



# Biomarkers in the Mexican Health and Aging Study (MHAS)

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International Meeting on Biological Risk in Population Surveys,  
April 9, PAA-2019.

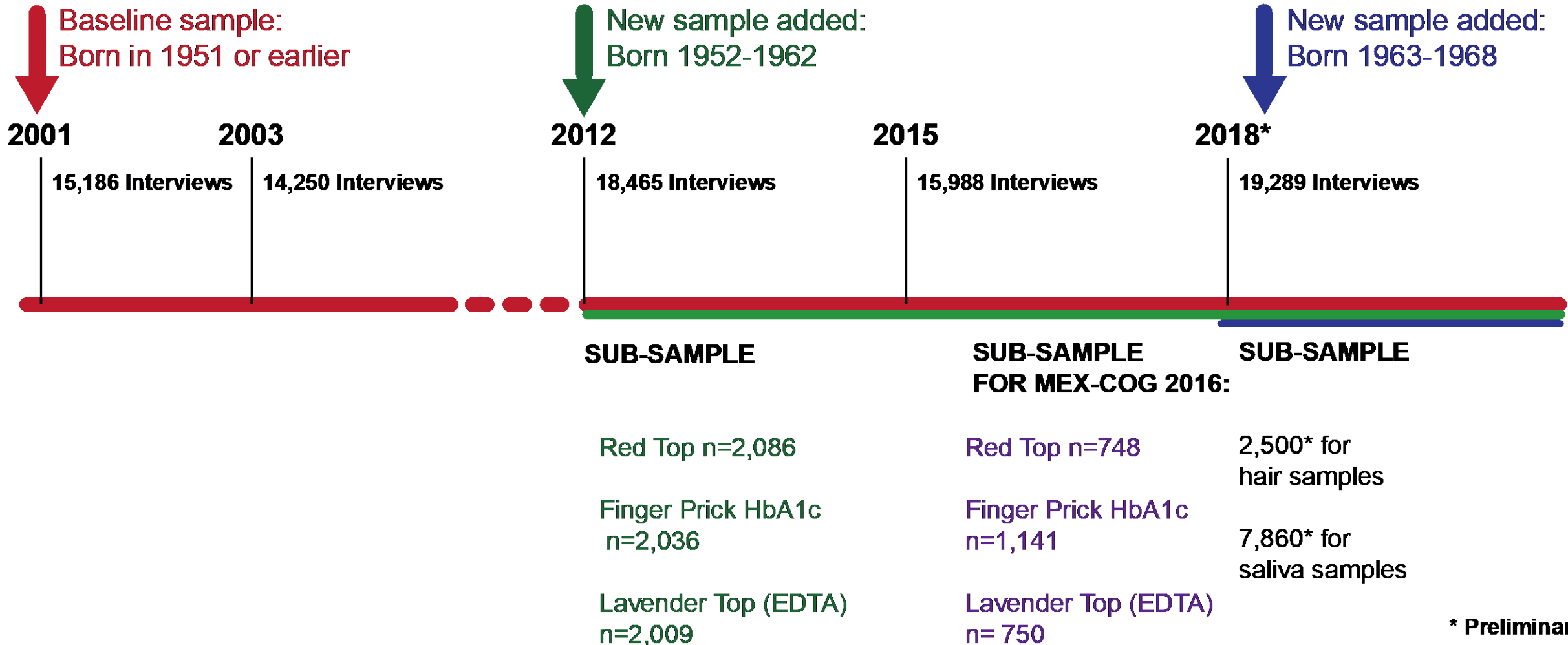
The MHAS is partly sponsored by the National Institutes of Health/National Institute on Aging (R01AG018016) and the INEGI in Mexico.

[www.MHASweb.org](http://www.MHASweb.org)

# MHAS Samples of Biomarkers

- MHAS 2012 and Mex-Cog 2016
  - Finger prick: glucose (HbA1c), hemoglobin (Hb) (n=3,177)
  - Intravenous Red Tube (n=2,834)
    - C-reactive Protein (CRP) (High Sensitivity)
    - Total and HDL Cholesterol
    - Thyroid-Stimulating Hormone (TSH)
    - Vitamin D
  - Intravenous EDTA - Lavender Tube (n=2,759)
    - For DNA studies
- MHAS 2018
  - Saliva Samples (n=7,860)
    - AD genetic risk factors
  - Hair samples (n=2,500)
    - Environmental risk factors

# MHAS Timeline – Biomarkers Sub-Samples



# Genetics Biomarkers

- DNA extracted from EDTA samples in Mexico (n=2,759).
  - Sent to the Taub Institute at Columbia University.
  - GWAS for risk of Alzheimer's disease conducted in 2019.
  - Whole genome sequencing will be performed.
- Saliva samples from aged 60+ were obtained in 2018 (n=7,860) .
  - Samples shipped to the National Cell Repository for Alzheimer's Disease (NCRAD) at Indiana University.
  - GWAS for risk of Alzheimer's disease will be conducted.

# Other Biomarkers - Under Process

- Using the GWAS (from saliva 7,860 participants), whole genome sequencing will be obtained from a predetermined sub-sample.
- Using hair samples - metal exposure levels (lead, magnesium, mercury, manganese) will be measured in Mexico.

# Mortality

- Cumulative deaths to 2015, n=4,497
- Cumulative to 2018, n=5,616 (\*)
- Death rates of panel track death rates (age 50+ but not disaggregated).
- Next of kin interview
  - No unique ID to link to death registration
  - Pilot ongoing to try a matching algorithm - assess whether losses-to-follow up may be deaths