



**Collaborative Health Studies Coordinating Center**

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The Multi-Ethnic Study of Atherosclerosis (MESA) is a study of the characteristics of subclinical cardiovascular disease (disease detected non-invasively before it has produced clinical signs and symptoms) and the risk factors that predict progression to clinically overt cardiovascular disease or progression of the subclinical disease. MESA researchers study a diverse, population-based sample of 6,814 asymptomatic men and women aged 45-84. Approximately 38 percent of the recruited participants are white, 28 percent African-American, 22 percent Hispanic, and 12 percent Asian, predominantly of Chinese descent. The cohort was recruited from six Field Centers (Wake Forest University, Columbia University, Johns Hopkins University, University of Minnesota, Northwestern University, and UCLA) and characterized with respect to coronary calcification, ventricular mass and function, flow-mediated endothelial vasodilation, carotid intimal-medial wall thickness and presence of echogenic lucencies in the carotid artery, lower extremity vascular insufficiency, arterial wave forms, electrocardiographic measures, standard coronary risk factors, sociodemographic factors, lifestyle factors, and psychosocial factors. Selected repetition of subclinical disease measures and risk factors allowed study of the progression of disease. Blood samples were assayed for putative biochemical risk factors and stored for case-control studies. DNA was extracted and lymphocytes immortalized for study of candidate genes and genome-wide scanning. Participants have been followed for identification and characterization of cardiovascular disease events, including acute myocardial infarction and other forms of coronary heart disease (CHD), stroke, and congestive heart failure; mortality; and for cardiovascular disease interventions.

We propose to ascertain COVID-19 occurrence in MESA, a general population-based sample of now elderly adults. We will do this by telephone survey in approximately 4,000 remaining participants on study using a structured interview and abstraction of medical records according to predefined definitions of severity in positive cases, taking advantage of well-established data collection procedures in both cohorts. In addition, we will obtain lung images of cases in order to employ innovative deep learning approaches to clinical lung imaging. The previously obtained covariate data that characterizes these two cohorts will support analysis of hypotheses related to clinical, subclinical, and risk factor predictors of COVID-19 occurrence and severity. The results will provide much needed knowledge about how COVID-19 infection affects individuals with and without underlying lung and heart diseases and thereby help to inform public health strategies for COVID-19 risk mitigation as well as future therapeutic and prevention trials.

Please contact MESA Coordinating Center Project Director, Craig Johnson (wcraigj@uw.edu) should you have questions. He will respond to inquiries himself or when necessary will forward to appropriate MESA Investigators.