

Overview of the OPACH Study



WHI LLS and OPACH

▶ Long Life Study (LLS): 2012-2013

- 7875 women from the WHI Extension II Medical Records Cohort
- In-home visit with blood draw, clinical assessment, functional status

▶ Objective Physical Activity and Cardiovascular Health (OPACH)

- Ancillary study of LLS: R01 HL105065 (PI: Andrea LaCroix)
- Aims to determine associations of PA and SB with cardiovascular events, total mortality, and incident falls
- Adding accelerometry, self-reported PA (PAQ and CHAMPS) and Falls calendar for a year
- N=7048 participated, 6489 completed 7-day accelerometer and sleep log

Physical Activity (PA)

- Intensity by METs
 - Sedentary behavior (SB): <1.5 METs
 - Light activity: $1.5\text{—}3.0$ METs
 - MVPA: >3.0 METs
- 2008 PA Guidelines for Americans
 - 150 min/week moderate, or 75 min vigorous
 - Bouts of at least 10 minutes, throughout the week
 - Double the amount for additional benefits

Accelerometers

- Wearable device to measure movement
- 1-axis (vertical) vs. 3-axis

<http://well.blogs.nytimes.com/projects/2014/03/accelerometers.html>

- Unit of raw data: “g”
- Actigraph GT3X+: worn on hip/wrist



Strobe Flow Chart for OPACH Study

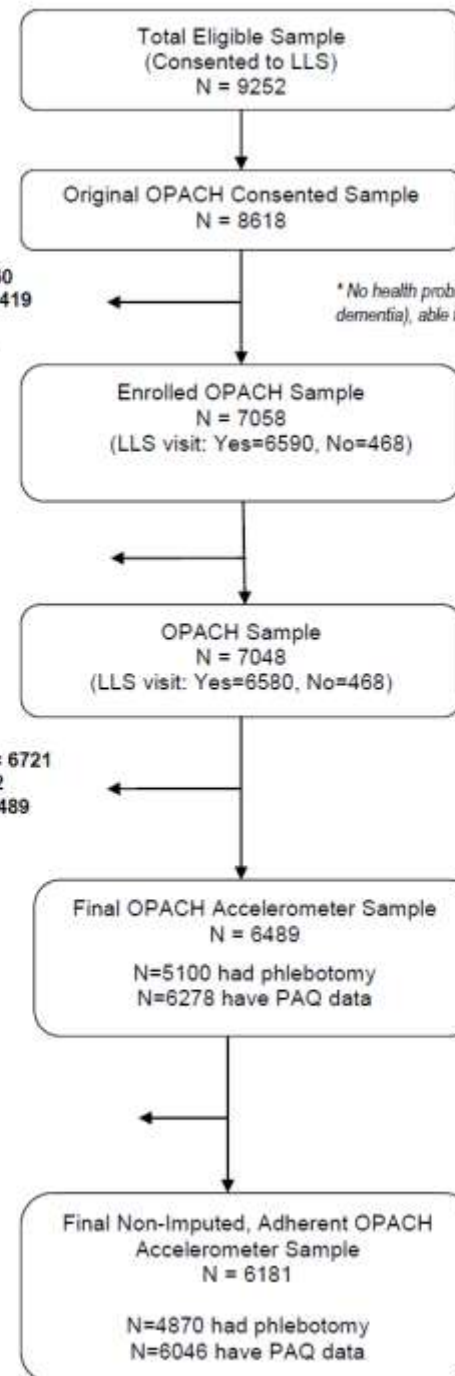
Alive at Recruitment: n = 8560
Met Eligibility Criteria*: n = 8419
Able to Contact: n = 7654
Agreed to Participate = 7058

* No health problems that prevent participation (e.g. dementia), able to walk, does not reside in nursing home.

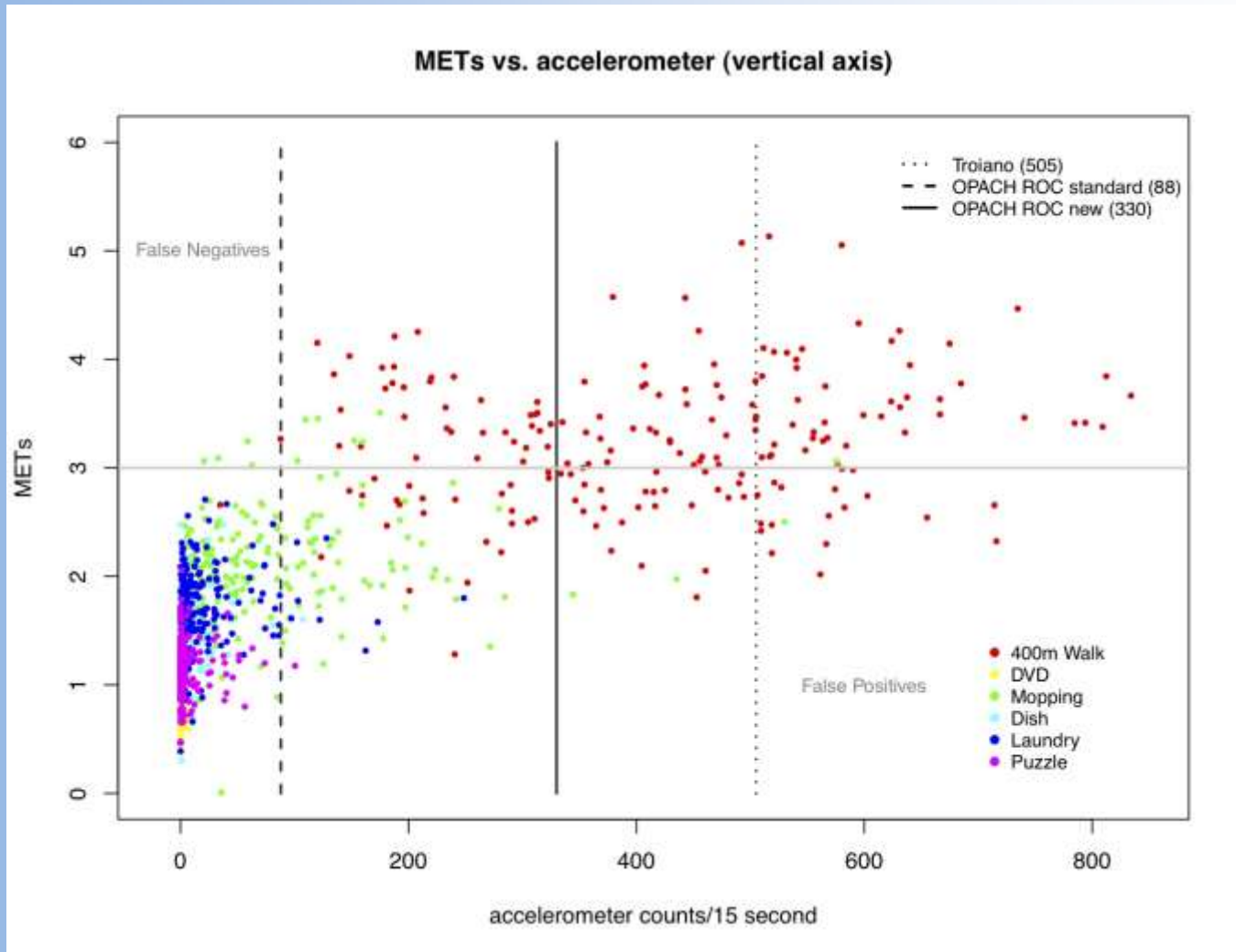
Alive to Participate = 7048

Accelerometer Returned: n = 6721
Downloadable Data: n = 6512
Processed for Analysis: n=6489

Had ≥4 days of wear with
≥10 hours/day: n = 6181



OPACH calibration study



OPACH Intensity Cutpoints are Paradigm Shifting

- OPACH cutpoints substantially lower than in young adults
- Consistent with declines in resting metabolic rate with age and increasing energy cost of activity with age
- NHANES intensity cutpoints result in substantial underestimation of MVPA in older women with diverse fitness levels, functional abilities and chronic disease burdens; 12 vs. 51 minutes/day in the OPACH women
- Age-specific accelerometer intensity cutpoints are critical for accurate classification of PA in older adults

OPACH Papers in Progress

- 12 papers published so far
- 30+ manuscript proposals approved

Outcomes being studied:

- ✓ Atrial fibrillation
- ✓ Congestive heart failure
- ✓ Diabetes
- ✓ Physical function trajectories
- ✓ Cognitive function
- ✓ Injurious falls (CMS)
- ✓ Fractures
- ✓ PA-related cancers

NIH Grants using OPACH Data

1. WHISH U01 (Kooperberg, LaCroix, Stefanick)
2. WHISH-2-Prevent Heart Failure (Eaton)
3. Novel methods for analyzing accelerometry data (Di)
4. Unraveling Physical Activity and Sedentary Behavior Associations with Cancer Combining Two Cohorts (Evenson)
5. Sedentary Time Interrupted P01 (LaCroix, Kerr)
6. Evidence to Inform Guidelines Regarding Physical Activity and Sedentary Behavior to Reduce Fracture Risk in Older Women (Crandall)
7. Non-fracture fall-related injuries (Strotmeyer)

Junior Faculty and Doctoral Students

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- John Belletiere (LaCroix)
- Kelsie Full (Kerr)
- Andrew Hua (Buchner)
- Dori Rosenberg, PhD (LaCroix)
- Priya Palta (Evenson)
- Emily MacDonald (LaCroix)



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