OBESITY, FALLS, AND DISABILITY

REVES 2010

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Why are falls important to study?

- Prevalence:
  - > 33% of adults 65 and older in US fall each year
  - ≅ 16,000 in US die from falls (unintentional!)
- Risk Factors
  - Unfortunately, quite common
- Consequences:
  - Unfortunately, can be quite dire

Risk factors for falls

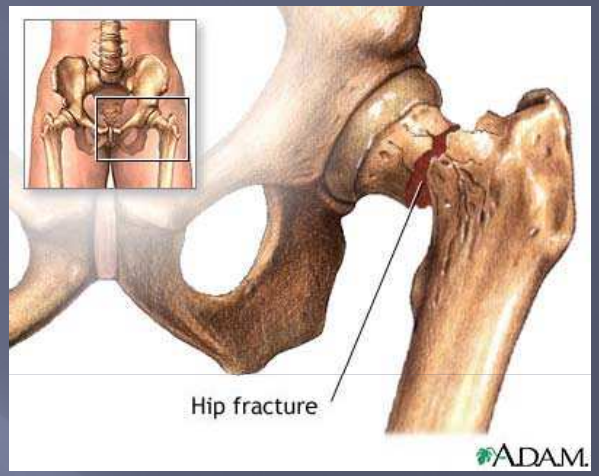
- Demographic:
  - Increasing Age
  - White Race
  - Female
- Psychological/Cognitive:
  - Fear of Falling
  - Cognitive Attention deficits
- Situational:
  - Activity
  - Physical Environment

Risk Factors for Falls

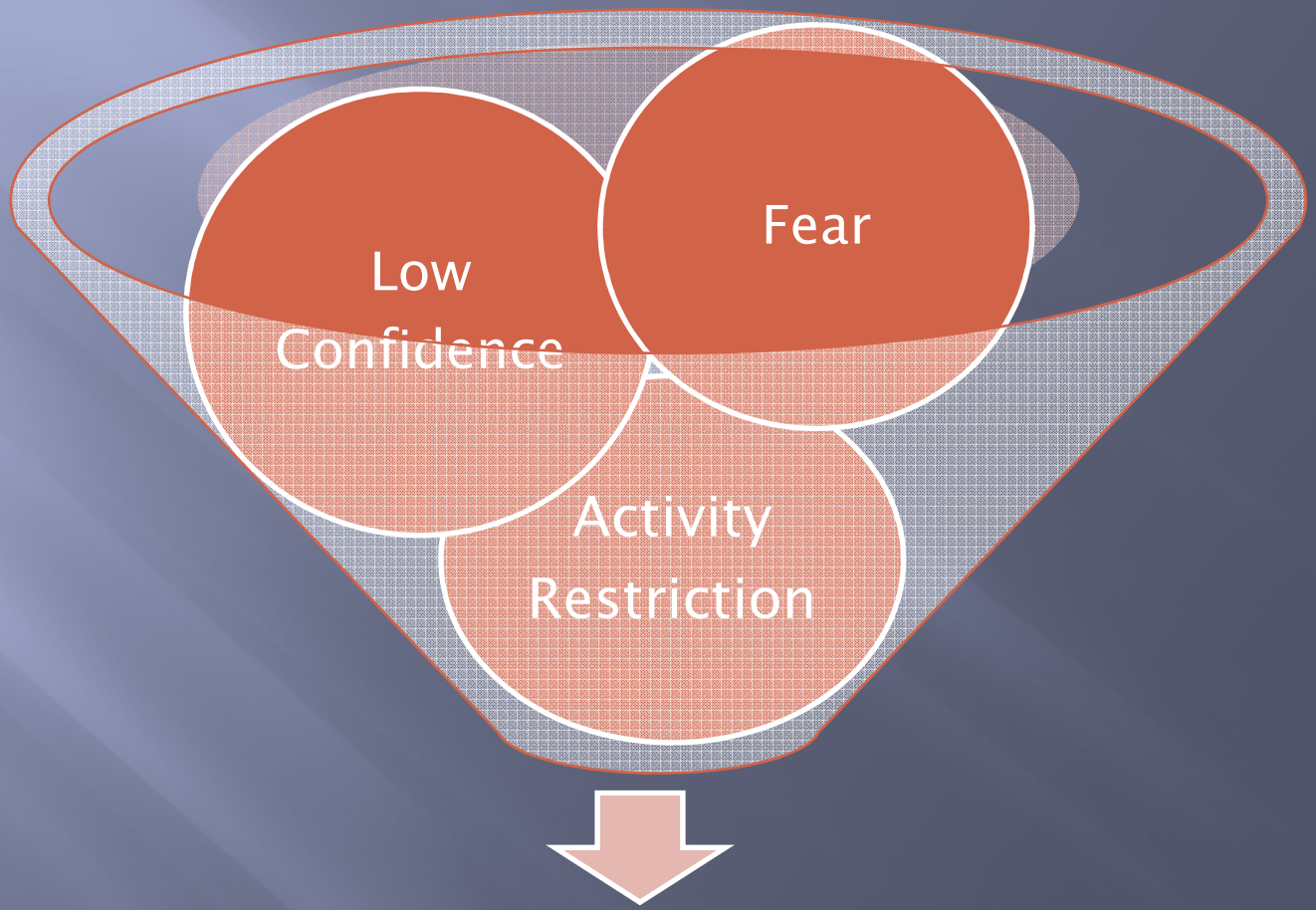
- Physical
  - Lower Limb weakness (e.g., climbing stairs)
  - Chronic Conditions:
    - Arthritis , Diabetes, Stroke, Parkinson's Disease, Dementia
  - Chronic pain
  - Vitamin D Deficiency
  - Medications
    - Inappropriate medications
    - Polypharmacy
  - Gait Variability

Consequences of falls

- Physical:
  - Death!
  - Institutional Placement
  - Injury - FRACTURE
  - Mobility Impairment
- Emotional/Social
  - Depression
  - Fear of Falling
  - Loss of Confidence, Self-Efficacy
  - Loss of Independence
  - Increased need for care
  - Social Isolation



Downward Spiral Effect:



More Falls

Questions

- What factors are associated with falls?
- What are the consequences of a fall?
- Does obesity play a role in:
  - The risk of falling
  - The risk of injury
  - The risk of disability subsequent to a fall

HRS data

- Use 1998 to 2006 waves, cumulate falls over waves
- Men and women aged 65+
- Question: Have you fallen down in the last two years?
- In that fall, did you injure yourself seriously enough to need medical treatment?

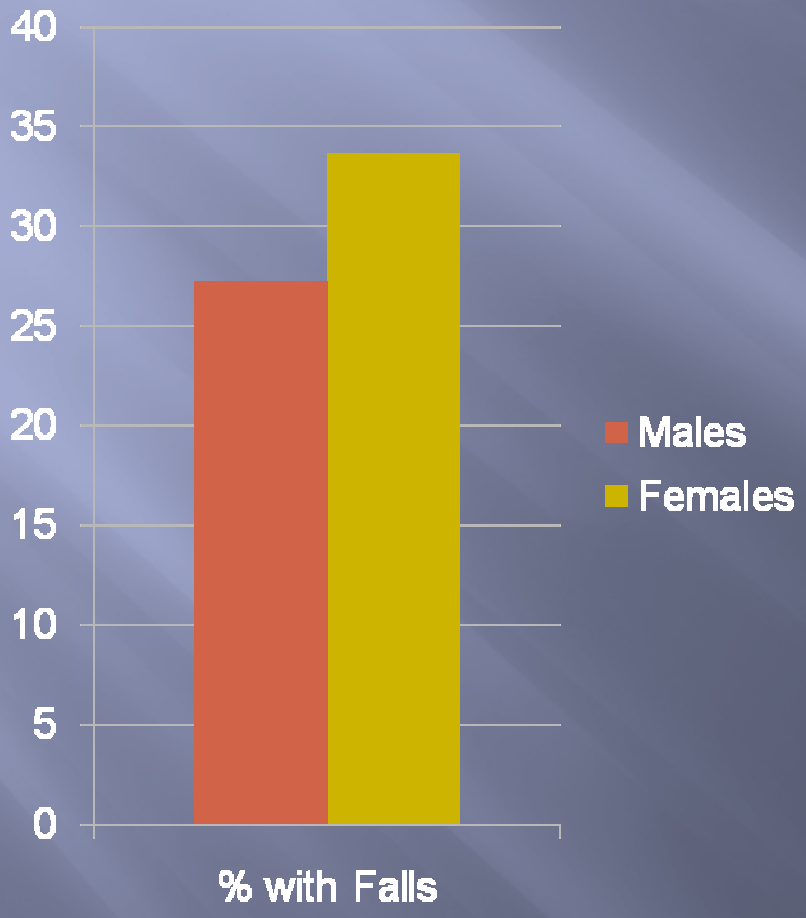
Other variables

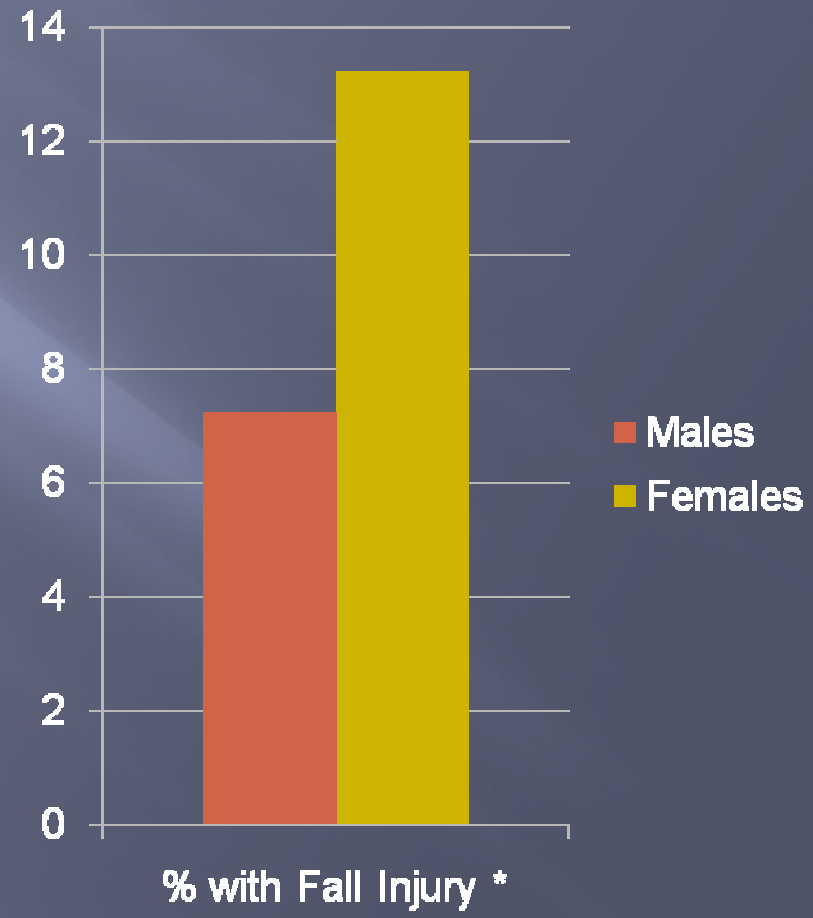
- Basic demographics
- BMI, self-reported height and weight
  - Obesity BMI ≥ 30.0
    - Obese 1: 30-34.9
    - Obese 2: 35-39.9
    - Obese 3: 40+
  - Underweight BMI < 18.5
- Chronic conditions (arthritis, stroke, diabetes)
- Lower body weakness, e.g.,
  - difficulty walking
  - climbing stairs
- ADL limitations

Approach

- Combine falls across waves
- Compare functioning in wave before the fall to functioning after the fall
  - If in 2000 report experiencing fall in past 2 years, then use 1998 functioning as baseline

Gender differences in falls and injuries due to falls.

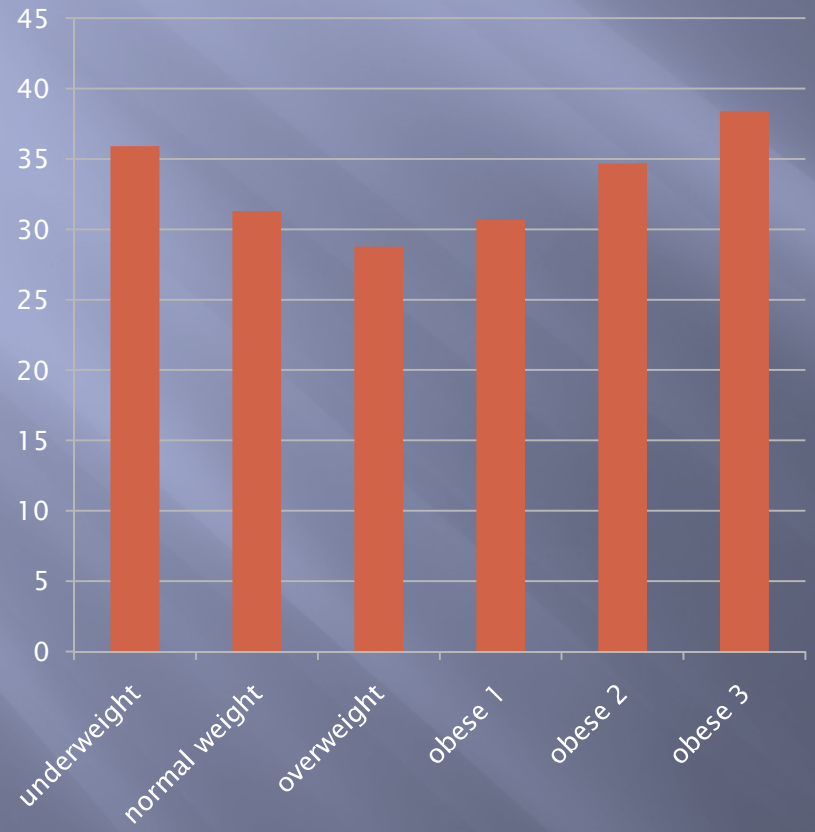




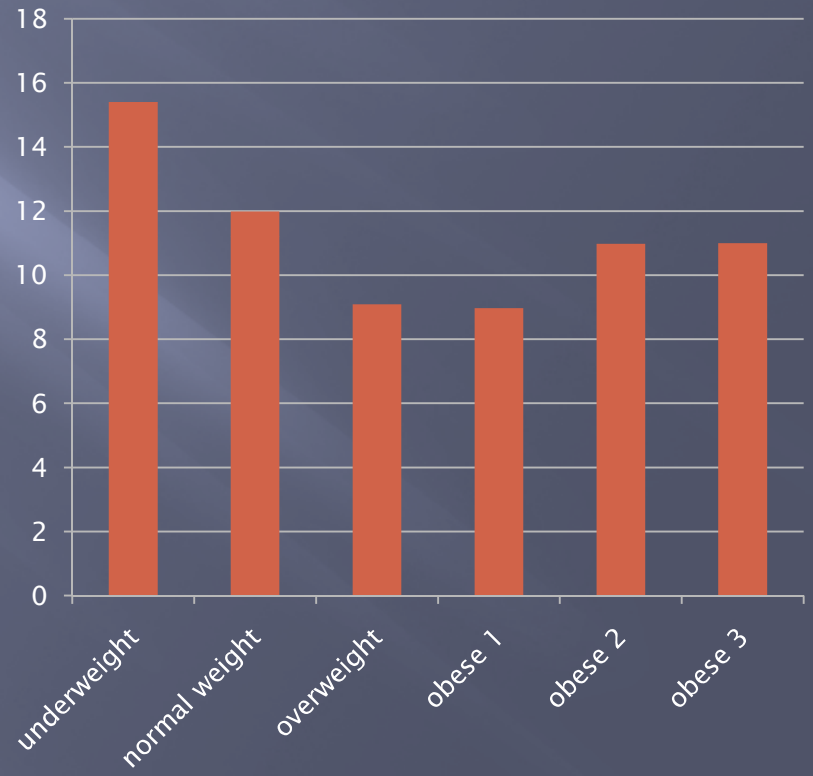
* Among those with Falls

Weight differences in falls and injuries due to falls

Falls by body size

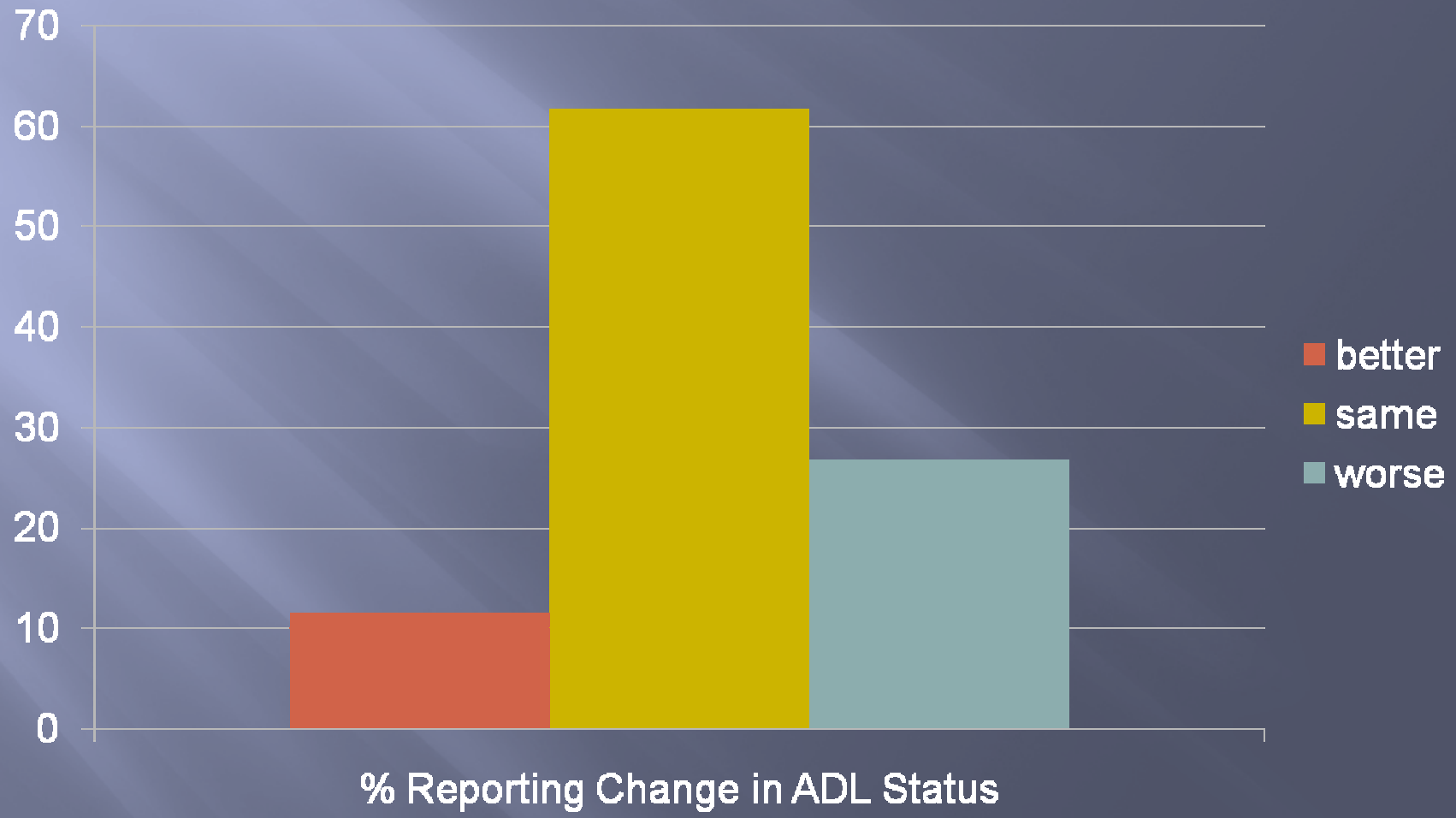


Fall related injury* by body size



* Among those with Falls

Change in ADL status after a fall



Effect of bodysize on odds of falling

	Model 1	Model 2
Age	1.050*	1.037*
Female	1.266*	1.174*
White	1.200*	1.313*
Underweight	1.171*	1.124*
Obese	1.301*	1.070*
Lower body weakness		1.774*
Diabetes		1.369*
Stroke		1.743*
Arthritis		1.419*

* Significant at 0.05 level

Effect of bodysize on odds of injury, among those who fall

	Model 1	Model 2
Age	1.022*	1.022*
Female	1.748*	1.727*
White	1.250*	1.281*
Underweight	1.274*	1.320*
Obese	0.839*	0.807*
Lower body weakness		1.155*
Diabetes		1.028
Stroke		1.090
Arthritis		1.052

* Significant at 0.05 level

Effect of a fall on a decline in ADL functioning

	Model 1	Model 2	Model 3
Age	1.063*	1.057*	1.057*
Female	1.120*	1.037	1.036
White	0.647*	0.750*	0.749*
Underweight	1.761*	1.455*	1.408*
Obese	1.557*	1.293*	1.444*
Lower body weakness		2.643*	2.642*
Diabetes		1.287*	1.290*
Stroke		1.791*	1.789*
Arthritis		1.561*	1.561*
Fall in past 2 years	2.468*	2.238*	2.364*
Under*fall			1.068
Obese*fall			0.783*

* Significant at 0.05 level

Summary

- Being underweight and obese increase the odds of experiencing a fall
- But, being obese decreases the odds that the fall will result in an injury
- Experiencing a fall in the past 2 years is significantly related to an increased odds of ADL functioning decline
- Among those who fall, the obese are less likely to have a decline in ADL functioning

Next steps

- Look at history of falls
- Look at other health conditions (cognition, vision) and medication use
- Look at living environment