls
- Confusion (especially dementia)

Typical Issue

- Hypertension
- Nutritional supplements
- Vision, hearing
- Prostate cancer
- Colon cancer
- Breast cancer



SCREENING FOR FALLS

The single best predictor of falls is:

1. Slow gait on a timed up and go test
2. Visual impairment
3. Proximal leg muscle weakness
4. History of falls
5. Long acting sedative use



Risk factors for falls (Adjusted RR/OR)*

- **History of Falls** 1.9-6.6
- **Muscle weakness** 2.2-2.6
- **Balance abnormality** 1.2-2.4
- **Gait abnormality** 1.2-2.2
- **Visual Impairment** 1.5-2.3
- **Polypharmacy** 1.1-2.4

Depression, orthostasis, cognitive impairment, diabetes

*Tinetti JAMA 2010



QUESTIONS TO ASK ABOUT SCREENING FOR FALLS

- How good is the screening test? **Good, but..., hx or gait/balance**
- Does early diagnosis result in improved survival or quality of life (or both)? **Yes**
- Are the early diagnosed patients willing partners in the treatment strategy? **Yes**
- Is the time and energy required to confirm the diagnosis and provide (lifelong care) worth the effort? **Yes**
- Do the frequency and severity of the target disorder warrant the degree of effort and expenditure? **Yes**

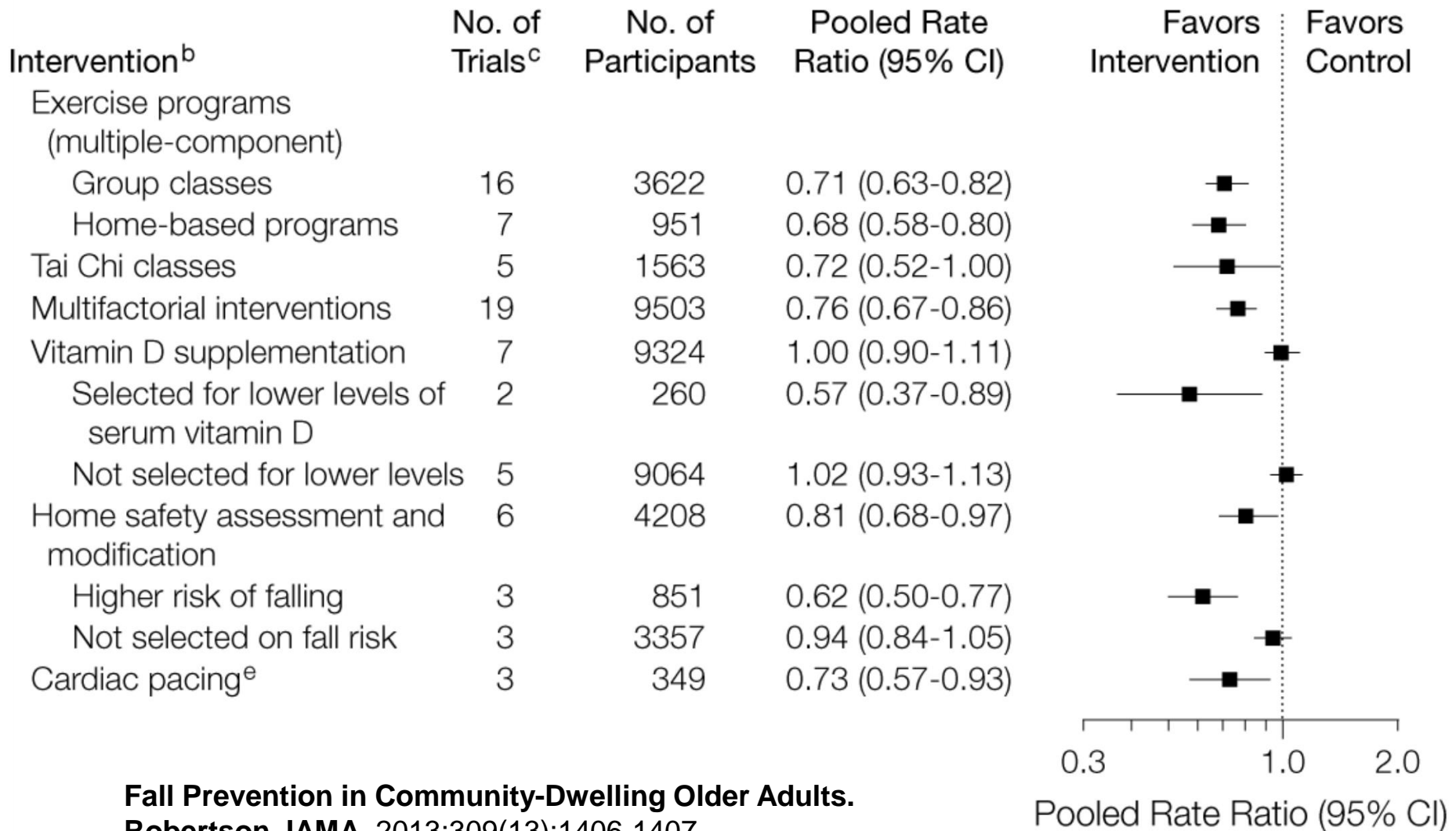
*Evidence-Based Medicine, Sackett, Straus, et al



Evidence-based Interventions

	Rate of Falls	Risk of Falls
Exercise (includes strength and balance training)	RaR=0.71 (0.63-0.82) 16 trials, n=3622	RR=0.85 (0.76-0.96) 22 trials, n=5333
Multifactorial intervention	RaR=0.76 (0.67-0.86) 19 trials, n=9503	
Home safety	RaR=0.81 (0.68-0.97) 6 trials, n=4208	RR=0.88 (0.8-0.96) 7 trials, n=4051





Fall Prevention in Community-Dwelling Older Adults.
Robertson JAMA 2013;309(13):1406-1407



WHAT IS FEASIBLE

- Current population of Ontario is ~ 13,000,000
- 13% are over age 65 and at significant risk for falls
- No way for multimodal interventions
- The only possible solution is via public health interventions:
 - Greater participation in exercise (preferably from a young age)
 - Promoting bone health in younger populations
 - ?vitamin D for all older adults



SCREENING FOR DEMENTIA

Screening for dementia should be done in which one of the following groups:

1. Everybody over 65
2. Everybody over 75
3. Everybody over 85
4. Only in women as men are so impaired at baseline that screening is not useful
5. Don't screen



DEMENTIA: PREVENTION AND SCREENING*

Risk Factors:

- ↑ Age
- CVS risk factors (diabetes, tobacco, ↑cholesterol, ↑BP)
- Head trauma
- Learning disabilities (Down syndrome)
- Depression
- Physical frailty
- Low education level
- Low social support
- Never having married

* US Preventive Services Task Force, June 3, 2014, Annals of Internal Medicine



ANSWERS TO QUESTIONS TO ASK ABOUT SCREENING FOR DEMENTIA*

1. How good is the screening test? **Good Enough**
2. Does early diagnosis result in improved survival or quality of life (or both)? **Not known**
3. Are the early diagnosed patients willing partners in the treatment strategy? **Unknown, almost certainly yes**
4. Is the time and energy required to confirm the diagnosis and provide (lifelong care) worth the effort? **Unknown effect on outcome, balance of risks and benefits not known**
5. Do the frequency and severity of the target disorder warrant the degree of effort and expenditure? **Irrelevant because of number 4**

*US Preventive Services Task Force, June 3, 2014, Annals of Internal Medicine



US Preventive Services Task Force Recommendation

The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for cognitive impairment.

Reminder: absence of proof is not proof of absence



NUTRITIONAL SUPPLEMENTS AND VITAMINS

Three articles in the *Annals of Internal Medicine* in 2013

1. For adults with no nutritional deficiencies, trials with over 450,000 participants—no benefit
2. For dementia prevention—no benefit
3. For secondary prevention post MI—no benefit
4. Editorial cited numerous other studies—none ever showed benefit

Systematic review in the *BMJ* in 2013 suggested that only Vitamin D (and perhaps calcium) are of benefit

Previous studies in poorly eating LTC residents show a decrease in infections with a multivitamin

Despite this, sales of vitamins and supplements are soaring



PROSTATE CANCER

- It is common, but most men die with prostate cancer, not of prostate cancer
- Screening results in dangerous or unpleasant testing in many men who would never suffer any symptoms
- Screening with PSA results in a small decrease in prostate cancer mortality, but no reduction in all cause mortality
- Recommendations from Can Task Force (Nov 4, 2014 CMAJ)
 - Aged < 55, no screening (strong recommendation)
 - Aged 55-69, no screening (weak recommendation—discuss with patient)
 - Aged >70, no screening (strong recommendation)
 - Recent article: surgery = radiation= watchful waiting for 10 year survival



BREAST CANCER

- This is the most difficult cancer for non experts to understand
- Recommendations from International Agency for Research on Cancer*
 - Self examination—inadequate evidence
 - Clinical breast exam—no evidence mortality ↓
 - Screening mammography reduces breast cancer mortality in women aged 50-74 (no data for older women)

*NEJM June 11, 2015



LAG TIME AND CANCER SCREENING

Looking at screening patterns for cervical, prostate, breast, colorectal cancer (over 27,000 participants). They were divided into 4 groups re risk of 9 year mortality*

- many people with limited life expectancies were screened (prostate the worst offender)
- 1/3 to 1/2 of women with prior hysterectomy for benign reasons had Pap smears!

*JAMA Internal Med published on-line August 18, 2014



SCREENING FOR TYPE 2 DIABETES

Seems like an obvious thing but:

- Two trials of screening (>24,000 participants) showed no effect on 10 year mortality (no difference in CVS, cancer, or DM2 related mortality)
- 16 trials of treatment for asymptomatic ↑ in FBS or IGT—no benefit in all cause or CVS mortality for hypoglycemic or BP meds
- 1 trial suggested benefit of life style modification

* Annals of Internal Med, June 2, 2015



SCREENING FOR VITAMIN D DEFICIENCY

- Remember in the falls slide, only those with low Vitamin D benefitted
- USPSTF says not enough evidence for general screening in adults (18 or older)*
- Data has huge limitations
- Institutionalized elderly might have ↓ mortality and ↓ falls if Vitamin D deficiency corrected, ? Everybody take vitamin D

*Annals of Int Med, January 20, 2015



SCREENING FOR FRAILTY

- Seems like an obvious strategy
- Canadian Journal on Aging 35(3): 281-297 (2016)
- Dr. Sinha one of the authors
- We will need data on its impact in primary care
- Data will be essential for adapting our health systems



SUMMARY

- Do not smoke
 - Do not drink to excess
 - Eat healthy, do not get overweight
 - Exercise regularly
 - Get vaccinated
 - Buy chocolate, not vitamins and minerals
 - Decide how long you intend to live before having invasive cancer testing (strong evidence for breast and colon cancer)
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POST CONFERENCE BEHAVIOUR

What will you be doing after today's sessions are completed?

1. Exercising vigorously
 2. Planning a healthy meal based on the principles of the Mediterranean diet
 3. Avidly re-reading the notes from today's lectures to hone your knowledge and abilities in Geriatrics
 4. Flopping on the sofa with a cold one (& maybe a pizza) while watching TV
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QUESTIONS

