Preventative Health Care in the Geriatric Patient

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DISCLOSURE

Dr. Virdi has nothing to disclose relevant to this presentation

LEARNING OBJECTIVES

Learning Objectives:

1. Identify which geriatric patients will benefit from cancer screening
2. Discuss how a patient's functional status, health status and personal preferences play a role in preventative health care
3. Balance the risks of routine health screening against the potential benefits in the context of predicated life

Cancer Screening: General

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When to start screening is clearly defined

When to stop screening is unknown

Professional society guidelines often conflict

- Different age cut-offs

Professional society guidelines are often vague

- Deflect responsibility to the primary physician

Over screening

Screening at ages younger or older than the range recommended

Screening at a greater frequency than recommended

Screening asymptomatic persons when there is no evidence that the screening will improve patient outcomes

Harms of Over screening

False-positives
Anxiety
Unwarranted medical procedures
Clinical insignificant findings
Costs

Over screening for Cancer is Common

Behavioral Risk Factor Surveillance system (2018)

175,000 women and men, average age 75

Most participants reported having screened for one or more cancer types they had had ‘aged out” of the recommended range

- 59% men colorectal cancer
- 75% women breast cancer, 56% for colorectal cancer, 46% for cervical cancer

Women over-screened in metropolitan areas

Over screening for Cancer is Common

Overuse of Screening Colonoscopy in the Medicare population

24,000 Medicare enrollees, between 2001 and 2003

Underwent screening colonoscopy
- 1 in 4 underwent second screening colonoscopy within 7 years of first, without any clear indication

More likely to have in patients with:
- More comorbidities
- Saw high-volume colonoscopist
- Procedure in outpatient setting

Why does over screening happen?

Patient request and expectations

Malpractice concerns

Influence of quality metrics

Limited time for discussion

Cancer Screening: Framework for Decision Making

An individualized approach considers differences in disease risk rather than the chronological age of the patient

Estimating life expectancy

Time to benefit

Determining potential benefits and harms of screening

Patients values and preferences

Estimating Life Expectancy

Life Tables

Health Status

Comorbidities and Functional Impairments

Disease Specific

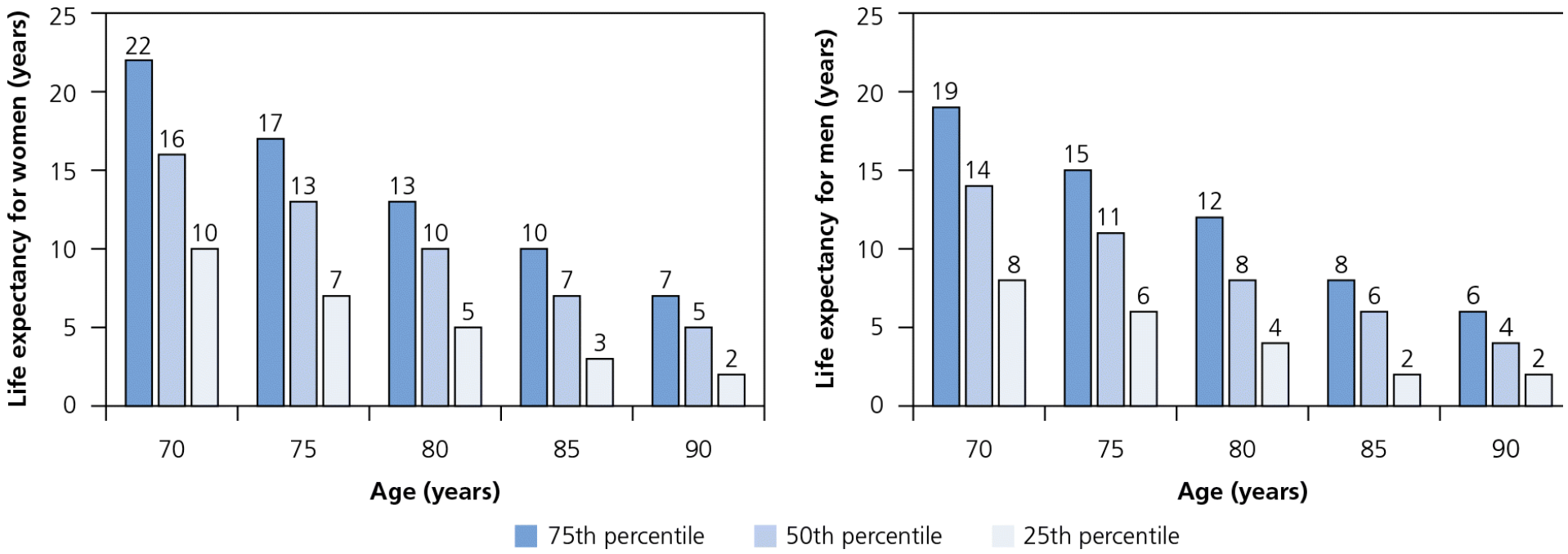
Life Table, 2020

Age (years)	Female (years)	Male (years)
Birth	79.9	74.2
65	19.8	17.0
75	12.4	10.6
85	6.5	5.5
90	4.4	3.7
95	2.9	2.5
100	2.0	1.8

Life Expectancy: Health Status

To account for patients who may be healthier or less healthy than average, life tables can provide the life expectancy of the healthiest quartile and least healthy quartile

Upper, middle and lower quartiles of life expectancy for older women and men



Life Expectancy: Comorbidities and Functional Impairments

Cho Study (Ann Intern Med 2013)

- No comorbidities: add 3 years to life expectancy
- High co-morbidities (CHF, COPD, DM): substrate 3 years
- Functional status & severity of co-morbidity not taken into account

Keeler (Journal of Gerontology 2010)

- Mobility limitations reduce life expectancy
- ADL limitations reduce life expectancy
- The life expectancy of an ADL disabled 75 year-old is similar to that of an 85 year-old independent person

Life Expectancy: Disease Specific

Alzheimer's Disease
- 4.2 years (men)
- 5.7 years (women)
- 8-10 years after early diagnosis

Hip Fracture (age 80)
- 5.4 years

Heart Failure (>75)
- 3.9-5.8 years (men)
- 4.5-7 years (women)

Time To Benefit (TTB)

Time between the preventative intervention to the time when improved health outcomes are seen

LE>>TTB: potential benefit

LE<<TTB: no benefit

Time To Benefit

Meta-analysis, Lee et al, BMJ 2013: to determine a pooled, quantitative estimate of the length of time needed after breast or colorectal cancer screening before a survival benefit is observed

Breast cancer

- 10.7 years before 1 death from breast cancer prevented for 1000 women screened

Colorectal cancer

- 10.3 years before 1 death from colorectal cancer was prevented for 1000 patients screened

Time to benefit (years)	Preventative Intervention	Guideline
8 mos-19 mos	Bisphosphonate for Osteoporosis	none
1-2	Primary prevention, HTN	none
2-5	Primary prevention with statins	none
5	Surgical (vs Transcather) Aortic valve replacement for high risk AS	none
6-8	Open (vs Endovascular) repair for abdominal aortic aneurysm	None
10	Aspirin for cardiovascular disease and colorectal cancer prevention	USPSTF
10	Intensive glycemic control in DM	American Geriatric Society
10	Colorectal Cancer Screening	USPSTF, American College pf Physicians, Society of General Internal Medicine
10	Breast Cancer Screening	Society of General Internal Medicine, American College of Physicians
10-15	Prostate Cancer Screening	American Urological Association, American College of Physicians

Personal Choice

Patient's opinion matters

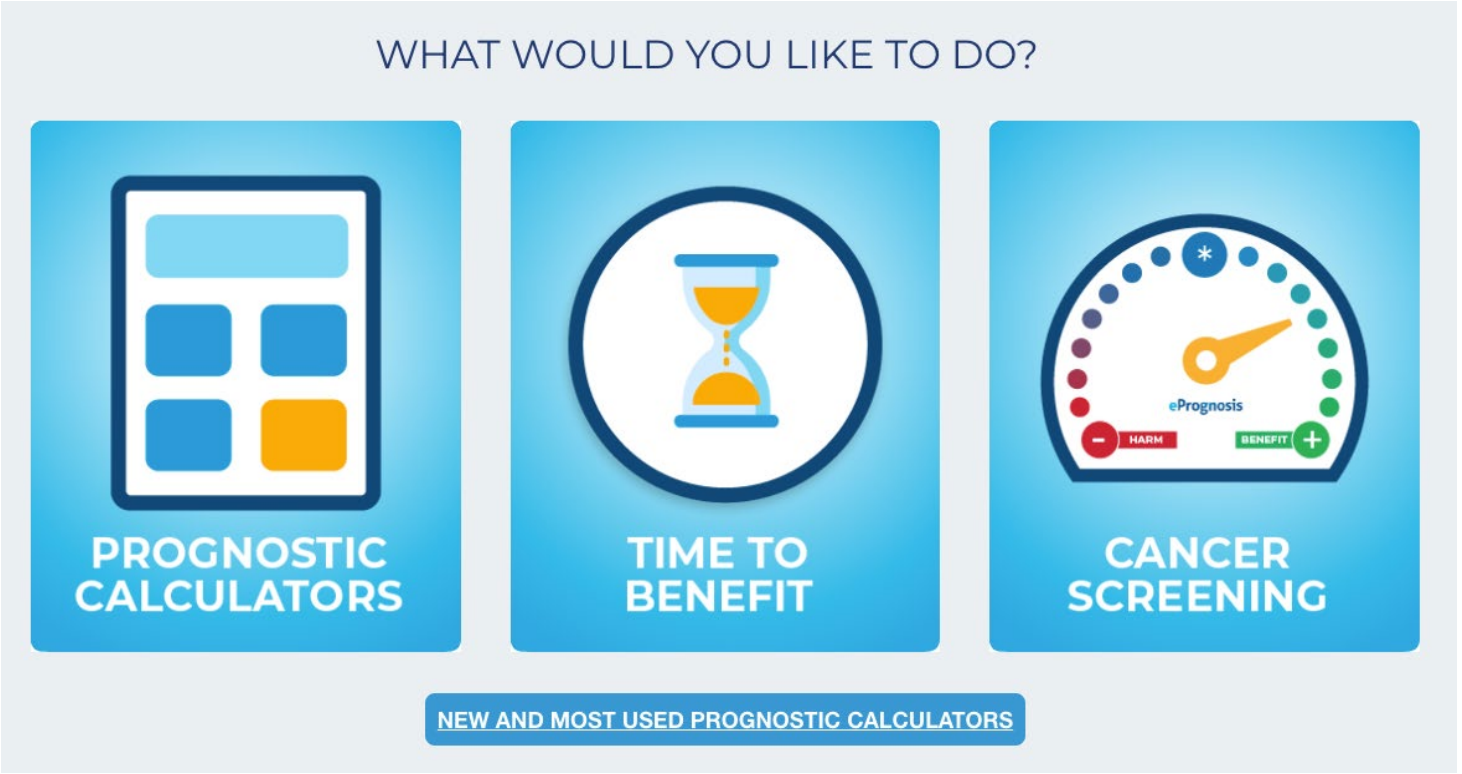
Shared decision making

Establish goals of care

Prognostic Tools

Can guide clinical judgement in estimating life expectancy

- ePrognosis



Choosing Wisely®

An initiative of the ABIM Foundation

American Geriatrics Society

AGS Geriatrics Healthcare Professionals

Leading Change. Improving Care for Older Adults.

Ten Things Clinicians and Patients Should Question

7 Don't recommend screening for breast, colorectal, prostate or lung cancer without considering life expectancy and the risks of testing, overdiagnosis and overtreatment.

Cancer screening is associated with short-term risks, including complications from testing, overdiagnosis and treatment of tumors that would not have led to symptoms. For prostate cancer, 1,055 older men would need to be screened and 37 would need to be treated to avoid one death in 11 years. For breast and colorectal cancer, 1,000 older adults would need to be screened to prevent one death in 10 years. For lung cancer, much of the evidence for benefit from low dose CT screening for smokers is from healthier, younger patients under age 65. Further, although screening 1,000 persons would avoid four lung cancer deaths in six years, 273 persons would have an abnormal result requiring 36 to get an invasive procedure with eight persons suffering complications.

Cancer screening: Specific disease

Breast Cancer Screening

Mammogram

ACS
- 40-44 years: option to start yearly
- 45-54 years: yearly
- >55 years: may opt for biennial
- **Screening should continue as long as overall health is good and life expectancy is at least 10 years**

USPSTF/AAFP (2016)
- 40-49 years: individualized
- 50-75 years: biennial
- **>75: insufficient evidence to screen**
- Draft recommendations: 40-74 years – biennial

ACOG
- 40-49 years: individualized
- 50-75 years: annual or biennial
- **>75 years: weigh benefits and risks, consider comorbidity and life expectancy**

AGS
- **Life expectancy of <10 years should not be screened**

Harms of Mammogram

Overdiagnosis

False positives

Anxiety, pain and complications from subsequent testing and treatment

Colorectal Cancer Screening

USPSTF/ACS (2021)

- 45-49 years: screen (grade B)
- 50-75 years: screen (grade A)
- 76-86 years: selectively offer screening, considering the patient's overall health, prior screening history and patients preferences (grade C)
- >85 years: against screening

Colorectal Cancer Screening

High-sensitivity guaiac fecal occult blood test (HSgFOBT) or fecal immunochemical test (FIT) every year

Stool DNA-FIT every 1 to 3 years

Computed tomography colonography every 5 years

Flexible sigmoidoscopy every 5 years

Flexible sigmoidoscopy every 10 years + annual FIT

Colonoscopy screening every 10 years

Stool-Based Tests

High sensitivity guaiac fecal occult blood test (gFOBT)

- Based on chemical detection of blood

Fecal immunochemical test (FIT)

- Uses antibodies to detect blood

Multitarget stool DNA-FIT (sDNA-FIT) (Cologaurd)

- Detects hemoglobin, DNA mutations and methylations

sDNA-FIT

Frequency of screening: 1-3 years

- 13% false positive (rate of false positive increase with age)
- FIT vs sDNA-FIT
  - sDNA-FIT: higher sensitivity (92% vs. 74%), lower specificity (87% vs. 95%)

Colon Cancer Screening

No Prior Screening: van Hees et al. 2014

No comorbid conditions
- Cost effective up to age 86
- Colonoscopy at 83, sigmoidoscopy at 84, FIT at 85 and 86

Moderate comorbid conditions
- Cost effective up to age 83
- Colonoscopy at 80, sigmoidoscopy at 81, FIT at 82 and 83

Severe comorbid conditions
- Cost effective up to age 80
- Colonoscopy at 77, sigmoidoscopy at 78, FIT at 79 and 80

Harms of Colonoscopy

Perforation
Bleeding
Sedation/Anesthesia
Anxiety
Bowel Preparation
Over-diagnosis

Cervical Cancer Screening

USPSTF (2018)

- 21-65 years: screen (grade A)

- >65 years: against screening who have had adequate prior screening and are not otherwise at high risk for cervical cancer (grade D)

Cervical Cancer Screening: Women Older than 65 Years

Adequate prior screening:

- 3 consecutive negative cytology results or 2 consecutive negative co-testing results within 10 years before stopping screening, with the most recent test occurring within 5 years

Routine screening should continue for at least 20 years after spontaneous regression or appropriate management of precancerous lesion, even if this extends screening past age 65

Cervical Cancer Screening: Women Older than 65 years Who Have Not Been Adequately Screened

Screening may be clinically indicated in older women with an inadequate or unknown screening history

¼ of women aged 45-64 have not been screening for cervical cancer in the preceding 3 years

In particular, women with limited access to care, women from racial/ethnic minority groups, and women from countries where screening is not available may be less likely to meet criteria for adequate prior screening

Prostate Cancer Screening

USPSTF (2018)
Age 55-69 years: individualized (grade C)

- Discuss potential benefits and harms, incorporate values and preferences

Age >70 years: against PSA based screening (grade D)

ACS

- Age 50 for men who are at average risk of prostate cancer and are expected to live at least 10 more years

Prostate Cancer Screening

US study: men 55 to 74 years

- No reduction in mortality after 13 years

European study: men 50 to 74 years

- Small reduction in mortality after 11 years
  - Number needed to screen: 1055 in men 55 to 69
  - No mortality benefit >70 years
  - After 13 years, of 1000 men screened
    - 100 will be diagnosed
    - 3 will avoid metastatic disease
    - 1.3 will avoid dying of prostate cancer

Harms of Prostate Cancer Screening

- Frequent false-positive results and psychological harms
  - Screened every 2-4 years over 10 years: more than 15% men had at least 1 false-positive tests
- Complications of prostate biopsy
  - Pain, hematospermia, infection
- Screening leads to diagnosis of prostate cancer whose cancer would never become symptomatic during their lifetime
  - Overdiagnosis: 20-50%
- Complications of treatment
  - ED (2 in 3), urinary incontinence (1 in 5) and bothersome bowel symptoms

Lung Cancer Screening

USPSTF (2021) - grade B

- Ages 50-80 years
- Annual screening with low dose CT
- 20 pack year smoking history
  - Current smoker
  - Quit within 15 years
- Stop screening
  - Once > 15 years smoking cessation
  - Develops health problem that limits life expectancy or willingness to have curative lung surgery

Lung Cancer Screening

USPSTF reviewed seven RCTs

- NLST and NELSON trials - only ones adequately powered
  - Relative risk reduction mortality: 16-20%
  - Number needed to screen over 10 years: 161

Harms of Lung Cancer Screening

False positives
Incidental findings
Unnecessary tests and invasive procedures
Anxiety
Over diagnosis
Radiation exposure

Nonmalignant nodules will be found in up to 40%
Lead to invasive procedures in 3%
1/3 who undergo biopsy have benign disease

Other Screening

Abdominal Aortic Aneurysm

Hepatitis C

Osteoporosis

Vaccines

- Influenza
- Zoster Vaccine (Shingrex)
- Pneumococcal
- Tdap
- COVID
- RSV
- Hepatitis B
  - Shared clinical decision-making for persons age 60 or older with DM

Influenza: Lots of Options. Which vaccine to give?

For persons aged ≥65 years:

- Higher dose or adjuvanted influenza vaccines: quadrivalent high-dose inactivated influenza vaccine (HD-IIV4), quadrivalent recombinant influenza vaccine (RIV4), or quadrivalent adjuvanted inactivated influenza vaccine (aIIV4)
    - If none of these are available at an opportunity for vaccine administration, then any other age-appropriate influenza vaccine should be used

Pneumococcal Vaccine Timing for Adults

Make sure your patients are up to date with pneumococcal vaccination.

Adults ≥65 years old

Complete pneumococcal vaccine schedules

Prior vaccines	Option A	Option B
None*	**PCV20**	**PCV15** → ≥1 year† → **PPSV23**
PPSV23 only at any age	≥1 year → **PCV20**	≥1 year → **PCV15**
PCV13 only at any age	≥1 year → **PCV20**	≥1 year† → **PPSV23**
PCV13 at any age & **PPSV23** at <65 yrs	≥5 years → **PCV20**	≥5 years§ → **PPSV23**

* Also applies to people who received PCV7 at any age and no other pneumococcal vaccines
† Consider minimum interval (8 weeks) for adults with an immunocompromising condition, cochlear implant, or cerebrospinal fluid leak (CSF) leak
§ For adults with an immunocompromising condition, cochlear implant, or CSF leak, the minimum interval for PPSV23 is ≥8 weeks since last PCV13 dose and ≥5 years since last PPSV23 dose; for others, the minimum interval for PPSV23 is ≥1 year since last PCV13 dose and ≥5 years since last PPSV23 dose

Shared clinical decision-making for those who already completed the series with PCV13 and PPSV23

Prior vaccines	Shared clinical decision-making option
Complete series: PCV13 at any age & **PPSV23** at ≥65 yrs	≥5 years → **PCV20** Together, with the patient, vaccine providers **may choose** to administer PCV20 to adults ≥65 years old who have already received PCV13 (but not PCV15 or PCV20) at any age and PPSV23 at or after the age of 65 years old.

Zoster Vaccine (Shingrex)

Zoster Vaccine, 2 doses:

- 50 to 69 years old: 97% effective in preventing shingles, 91% effective in preventing PHN
- 70 years and older: 91% effective in preventing shingles, 89% effective in preventing PHN protection remained high (more than 85%) in people 70 years and older throughout the 4 years following vaccination

Give if prior history of zostavax and shingles

COVID Vaccine

Bivalent mRNA COVID-19 vaccines are no longer recommended in the United States

Recommendations for use of the 2023–2024 formulations of Moderna COVID-19 Vaccine and Pfizer-BioNTech COVID-19 Vaccine:

- Everyone ages 5 years and older is recommended to receive 1 dose of updated (2023–2024 Formula) mRNA COVID-19 vaccine

RSV Vaccine

On June 21, 2023, ACIP recommended that adults aged ≥60 years may receive a single dose of RSV vaccine, using shared clinical decision-making

Cardiovascular Primary Prevention

Aspirin for Primary Prevention (USPSTF)

USPSTF (2022):
40-59 years with >10% or greater 10-year CVD risk: individualize (grade C)

Age>60: against low dose ASA for primary prevention of CVD (grade D)

Landmark Trials

ASCEND: In patients with DM found a 12% reduction in the risk of a major CVD event and a 30% increase in the risk of a major bleeding event. The absolute risk reduction was 1.1% for a CVD event (NNT=91) and the absolute risk increase was 0.9% for a major bleeding event (NNH=112)

ARRIVE: In patients at moderate risk of CVD, there was no significant CVD benefit with aspirin use but gastrointestinal bleeding increased

ASPREE: In a healthy elderly population > 65-70 years, there was no significant CVD benefit, but there was a 30% increase in the risk of a major bleeding event.

Cardiovascular Primary Prevention: Statins

ACC/AHA 2019 Guidelines

10-year ASCVD risk in age 40-75
- Low: <5%
- Borderline: 5- <7.5%
- Intermediate: 7.5- <20%
- High: >20%

Age >75 years: clinical assessment and risk discussion

Time to benefit: 2-5 years

Cardiovascular Primary Prevention: Statins

USPSTF (2022)

40-75 years + 1 or more CV risk factors + >10% ASCVD: statin (grade B)

40-75 years + 1 or more CV risk factors + 7.5-10% ASCVD: selectively offer statin (grade C)

>76 years: insufficient evident (grade I)

Statin Trials in the Elderly

Retrospective study 2018 by Ramos, et al. 2020

- Retrospective study
- Patients without known ASCVD and statin use; with or without DM
- 46,864 patients 75 years or older

Results:
Without DM: no difference in onset of CVD or rate of mortality
85 years or older: no reduction in likelihood of CVD or all cause mortality
With DM between 75 and 84 years: likelihood of CVD was reduced, all cause mortality decreased

Statin Trials in the Elderly

Orkaby et al, 2020

- Patients without known ASCVD and statin use
- Mean age 81, 94% white, 97.3% men

New statin use significantly associated with lower all cause and cardiovascular mortality

Secondary outcome showed significantly lower ASCVD events (MI, TIA, CVA, revascularization)

Statin Concerns in the Elderly

- Musculoskeletal disorders, including myopathy, myalgias, muscle weakness, back conditions, injuries, and arthropathies. These disorders may be particularly problematic in older people and may contribute to physical deconditioning and frailty
- Reversible cognitive impairment (short term): rare
  - No association found in developing dementia
- ?Diabetes risk
- Drug-Drug interactions

Summary

Preventive health care decisions and recommendations become more complex as the population ages

Age alone should not be the sole determinant for many interventions

Geriatric preventative care should focus on how behaviors, functional status, comorbidities, and life expectancy can predict who will benefit most from screening

Questions?

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