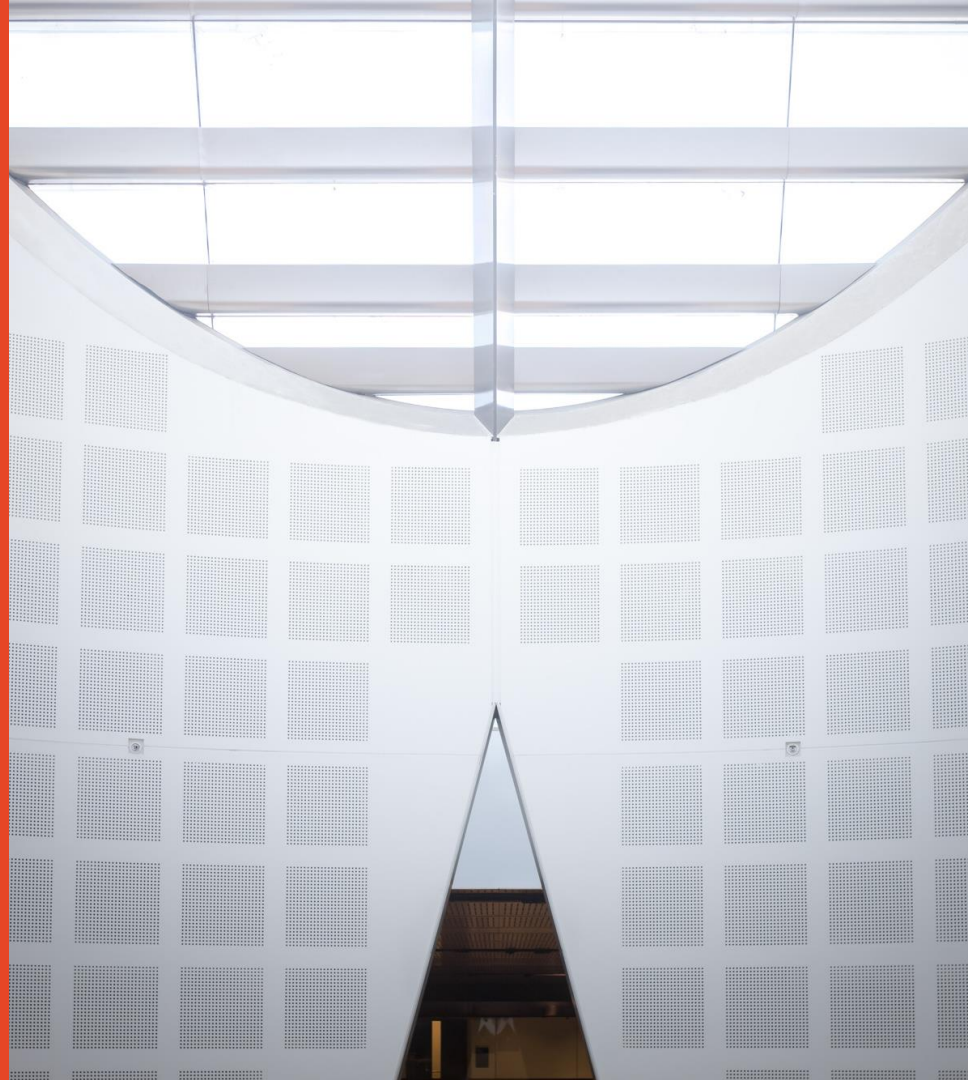# Older Men and Falls

Presented by

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THE UNIVERSITY OF
SYDNEY

John Gray, Ph.D.

With a New Introduction by the Author

#1 *New York Times* Bestseller

MEN Are from MARS, WOMEN Are from VENUS

First time ever in paperback!

The Classic Guide to Understanding the Opposite Sex

Talk Outline

— CHAMP study

— Risk Factors

— Falls Trials

— Fear of Falling

— Willingness to engage in Falls Prevention Strategies

— Falls as part of the bigger picture

Are you a man over the age of 70?

Join our world leading study of men's health

CHAMP
CONCORD HEALTH AND AGEING
— IN MEN PROJECT —

If you are a man aged 70 or older who lives in the Burwood, Canada Bay or Strathfield areas, Concord Hospital doctors invite you to join CHAMP.

To find out more, call Melisa Litchfield on 1800 174 287.

CHAMP is funded by the National Health & Medical Research Council to improve health of older men.

Bob Cumming Lead Investigator

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CHAMP Study Population

- Males aged 70 years and over
- Resident in Burwood, Canada Bay or Strathfield LGAs
- Live in community (not residential care)
- Sampled from electoral roll and media coverage
- Baseline measures repeated
  - Two years
  - Five years
  - Eight years
- 4 monthly phone calls to ascertain falls, fractures, hospital admissions, nursing home/hostel admission
- Informant interviews by phone - dementia

SOCIO-DEMOGRAPHIC AND ECONOMIC FACTORS

- Age
- Income
- Living status (Lives Alone)
- Country of birth

HEALTH RISK FACTORS

- Cigarette smoking status
- Physical Activity(PASE)
- Body mass Index
- Alcohol consumption

Medications

- Polypharmacy (≥5 medications)

HEALTH CONDITIONS

- Self- rated general health
- Income
- Doctor diagnosed conditions (>4 conditions)
- Hypertension
- Systolic and Diastolic BP
- Diabetic (self reported and blood glucose)
- FEV1
- Estimated glomerular filtration rate
- Myocardial infarction
- Angina
- Congestive heart failure
- Stroke
- Cancer
- Depressive symptoms
- Cognitive status

PHYSICAL FUNCTION AND PERFORMANCE

- Frailty
- ADL and IADL disability
- Dynamic balance
- Grip strength
- Chair stands
- Walking speed
- History of falls

BLOOD MEASURES

- Cholesterol
- HDL Cholesterol
- White cell count
- Haemoglobin
- Alanine transaminase
- Albumin
- PSA
- Reproductive hormones
- Cytokines, Branch chain amino acids

Dementia/MCI Diagnosis

- detailed clinical assessment if MMSE <=26 and/or IQCODE >3.6
- Comprehensive standardised clinical and neurological evaluation (1-2 hours) by geriatrician
- Consensus meeting 2 Geriatricians, 1 Neurologist and 1 Neuropsychologist
- Each case was reviewed
        - Cognitively intact
        - MCI
        - Dementia and subtypes

- diagnosis of dementia - DSM-IV criteria

- MCI -clinical criteria as per Petersen et al 2001

Progress to Date

- Invitation sent to 3627 contact made with 3005, 190 not eligible, 2815 eligible and made contact – 1511 participated (54%) + 194 independent of letter invite

- CHAMP 1 - Baseline n = 1,705

- CHAMP 2 - Two Yrs   n = 1,366

- CHAMP 3 - Five Yrs n =   954

- CHAMP 4 – Eight Yrs n = 742

Age Distribution

Age Group	CHAMP	Study Area
70-74	39%	42%
75-79	31%	31%
80-84	19%	15%
85-89	8%	8%
90+	3%	4%

Country of Birth

COUNTRY	CHAMP	Study Area
Australia	50%	39%
Italy	19%	18%
UK	4%	4%
Greece	4%	5%
China	3%	5%

Prevalence and Incidence of Falls

- prevalence half of females
- women at 1.3 - 2 X risk
- increase in falls injury hospitalisations rates both men and women
- Women
  - greater fracture rate
  - higher falls injury hospitalisation rate
  - majority of hospitalised falls injuries (69% vs 31%)
  - lower intracranial injuries

CHAMP Falls Prevalence

		PERCENTAGE
Fall in past 12 months	1+	19%
	2+	9%
Self-rated health	Excellent	16%
	Good	54%
	Fair	25%
	Poor	3%
	Very poor	1%

Risk Factors for Falls

- Women 1.4
- History of falls 2.8
- Physical Disability 2.3
- Walking aid 2.5
- Cognitive Impairment 2.2
- Fear of Falling   1.6
- Parkinson Disease   3.9
- Sedatives   1.7

Deandrea S et al. Risk factors for falls in community-dwelling older people: a systematic review and meta-analysis. Epidemiology. 2010;21(5):658-68.

Sex differences in Risks Factor for Falls

- ? Psychotropic medication association is not as strong in males
- Physical measures inconsistent

CHAMP Men Risk Factor for Falls at 2 years

- History of falls in past 12 months IRR = 3.2/ OR 5.9 (2 or more falls)
- Age > 80
- English Speaking Country of Birth
- Low social satisfaction
- > 3 comorbidities
- Poor visual acuity
- Dementia and Polypharmacy (IRR only – rate of falls)

CHAMP Italian Born Men less likely to Fall

- 329 Italian-born men and 842 Australian-born
- ↓ reported falls in last 12 months (12% vs 23%)
- ↓ ever fractured bone (28% vs 51%)
- Half the rate of self-reported falls in 3.5 years follow up (adjusting for other factors)

CHAMP Men Risk Factors Falls Injury Hospitalisations   -10 years

- 17% men at least one hospitalisation due to Falls Injury
- Dementia
- Born English Speaking Country
- Grip strength
- Slow walking Speed
- Polypharmacy (> 4 mediations)
- Age > 80
- History of Falls

Risk factors for hip fracture in CHAMP men

Factor	Age and Falls adjusted HR
Age (5 year)	2.0
Height loss since aged 25 (5 cm)	2.1
BMD Total Hip/Femoral Neck (1 SD)	2.1
Dementia	4.1
Unable to 2 narrow walk trials	3.8
Unable to balance on foam	2.4

Vitamin D and Fracture U- Shaped Relationship

Bleicher K et al, 2014
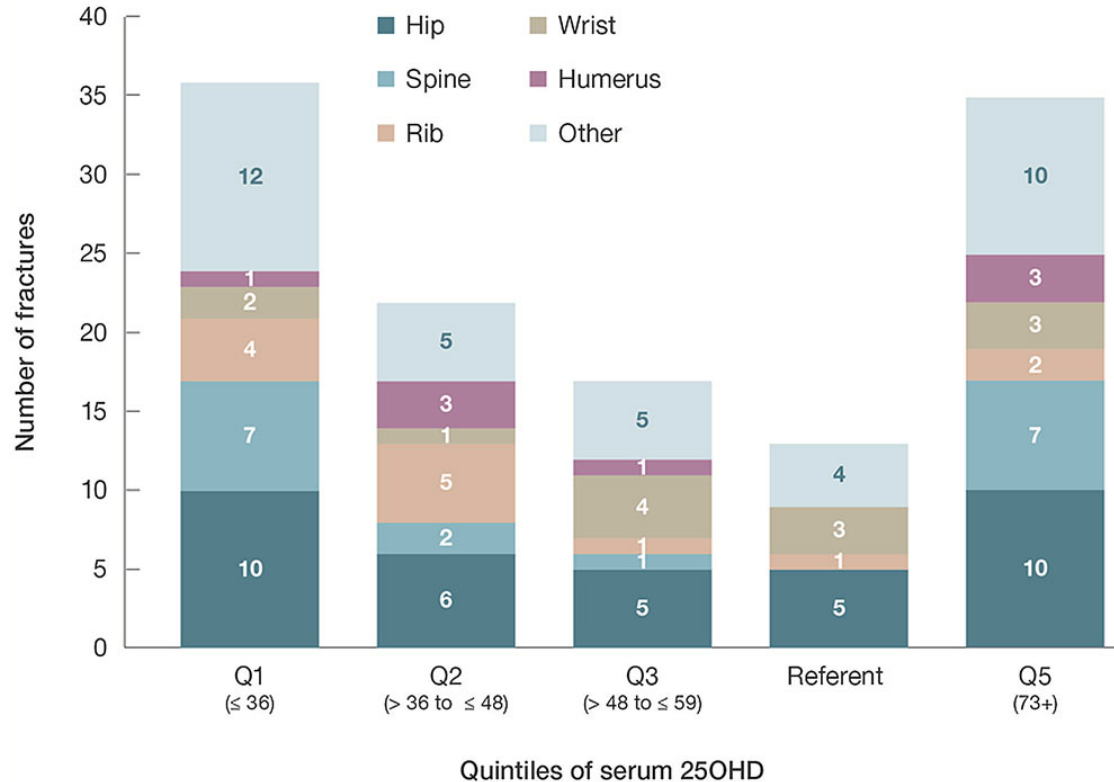
Predictors of ED re-presentations due to falls in ED Cohort

- 50% mortality over 5 year but 41% represented at least once 5 years (20% in year 1)
- Age 80 and older
- Disability in ADLs (year 1 and 3), 3 or more comorbidities (year 5)
- not sex
- males had higher mortality at 5 years (1.6)

Falls Trials

- most trials have a larger proportion of females
- From last Cochrane Review
  - 34 Multifactorial Intervention trials - median proportion females = 70%
  - 2 male only trials – negative
- sex not explored in systematic reviews (does it have an influence on effect size)

Fear of Falling

- greater in females even when account for previous falls
- Does it mean males will be less careful?
- Does it mean less likely to self-restrict activity?
- Does it influence compliance with falls prevention strategies?
- *Women were in general more sensible about protecting themselves from falls and were concerned about the consequences of a fall.*

Willingness to Engage and Compliance with Falls Prevention Strategies

- Do we have data on this?
- Exercise programs
- Medication changes
- Stepping on Programs
- OT recommendations

Systematic Review older people's perceptions of facilitators and barriers to participation – Bunn F et al

Facilitators
- Social support
- Low intensity exercise
- Greater education
- Involvement in decision making
- Attitudes to programs (relevant and life-saving)

Barriers
- Fatalism
- Denial and underestimation of falls risk
- Poor self-efficacy
- No previous history of exercise
- Fear of falling
- Poor health and function
- Low health expectations
- Stigma associated with programs for older people

CHAMP - In the last 12 months, have you visited or been visited by a physiotherapist?

> 15% had seen a physiotherapist

# In the last 12 months, have you visited or been visited by a physiotherapist?

|	
Robust, not disabled	1.0
Robust, disabled	2.1 (1.11 to 3.79)
Frail, not disabled	2.3 (1.40 to 3.91)
Frail and disabled	3.3 (1.80 to 5.99)

Disability $\geq$ 1 ADL

Adjusted for age, number of comorbidities, living alone, home ownership, post-school qualification and English speaking country of birth

Falls as part of the "bigger picture"

Geriatric Giants – "Old Old"
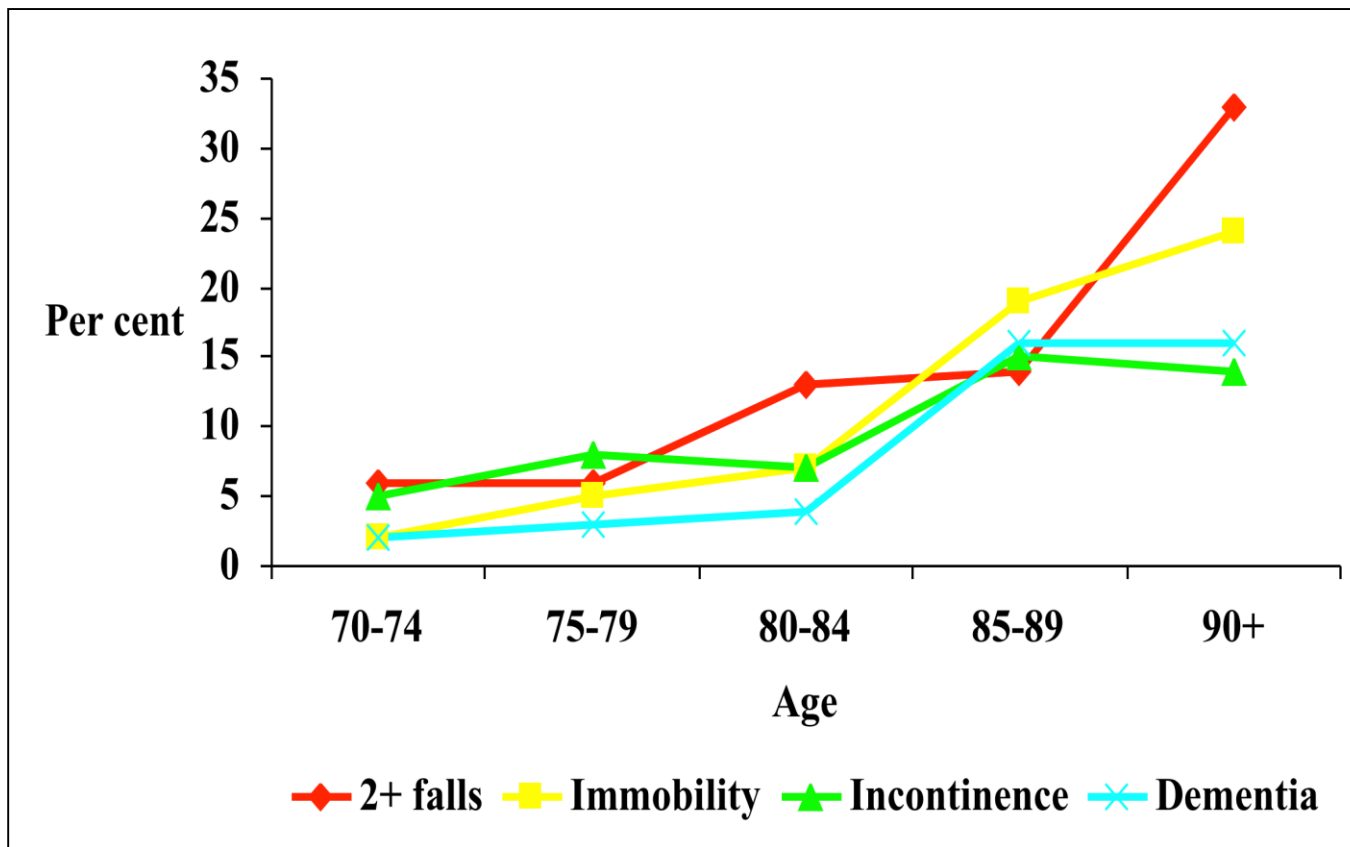
Incidence of Geriatric Syndromes
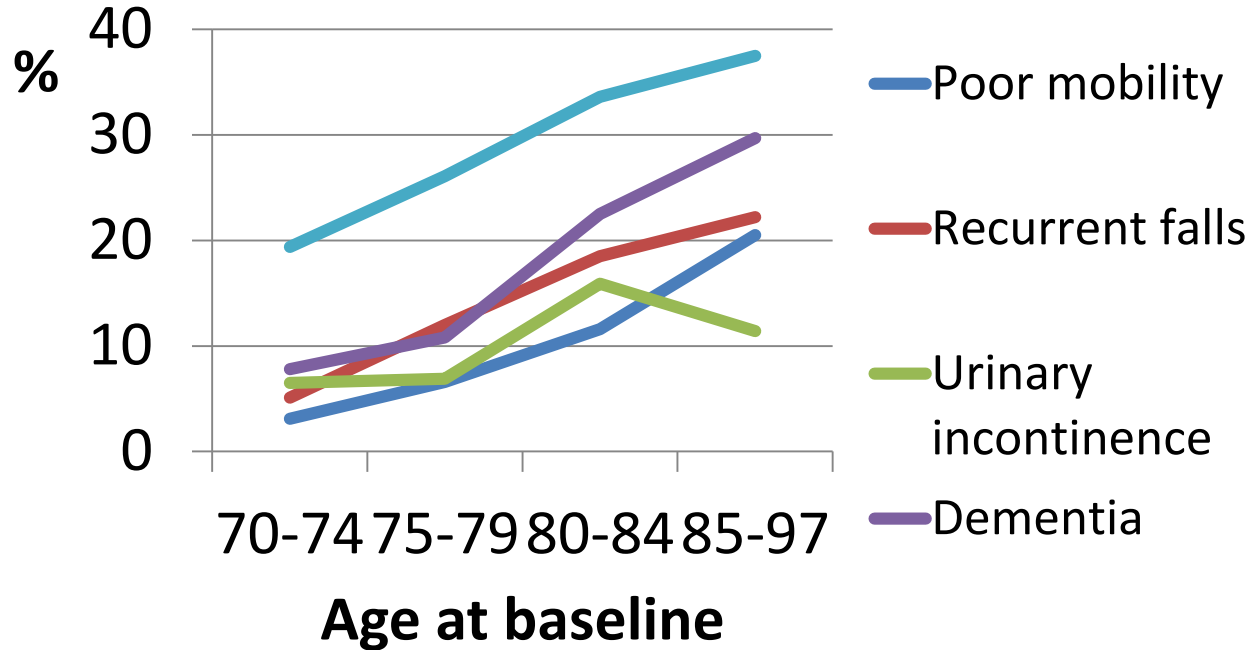
Condition-free 5-year survival

|	Total N=954	70-74 N=456	75-79 N=315	80-84 N=143	85-97 N=40
5-year mortality	28.6%	14.6%	26.2%	40.4%	70.4%
No poor mobility	69.4%	**83.0%**	**70.0%**	**55.7%**	**28.7%**
No falls	66.6%	**81.6%**	**66.9%**	**51.2%**	**25.5%**
No incontinence	66.5%	**79.8%**	**68.7%**	**50.1%**	**26.3%**
No cognitive decline	66.3%	**80.1%**	**68.5%**	**49.0%**	**27.4%**
No syndromes	58.7%	**69.9%**	**57.8%**	**42.9%**	**28.2%**
No frailty	70.1%	**83.7%**	**70.7%**	**55.6%**	**21.1%**
No IADL dependency	63.1%	**76.0%**	**61.8%**	**47.7%**	**22.1%**

Urinary Symptoms and Falls in CHAMP

- Urgency incontinence and storage and voiding symptoms are all associated with falls in home-dwelling older men

- unclear if Lower urinary tract symptoms directly cause falls or are merely markers of fall risk factors

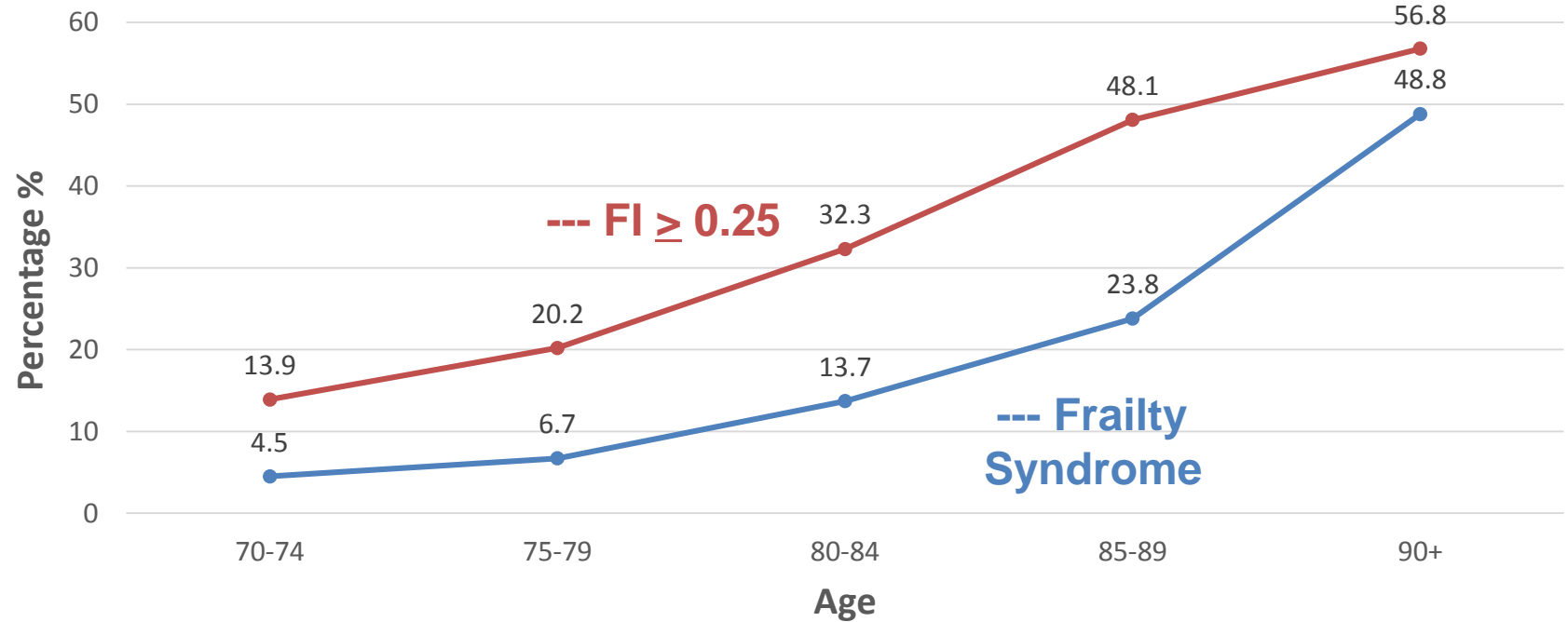# Nutrition – Dietary Guideline Index

- Food Variety – 49%

- Vegetables – 24%

- Fruit – 44%

- Grains/Cereals – 59%

- % whole grains – 39%

- Meat and Alternatives – 62%

- Dairy and Alternatives – 9.6%

Percentage of men meeting Nutrient Reference Values (NRVs)
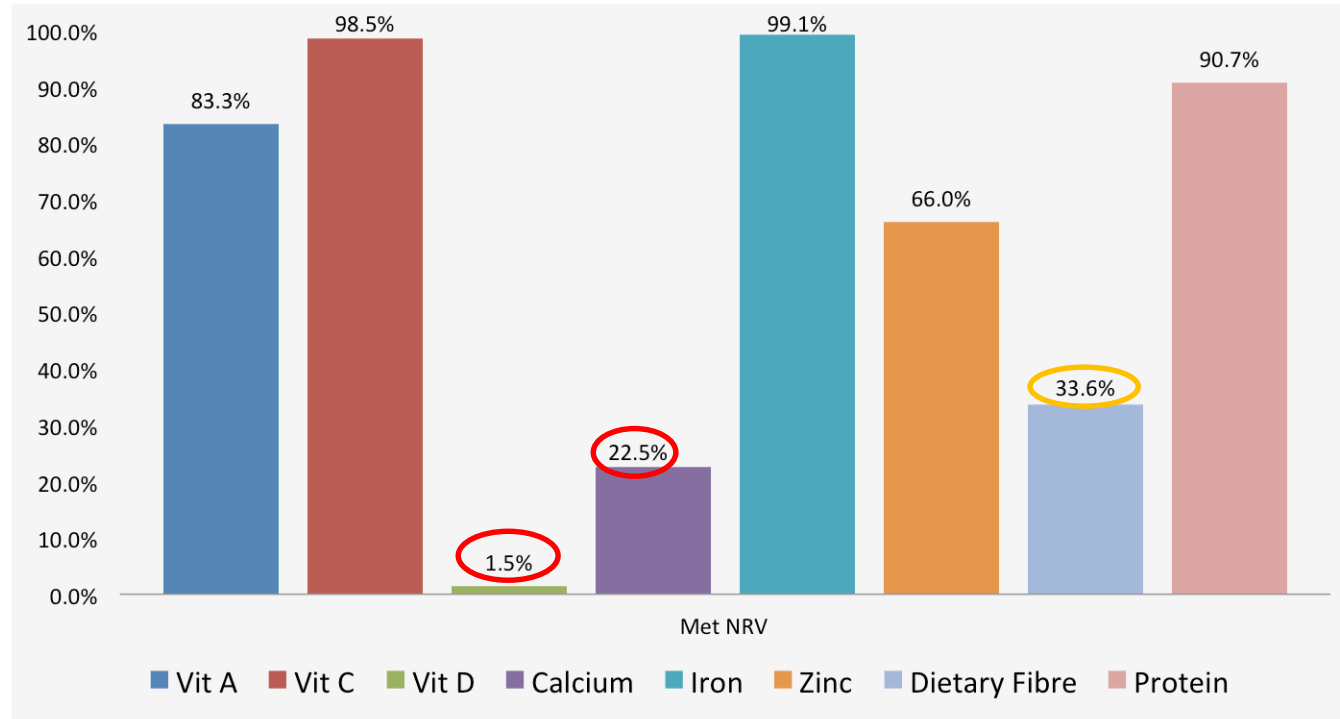
My concluding thoughts

— the risk of falls and falls related injuries in men is not so much lower that we should worry less

— no "startling" and consistent difference in risk factors

— we have no proof that falls prevention strategies proven to work in trials with predominantly women will not work in men

— important to see falls as a Geriatric Syndrome and part of the "big picture"

— Unclear if gender on it's own is a factor in whether people engage in falls prevention activities

Warning to the Blokes!

Gill DP, Zou GY, Jones GR, Speechley M. **Injurious falls** are associated with lower household but higher recreational physical activities in community-dwelling older male veterans. Gerontology 2008;54(2):106–15.