

# **On the Role of Inflammation in the Aging Process**

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*“Aging seems to be the  
only available way to  
live a long life.”*

*Daniel Francois Esprit Auber*

*Via Troen, Mt Sinai J Med 70:3-22*

# Introduction

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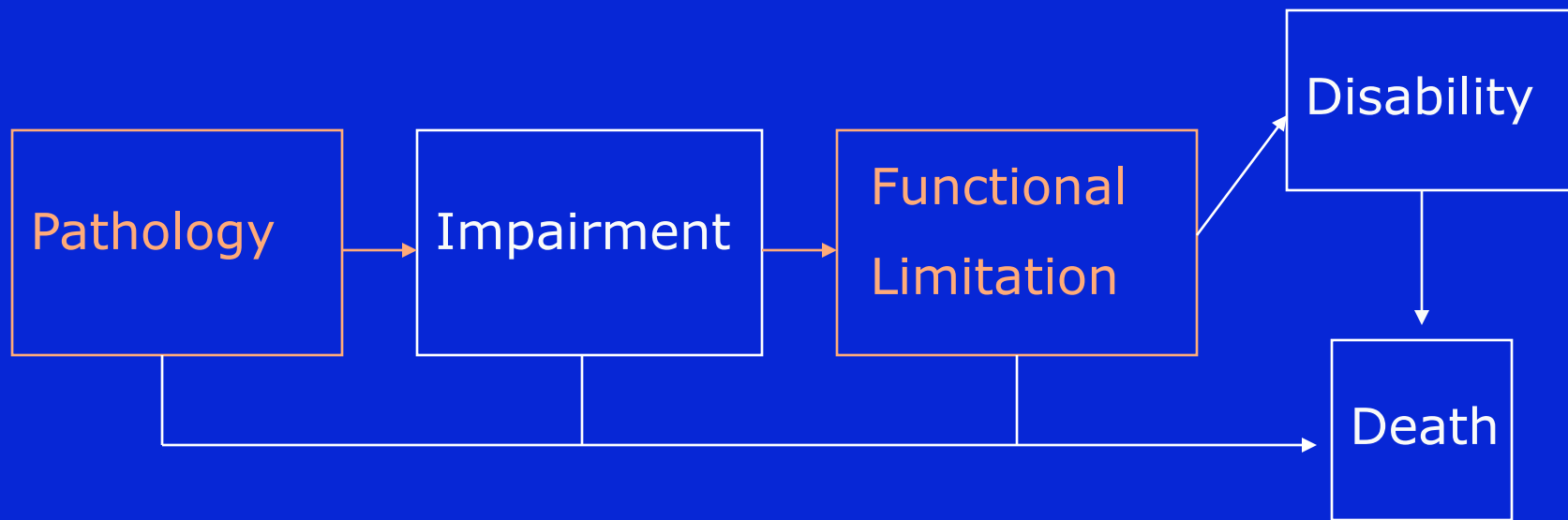
- Holy grail: What causes adverse aging?
  - Experimental data on humans: hard to come by
  - Observational, longitudinal data: central
- Cohort studies on aging abound
  - EPESE; CHS; HRS/ALIVE
  - Women's Health and Aging Study (WHAS)
  - InCHianti

# Introduction

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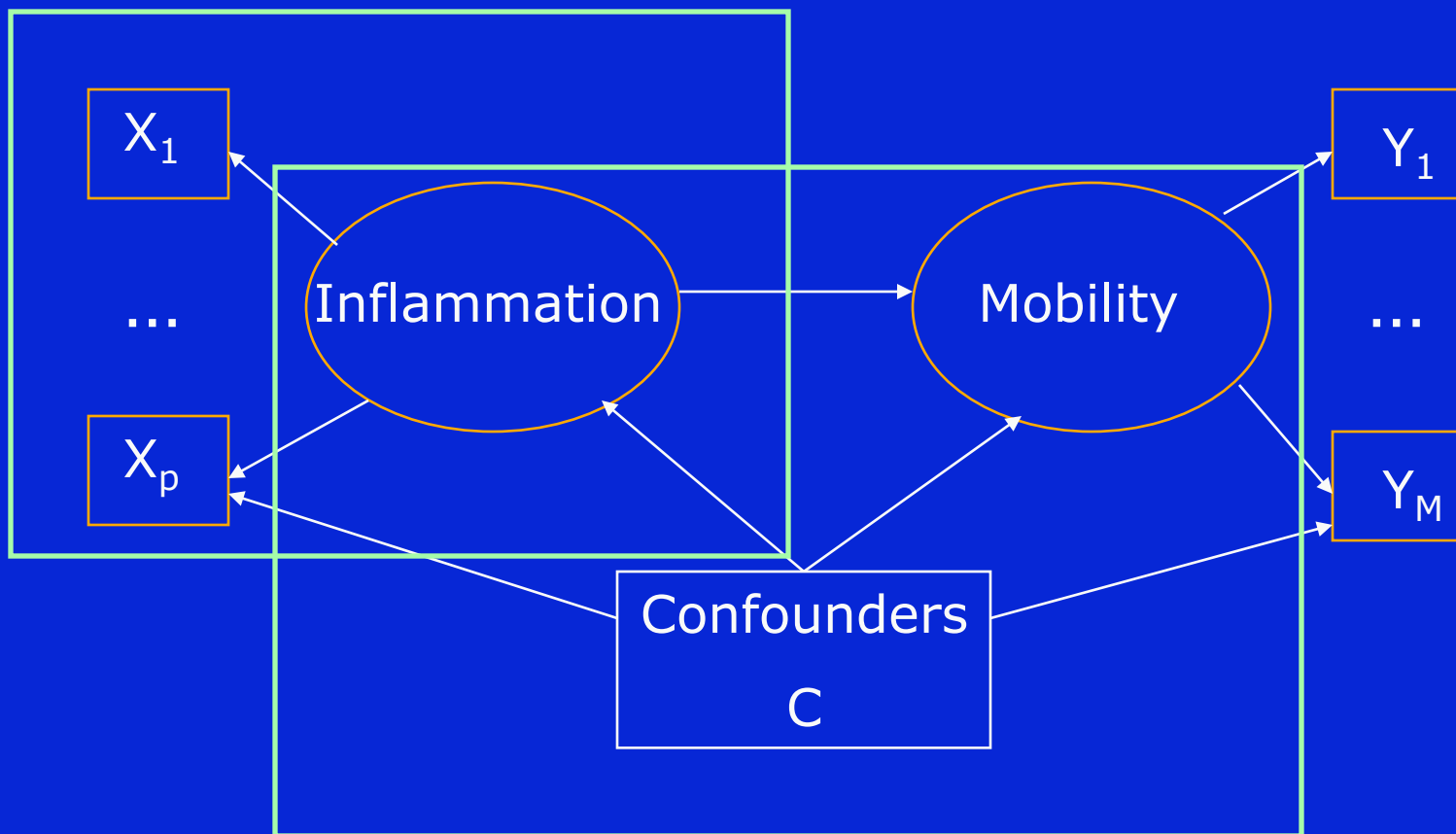
- Inflammation & Accelerated Aging
  - Cellular repair
  - Muscle wasting (*Ferrucci et al., JAGS 50:1947-54; Cappola et al, J Clin Endocrinol Metab 88:2019-25*)
  - Receptor inhibition: erythropoietin production / anemia (*Ershler, JAGS 51:S18-21*)
- Two themes
  - **Homeostasis/balance:** cytokines, hormones, nutrition, immune response
  - “Causal pathways”

# A Challenge: Determining Roles Amid Complex Measurement



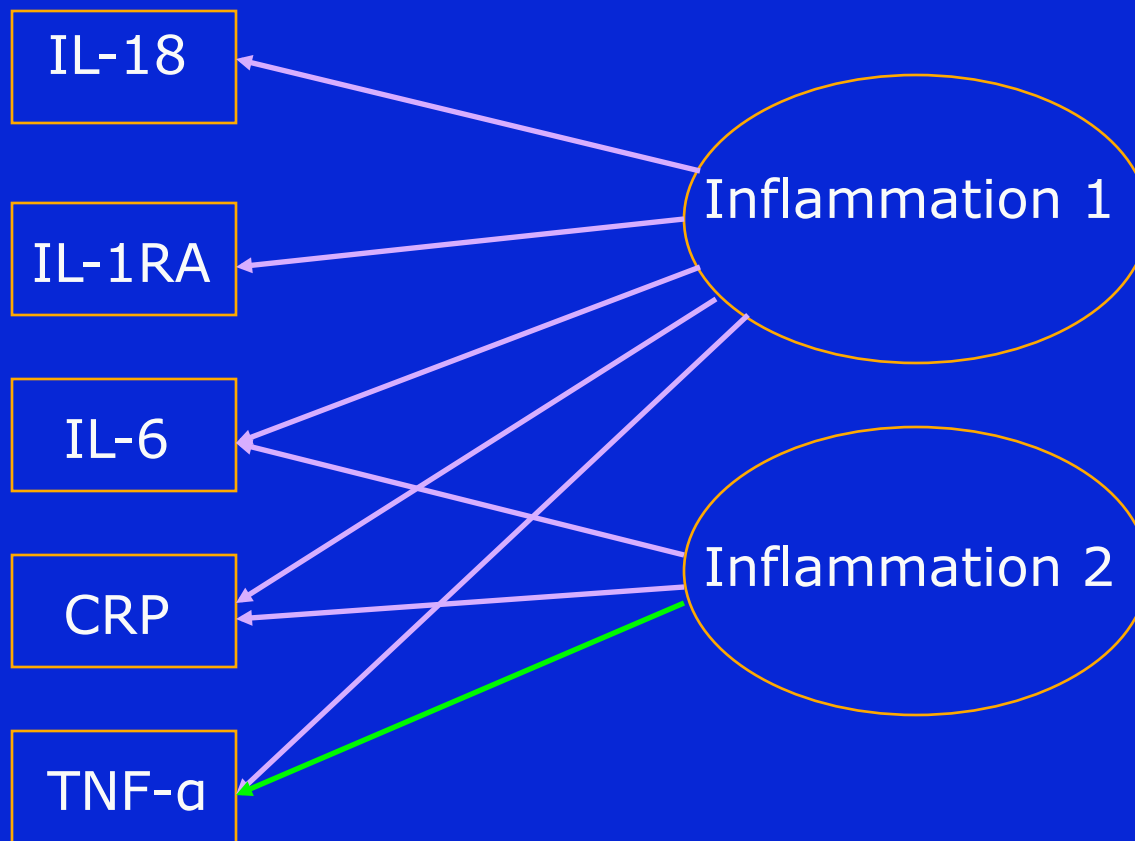
*WHO, 1980; IOM, 1991; Nagi, 1991*

# A Challenge: Determining Roles Amid Complex Measurement



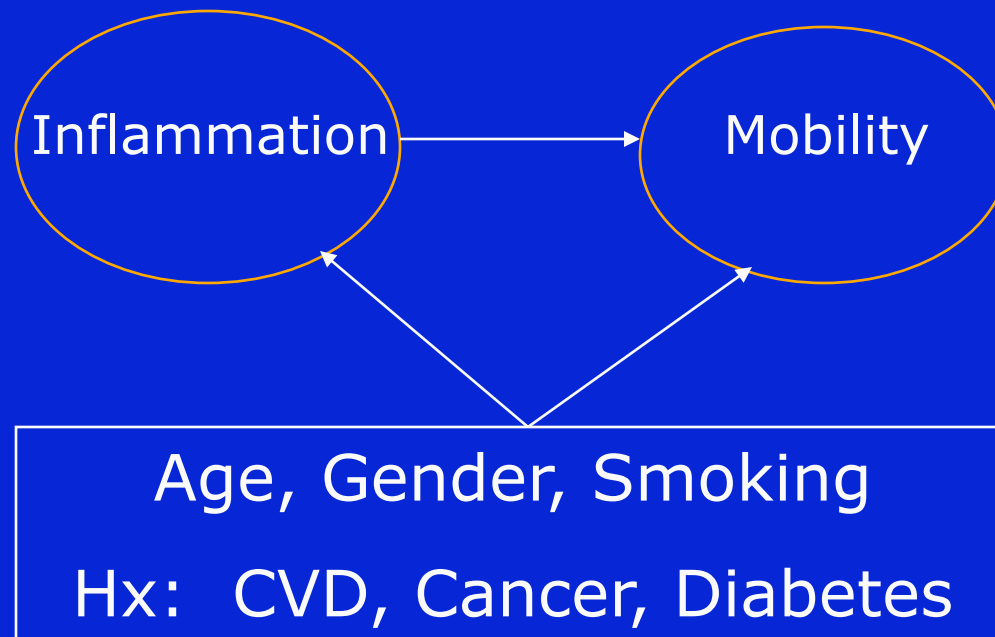
# Challenge #1: Complex Measurement

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# Challenge #2: Determining Roles

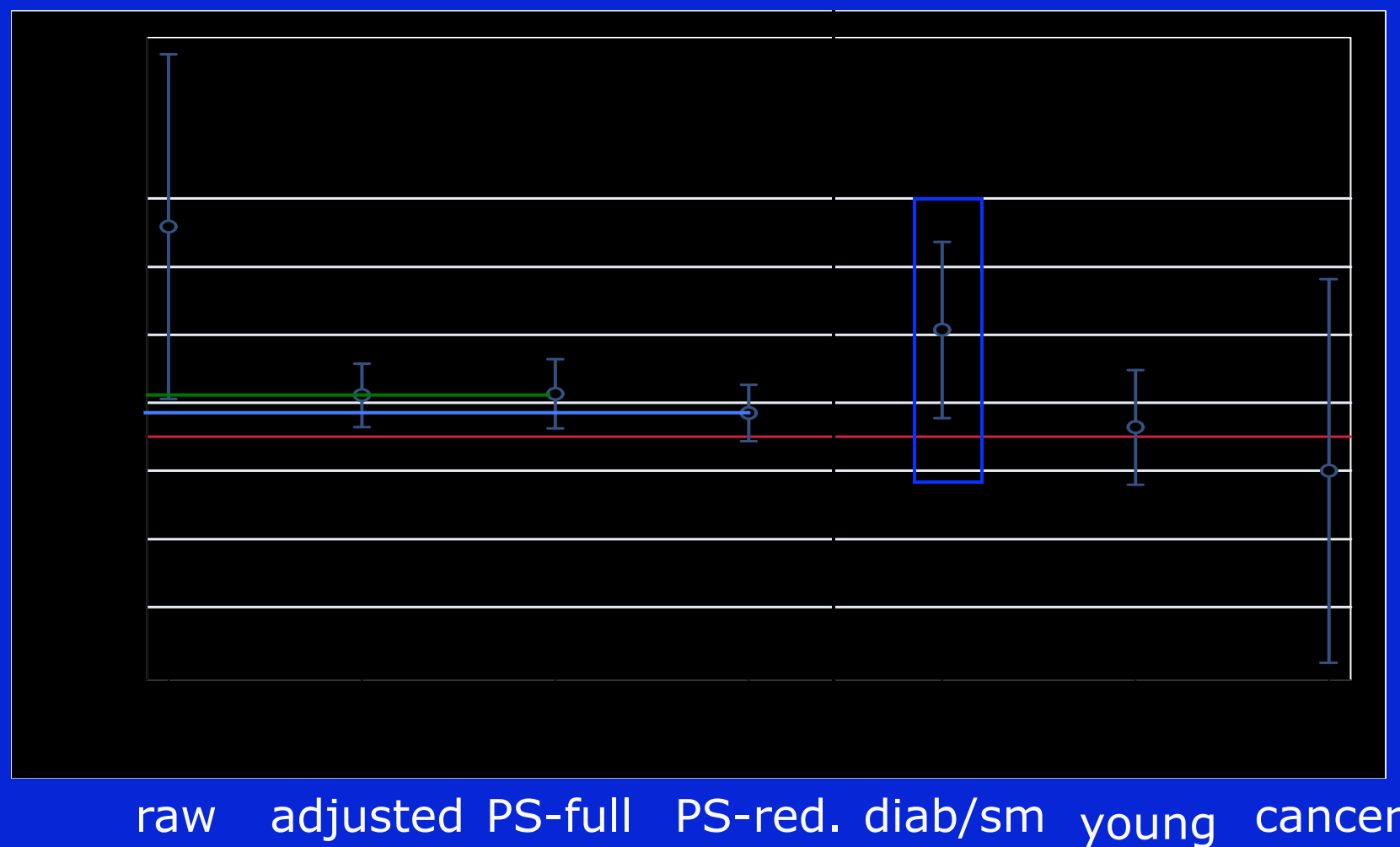
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- Propensity scoring *(Rosenbaum & Rubin, 1983)*
- My work: Implementation amid latent variables



## Inflammation Effects (Summary 2)



# Translation and Training

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## Publications

Bandein-Roche et al., *JASA*, 1997

Bandein-Roche et al., *AJE*, 1999

Xue & Bandein-Roche, *Biometrics*, 2002

Huang & Bandein-Roche, *Psychometrika*, in press

Cappola et al., *J Clin Endocrinol Metab*, 2001

Ferrucci et al., *JAGS*, 2002

Leng et al., *J Gerontol Med Sci*, in press

## Research funding

Women's Health and Aging Study III – Merit Award

Johns Hopkins Older Americans Independence Center

## Education

Training Program in the Epidemiology & Biostatistics of Aging

# Future Goals

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- Grounding of statistics in science
- Assessment of extent to which causal mechanisms can be delineated with observational data