The Answer May be Out There: A Young Investigator’s Guide to Existing Datasets in Aging

Stephen B. Kritchevsky, PhD
Anne B. Newman, MD, MPH
Ronald I Shorr, MD, MS

Sponsored, in part, by the Claude D. Pepper Older Americans Independence Center Program
Overview

- Existing data sets in career building (Kritchevsky)
- The Health ABC Study (Kritchevsky)
- The Cardiovascular Health Study (Newman)
- From Idea to Manuscript Using NAMCS (Shorr)

Resources Can be Found at: www.Peppercenter.org
Using Existing Data

- The role of Existing Data in career development
- Finding the data you need.
- Gaining access to existing data.
- What do you do when you have it?
Role of Existing Data in Career Development

- Establishes your intellectual interests
  - What is your brand?
- Provides translational “bonafides”
  - Context and significance
- Provides a way to be productive while waiting for other activities to mature
- Provides an opportunity to expand your professional network
Role of Existing Data in Career Development

- Play funding “small ball”
- Generate preliminary data for grants
- Some studies have archived samples that may provide the raw material for ancillary studies.
Finding Data
“You can’t always get what you want, but you just might find you get what you need.”

Rolling Stones
A brick in the wall.

- It is rare that the data you find matches your hypothesis precisely.
- Shaping your research question to fit the available data can be a creative process.
- If you can’t answer your hypothesis directly – look for related questions that provide circumstantial support for the hypothesis.
How to Find Data

- NIA supported sites
- NCHS
- CMS
- Google
- Approaching Lead Investigators of Existing Studies
### All Current Longitudinal Studies

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<th>Longitudinal Study</th>
<th>Acronym</th>
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<td>Age, Gene/Environment Susceptibility Study</td>
<td>AGES</td>
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<td>Aging in Manitoba</td>
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<td>Alameda County Study</td>
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<td>Betula</td>
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Current Longitudinal Studies Entry for the AGES Study

Age, Gene/Environment Susceptibility Study

Acronym: AGES
Start Year: 2002
End Year: 2006

SUMMARY

Study Summary: AGES
Additional Comments: Genetic homogeneity of the Icelandic population (based on the Reykjavik Study (1967)). Very comprehensive: genetic, DNA & MRI.

STUDY DESIGN

Country: Iceland
Sample Size: 9,500
Age Group: 68-95
Gender: Both
# Cohorts: 1
Total Waves: 2
Link w/ Data: Survey, death and birth certificates

生理学的测量 ✓ 心理学的测量 ✓
功能健康 ✓ 认知能力 ✓
生活方式: 体力活动 ✓ 社会和人口统计学 ✓
生活方式: 营养 ✓ 健康服务利用 ✓
生活方式: 其他 ✓
少数族裔 ✓

CONTACTS

Contact Information: Dr. Tamara Harris, Senior Investigator & Dr. Vilmundur Gudnason
E-mail 1: harrista@nia.nih.gov
E-mail 2: v.gudnason@hjartavernd.is
Web Page(s): Web 1: http://www.hjarta.is/en/
Ambulatory Health Care Data

For more information, contact the Ambulatory Care Statistics Branch at (301) 458-4600.


Coming Soon

National Ambulatory Medical Care Survey (NAMCS)
- Description

National Hospital Ambulatory Medical Care Survey (NHAMCS)
- Description
The National Archive of Computerized Data on Aging (NACDA), located at ICPSR, is funded by the National Institute on Aging. NACDA's mission is to advance research on aging by helping researchers to profit from the exploited potential of a broad range of datasets. NACDA acquires and data relevant to gerontological research, processing as needed to prepare it for effective research use, disseminates them to researchers, and facilitates their use. By preserving and making available the largest library of electronic data relevant to aging in the United States, NACDA offers opportunities for secondary analysis by researchers, focusing on major issues of scientific and policy relevance.
Gaining Access to Data
What’s the win-win: You receive data, and you provide productivity and credit.

The investigators you approach have poured their hearts and souls into the study.

The people you work with are your future colleagues.

Studies are supposed to have a data sharing process. Find out how it works, and follow it.

NIH intramural studies are usually easier to access than extramurally funded studies.
More things to remember

- You may have to sign a data use agreement
- You may need IRB approval
- Ask for as much data as possible
- Don’t expect too much from relatively new studies.
- Patience and persistence will pay-off
What to do when you get the data

- Read the key papers
- Read the documentation, carefully
- Try to get copies of the data collection forms and code books
- Understand the data structure
- Things you may need help with
  - Getting the data into an format that is easy to analyze
  - Deriving variables for analysis
The Health Aging and Body Composition Study

www.nia.nih.gov/researchinformation/scientificresources/HealthABCdescription.htm

www.grc.nia.nih.gov/branches/ledb/healthabc/index.htm
Health ABC Objectives

**Primary:** To examine whether change in body composition, particularly loss of muscle, represents a common pathway by which multiple conditions contribute to disability.

**General:** To understand early transitions in the disablement process to support intervention development to delay or prevent decline in physical function.
Health, Aging and Body Composition Study

Health history, socioeconomic status, psychosocial factors, behavioral risk factors

Past history

Mediators

Outcomes

Core examination

Body composition

- Lean mass
- Bone density
- Body fat

CT-Fat depots, muscle

Anthropometry

Endurance

Strength

Physical performance

Phlebotomy

Physical activity

Weight-related health conditions

Functional limitation

Death

ADL disability

Healthy aging

Metabolic, Genetic or Inflammatory modifiers

Acute illness episodes

Past history

Core examination

Mediators

Outcomes

Healthy aging
Participating Sites & Key People

- National Institute on Aging
  - Tamara Harris, MD, MS (harrist@gw.nia.nih.gov)
  - Eleanor Simonsick, PhD

- University of California, San Francisco
  - Michael Nevitt, PhD (mnevitt@psg.ucsf.edu)
  - Steve Cummings, MD

- University of Pittsburgh
  - Anne Newman, MD, MPH (newmana@edc.pitt.edu)

- University of Tennessee
  - Suzy Satterfield, MD (ssatterfield@utmem.edu)

- Wake Forest University
  - Stephen B. Kritchevsky, PhD (skritche@wfubmc.edu)
Health ABC Design

Longitudinal Cohort Study

- N=3,075
- 70-79 year olds
- Memphis, TN & Pittsburgh, PA
- No difficulty in walking ¼ mile or climbing 10 steps & ADLs
- 50% Women, 41% African-American
- In it’s 9th year of follow-up
Health ABC Design (Continued)

- Major Exclusion Criteria
  - Cancer requiring treatment in the past 3 years
  - Participation in the lifestyle intervention trials
  - Intention to move in the next 3 years
Primary Outcome (Mobility Limitation)
- Any difficulty walking ¼ mile or going up 10 steps over a 6-month period

Secondary Outcomes
- Disability, Mortality, Weight Related Health Conditions

Visit Schedule
- Annual Clinic Visits
- Semi-Annual Phone Contacts
Incident Mobility Limitation

- p-value (gender) = 0.0003
- p-value (race) < 0.0001
- p-value (race X gender) < 0.0001
Health, Aging and Body Composition Study

Past history  Core examination  Mediators  Outcomes

Health history, socioeconomic status, psychosocial factors, behavioral risk factors

Body composition
- Lean mass
- Bone density
- Body fat
CT-Fat depots, muscle
Anthropometry
Endurance
Strength
Physical performance
Phlebotomy

Physical activity

Weight-related health conditions

Functional limitation

Death

Metabolic, Genetic or Inflammatory modifiers

Acute illness episodes

ADL disability

Healthy aging
### Novel Exam Components

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<th>Dental/periodontal exam</th>
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<tr>
<td>- CT - abdominal fat</td>
<td>- 4-meter walk</td>
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<tr>
<td>- CT - thigh muscle</td>
<td>- 20-meter walk</td>
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<tr>
<td>- CT - spine CT scout (T4 thru upper sacrum)</td>
<td>- Balance walks</td>
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<tr>
<td>- CT - vertebral BMD</td>
<td>- Usual pace walk</td>
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<td>- 20 cm narrow walk</td>
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<td>- Grip strength</td>
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<td>- Isokinetic ankle strength (Kin-Com)</td>
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<td>- Isokinetic muscle fatigue (Kin-Com)</td>
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<td>- Isokinetic quad strength (Kin-Com)</td>
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<td>- Isometric strength (Litek chair)</td>
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<td>- Long distance corridor walk (400-m)</td>
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<td>- Standing balance</td>
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<td>- Semi-tandem stand</td>
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<td>- Tandem stand</td>
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<td>- One-leg stand</td>
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<th>Olfaction</th>
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<td>Peripheral neuropathy</td>
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<tr>
<td>- DXA, whole body</td>
<td>- Monofilament</td>
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<td></td>
<td>- Peroneal motor nerve conduction</td>
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<td></td>
<td>- Vibration perception</td>
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<th>Osteoarthritis assessment</th>
<th>Pulmonary function test</th>
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<td>Vision</td>
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<td>- Knee x-ray</td>
<td>- Bailey-Lovie distance visual acuity</td>
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<td></td>
<td>- Frisby stereo test</td>
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<td>- Pelli-Robson contrast sensitivity</td>
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Computerized tomography of the mid-thigh:
Health ABC

**Intramuscular fat** - Pools of lipid within fascial planes

**Muscle attenuation** - Reflects both intramyocellular lipid and extramyocellular; the greater the lipid, the lower the attenuation.
## Novel Exam Components

### Assays
- 2-hour glucose (after glucose)
- Albumin
- Alkaline phosphatase
- Blood count
- Cholesterol, total
  - Cholesterol, HDL
  - Cholesterol, LDL
- Creatinine
- Cytokine assays
  - CRP
  - IL-6
  - IL-6sr
  - IL-2sr
  - Leptin
  - PAI-1
  - TNFα
  - TNF-R1
  - TNF-R2

### Stored
- Buffy coat
- Citrate
- Cryopreserved buffy coat
- EDTA plasma
- PAXgene (for mRNA analysis)
- Platelets
- RBC
- SCAT-1
- Serum

### Cognitive assessment
- CLOX 1
- Digit symbol substitution (DSST)
- Exit 15
- Rapid Estimate of Adult Literacy in Medicine (REALM)
- Teng Mini-Mental State (3MS)
- Cognitive vitality substudy
  - Buschke Selective Reminder Test (SRT)
  - Activity assessment
  - Social contact
  - Personality assessment
  - Cognitive vitality questionnaire
- Boxes test
- Digit copying test
- Pattern comparison test
- Letter comparison test
- Simple reaction time test
- Digit digit test
- Digit symbol test
The Publications Process

- Writing Group Focused
- Proposal forwarded to the P&P committee through the Coordinating Center at UCSF
- Reviewed for scope and overlap
- Comments from the P&P
- Assignment of co-authors
- Data made available upon approval of the writing group proposal
Ancillary Study Process

- An ancillary study adds new information to Health ABC
- The data becomes part of the Health ABC data base
- Ancillary Proposal process
  - File a proposal
  - Review
  - Materials made available upon approval
<table>
<thead>
<tr>
<th>Junior Investigator</th>
<th>Grant type (*under review)</th>
<th>Title</th>
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| Hal Atkinson, MD, MS  
Wake Forest University                           | K01-HP-00086, P30-AG-21332 | Relationship of cognitive & physical function                         |
| Jennifer Brach, PhD, PT  
University of Pittsburgh                        | K23-AG-026766 (Beeson Scholar) | Gait variability: epidemiology, assessment and management              |
| Matteo Cesari, MD, PhD  
University of Florida                                | R01-AG-026556-01          | Oxidative damage, disability and mortality in elders                   |
| Matthew Delmonico, PhD  
University of Pittsburgh                              | K99-R01*                  | Weight loss and resistance training to optimize muscle function in obese elders |
| Jingzhong Ding, MD, PhD  
Wake Forest University                              | P30-AG-21332               | Fat distribution and physical function and                            |
| Kimberly Faulkner, PhD  
University of Pittsburgh                             | P30-AG-024827             | Genetics of peripheral neuropathy                                      |
| M. Kassim Javaid, MD, PhD  
University of California, San Francisco               | UK Arthritis Research Campaign Traveling Fellowship Award | Age-related systemic factors (Vitamn D, Inflammation) in knee osteoarthritis |
| Ihab Hajjar, MD  
Harvard University                                       | K23-AG-030057*            | Renin angiotensin system, aging and cognition in elderly hypertensive patients |
| Elizabeth P. Helzner, PhD  
Columbia University                              | K-01*                     | Hearing loss in older adults                                          |
| Denise Houston, RD, PhD  
Wake Forest University                                 | P30-AG-21332              | Protein intake and body composition in older adults                   |
| Alessandro Iannaccone, MD  
University of Tennessee, Memphis                        | K23-EY-000409             | Clinical epidemiology of retinal degeneration                         |
| Yongmei Liu, PhD  
Wake Forest University                                      | R01-HL-085323             | Age-related inflammatory changes: The role of genes and body composition changes |
| Sandra K. Pope, PhD  
University of Arkansas for Medical Sciences             | K01-AG-020173             | Dietary & genetic risk factors in cognitive decline                  |
| Jama Purser, PT, PhD  
Duke University                                                 | K-01-HD049593            | Genetics of functional decline in older adults                        |