

## MASALA study measurements

Baseline Exam 1: October 2010-March 2013

Social Networks: September 2014-March 2018

Exam 2: September 2015-March 2018

Exam 1A: March 2017-March 2018 (new wave of recruitment)

Measure	Baseline n=906	SN n=766	Exam 2 n=749	Exam 1A n=258
<b>Questionnaire items*:</b>				
Demographic: age, sex, country of birth, marital status; religion	X			X
SES: education; family income; employment status; number supported, wealth status, medical care, medical insurance	X			X
India: state identification; Pakistan: province/territory	X			X
Acculturation: language used during visit; language spoken at home; English fluency, years in the U.S.; percent of life in the US; food eaten at home/restaurant, social/cultural gatherings; friends; traditional cultural beliefs scale; Acculturation strategies	X			X
Tobacco use; other tobacco products; 2 <sup>nd</sup> hand smoke	X		X	X
Alcohol use; frequency; type of alcohol	X		X	X
Medical history: emphysema, asthma, arthritis, DVT/PE, rheumatic heart disease, liver disease, kidney disease, HTN, DM, GDM, high cholesterol, cancer (type)	X			X
Weight: history at age 20, 40, last 3 years	X			X
OB/Gyn history: pregnancy, hysterectomy, oophorectomy, OCP use, menopause, HRT use, UTI, incontinence (stress vs. urge)	X			X
Acute medical history (past 2 weeks): cold, flu, infections, etc.	X			X
Family history (heart attack, stroke, diabetes)	X			X
Medication use (Rx, OTC, vitamins, supplements, ayurvedic)	X	X	(X)	X
Physical activity: Total Week Activity Survey (leisure-time exercise, occupational, volunteer, and transportation); walk score	X	X	(X)	X
Psychosocial: CES-D, Spielberger anxiety, anger, chronic burden, discrimination	X			X
Food frequency questionnaire—total calories, macronutrients; 3 dietary patterns; AHEI-2010; vegetarianism; DASH diet score	X	X	(X)	X
Berlin sleep scale	X			
Neighborhood: Length of time in neighborhood, feeling about neighborhood, safety, environment	X			X
Census tract geocoded variables (linked with ACS data)**	X			X
Social networks: 5 closest alters & 5 institutions (details below)		X		
Number and ages of sons and daughters			X	X
Language preference—spoken at home, reading, TV			X	X
Spirituality questionnaire† (Harvard)			X	X
Childhood trauma (emotional abuse, neglect, physical neglect)			X	X
Psychosocial measures: SF-12 (PCS and MCS subscales)			X	X
Mental health inventory (MHI3 depression score)			X	X
General health follow-up (annual phone/email survey)			X	

	Baseline	SN	Exam 2	Exam 1A
<b>Physical Exam measurements:</b>				
Weight, height, waist circumference, hip circumference	X	X	X	X
Seated blood pressure	X	X	X	X
Ankle brachial index	X			
<b>Tests/Procedures:</b>				
12-lead electrocardiogram (not coded)	X			
Cardiac CT (total CAC score, CAC volume, calculated density)	X (899)		X (703)	X (257)
Advanced CAC characteristics (plaque density, segmentation)	X		X	X
<b>Carotid intima media thickness (common and internal carotid)</b>	X			
<b>Fasting laboratory tests:</b>				
Glucose (Quest serum)	X		X	X
Insulin (Univ MN)	X		Planned	Planned
Urea Nitrogen (Quest)	X		X	X
Creatinine, BUN (Quest)	X		X	X
Liver enzymes: ALT/AST/GGT (Quest)	X		X	X
Uric Acid (Quest)	X		X	X
LDH (Quest)	X		X	X
Cholesterol: total, HDL, triglycerides, LDL, VLDL (Quest)	X		X	X
Electrolytes: sodium, potassium, bicarbonate, chloride (Quest)	X		X	X
Calcium, magnesium, phosphorous (Quest)	X		X	X
Total protein, albumin, globulin (Quest)	X		X	X
Total bilirubin (Quest)	X		X	X
Alkaline Phosphatase (Quest)	X		X	X
Iron (Quest)	X		X	X
HbA1c (Quest)	X		X	X
<b>Oral glucose tolerance test:</b> (only among those not taking diabetes meds)				
Fasting, 30- and 120-minute glucose (Quest)—plasma	X		X	X
Fasting, 30- and 120-minute insulin (Univ MN)--serum	X			
Disposition index—calculated	X			
HOMA-IR, HOMA-beta cell—calculated	X			
<b>Novel serum/plasma tests (fasting):</b>				
hsCRP (Univ Vermont)	X			
Lp(a) (Univ MN)	X			
Adiponectin (Univ Vermont)	X			
Resistin (Univ Vermont)	X			
Leptin (Univ Vermont)	X			
TNF-alpha (Univ Vermont)	X			
Microalbuminuria (ACR) (Univ Vermont)	X			
<b>'omics biomarkers:</b>				
Telomere length† (BWH/Harvard)	X (699)			
Low-pass DNA sequencing (Spectrum/Gencove)	X (809)		X	X (225)
EWAS† (Columbia)	Pilot (288)			
Proteomics† (SOMAscan/Harvard)	Pilot (100)			

<b>Metabolomics:</b> (Imperial College/NPC)	<b>Baseline</b>	<b>SN</b>	<b>Exam 2</b>	<b>Exam 1A</b>
NMR-41 targeted small molecules	X (741)			
NMR-112 Bruker lipoprotein subfractions	X (741)			
LCMS-41 targeted small molecules, 217 complex lipids	X (722)			
NMR and LCMS-untargeted metabolomics	X			

<b>Ectopic fat from CT scans:</b>				
Abdominal visceral, subcutaneous, intermuscular fat area (UCSD)	X			
Hepatic attenuation (Vanderbilt)	X			X
Pericardial fat volume (Vanderbilt)	X			
Lean abdominal muscle mass area (UCSD)	X			

<b>Social Network Measurements</b>				
Network size		X		
Network density		X		
Kin-nonkin density		X		
Proportion of kin in network		X		
Proportion female in network		X		
Proportion South Asian in network		X		
Closeness to network members		X		
Volume of contact with network members		X		
Discussion of health problems with network members		X		
Social support: emotional, instrumental,		X		
Social isolation		X		
Closeness to South Asian community		X		
Closeness to American community		X		
South Asian Identity		X		
American Identity		X		
Alter diet (perception of ego)		X		
Alter exercise (perception of ego)		X		
Affiliations to South Asian organizations		X		
Affiliation exposure		X		
Perception of body size norms of network		X		
Perception of self body size norms		X		

\*all questionnaire items will require exact variable name in analysis plan—check annotated forms

\*\*please contact Ann Chang for full list of GIS variables available

†indicates measure done within a consortium; data use will require additional approvals

**Yellow highlight** indicates measures that were either not obtained in MESA, or done measured by a different protocol/reading center

(X) indicates that this questionnaire may have been done in context during Exam 2 if the participant did not complete the SN visit before Exam 2.

## MASALA Study Timeline

<b>Baseline Exam 1</b>	<b>SN exam</b>	<b>Exam 2/SN</b>	<b>Exam 1A</b>	<b>(Exam 3/1A)</b>
Oct 2010-March 2013	Sept 2014- March 2018	Sept 2015- March 2018	March 2017- March 2018	(2022-2024)