

NIH funded studies on diabetes and related conditions among Asian-American, Native Hawaiian and Pacific Islander populations

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NIH Advisory Council, National Institute on Minority Health and Health Disparities
National Institutes of Health (NIH) Council of Councils



NIMHD's Mission

- ❖ NIMHD's mission is to lead scientific research to improve minority health and reduce health disparities. To accomplish this, NIMHD:
- ❖ Plans, coordinates, reviews, and evaluates NIH minority health and health disparities research and activities
- ❖ Conducts and supports research in minority health and health disparities
- ❖ Promotes and supports the training of a diverse research workforce
- ❖ Translates and disseminates research information
- ❖ Fosters innovative collaborations and partnerships

Minority Health & Health Disparities Research Framework

Fundamental Factors: Race/Ethnicity, Low Socioeconomic Status, Rural

Domains of Influence	Levels of Influence			
	Individual	Interpersonal	Community	Societal
Biological	Vulnerability Mechanisms	Caregiver-Child Interaction Family Microbiome	Infectious Disease Prevalence Herd Immunity	Sanitation Immunization Pathogen exposure
Behavioral	Health Behaviors Coping Strategies	Family Function School/Work Function	Community Function	Welfare Immigration Language
Physical Environment	Personal Environment	Household School Work	Community Environment, Resources	Government Education Housing
Sociocultural Environment	Sociodemographic Cultural Identity Discrimination	Networks Family/Peer Discrimination	Community Norms Discrimination	Societal Norms Structural Discrimination
Healthcare System	Access Congruent w/Patient	D/P Relationship Collaborative care	Availability Health Services	Quality of Care HC Policies
Health Outcomes	Individual Health	Family Health	Community Health	Population Health



Completed diabetes related studies among AANHPI populations

- ❖ *Partnerships to Improve Lifestyle Interventions (PILI) O'hana Dissemination Project* (Koholokula, Univ of Hawaii)
- ❖ *Causes of Asian American Mortality Understood by Socio-Economic Status* (Palaniappan, Stanford)
- ❖ *Adapting an Automated Telephone Support Program to Prevent Type 2 Diabetes* (Handley, Univ of California San Francisco)
- ❖ *Disparities in Chronic Illness Care for Patients with Language Barriers* (Morales, Group Health Cooperative)

Completed diabetes related studies among API populations

- ❖ *A Biobehavioral Model of Diabetes Risk in Chinese Immigrants* (Fang, Research Institute of Fox Chase Cancer Center)
- ❖ *Brain-Gut Microbiome-Visceral Adiposity Relationships in Multiethnic Adults* (U. Lim, Univ of Hawaii)
- ❖ *Applying Virtual Social Networking to Diabetes Prevention for Filipino Americans* (Fukuoka, UCSF)
- ❖ *Hawaii Asian and Pacific Islander Diabetes Study* (Waitzfelder)

Number of NIH funded grants on diabetes and related conditions among AANHPI populations (n=25)

By NIH Institute:

National Institute on Minority Health and Health Disparities (NIMHD): 10

National Institute on Diabetes, Digestive and Kidney Diseases (NIDDK): 8

4 US-based studies; 4 international studies

National Heart, Lung, and Blood Institute (NHLBI): 5

National Institute of Child Health and Human Development (NICHD): 1

National Institute of General Medical Sciences: 1

Etiology, Omics, Mechanisms

1. *Ola Hawaii* : U54 NIMHD, Hedges, Univ of Hawaii Manoa
 - 1.a. *Social ImmunoEpigenetic Conditioning of Diabetes Disparities*
Multiethnic Cohort Study: **Native Hawaiian** and **Japanese** (Maunakea)
 - 1.b. *Multiethnic genome-wide Association Studies and Gene-Environmental Studies of Obesity and Type 2 Diabetes*
MEC: Native Hawaiian and **Japanese** (Wu)
2. *Center of Biomedical Research Excellence (COBRE) in Diabetes Mellitus*
NIGMS P20 Gerschenson, Univ of Hawaii Manoa
 - 2.a *Identifying the Immunoepigenetic signature of type 2 diabetes*
Native Hawaiians and Pacific Islanders, Corley, Univ of Hawaii

Etiology, Omics, Mechanisms

3. *Impact of the Obesity Risk CREBRF P.AR457GLN Variant on Energy Expenditure, Intake, and Substrate Utilization in [Samoans](#)*
NHLBI R01, McGarvey, Brown Univ
4. *Integrated Cellular, Mouse and Human Research on a Novel Missense Variant Influencing Adiposity in [Samoans](#)*
NHLBI R01, McGarvey, Brown Univ
5. *Next Generation Association Studies of Adiposity in [Samoans](#) Enhanced by a Samoan-Specific Whole Genome Sequence Reference Panel (NHLBI, R01, Minster, Univ of Pittsburgh)*
6. *Circulating microRNAs and Hyperglycemia [Japanese](#), NIDDK K08, Wander, Univ of Washington)*

Etiology, Omics, Mechanisms - International Studies

7. *Transition to a Western Diet and Cardiometabolic Risk Biomarkers Derived from the Microbiome (China Health and Nutrition Survey)*
NIDDK R01, Gordon-Larsen, Univ North Carolina, Chapel Hill
8. *Metabolite Profiles and the Risk of Diabetes in Asians*
Chinese, Shanghai, NIDDK R01, T. Wang, Vanderbilt
9. *Genetics of Type 2 Diabetes in Indian Populations: US-India Collaboration Project*
NIDDK R21, Duggirala, Univ of Texas Rio Grande
9. *Association of Persistent Organic Pollutants with Incident Diabetes in India*
NIDDK R21, Narayan, Emory

Prevention, Behavioral Interventions

11. *Native-Controlling Hypertension and Risk Through Technology (NATIVE-CHART), NIMHD U54, Buchwald, Washington State Univ)*
- 11.a. *Engaging **NHPIs** and Activating Communities to take Steps (ENACT, Sinclair, Washington State Univ)*
12. *Increasing Physical Activity in **Filipino** Lay Leaders
NIMHD R15, Ceria-Ulep, Univ of Hawaii at Manoa*
13. *Taxi STEP (Social Networks, Technology, and Exercise Through Pedometers (**Bangladeshi, Indian, Pakistani**)
NIMHD U01, Gany, Sloan-Kettering Institute)*

Prevention, Behavioral Interventions

14. *Integrated Community-Clinical Linkage Model to Promote Weight Loss Among **South Asians** With Prediabetes*
NIDDK R01, Islam, New York Univ
15. *Healthy Bodies, Healthy Souls (in **Marshallese** churches)*
NIMHD R21, McElfish, Univ of Arkansas
16. *Obesity and Caries in Young **South Asian** Children: A Common Risk Factor Approach*
NIMHD R01, Karasz, Albert Einstein College of Medicine

Diabetes Management

17. New York University Center for the Study of Asian-American Health (NIMHD P60, Trinh-Shevrin, NYU)
 - 17.a. *Project 1 : Multi-level intervention to support to support **South Asians** with Uncontrolled Diabetes* (Islam, NYU)
18. *Lifestyle and Medication Management to Lower Diabetes Risk in Severe Mental Illness* (**Cambodian**, NIDDK R01, Wagner, Univ of Connecticut)
19. *Epidemiology and Management of Chronic Kidney Disease in **South Asians*** (NIDDK R23, Anand, Stanford)
Transnational: CARRS (New Delhi, Chennai and Karachi) and MASALA (San Francisco, Chicago)

Social Determinants

20. *Is Assimilation Costing Asian Americans Their Health? Type 2 Diabetes in California's Asian American Populations* (NIMHD R15, Chen, California State Univ, Fullerton, Source: California Health Interview Survey data, Chinese, Filipino, South Asian, Vietnamese, Korean, Japanese)
21. *Immigrant Enclaves: Conferring Health Advantages or Creating Health Disparities in Chinese Immigrants* (NIMHD R01, Fang, Research Institute of Fox Cancer Institute)

New and Continuing Cohorts

22. *Cardiovascular Disease Among **Asians** and **Pacific Islanders***
(Hawaii and Northern California NHLBI R01, Waitzfelder, Kaiser)
23. *A Cohort for Studying the burden of Cardiometabolic Diseases in **Guam** and **Pohnpei***
NIMHD U24, Paulino, Univ of Guam
24. *Dual Cohort Prospective Study of Obesity **Filipinos***, NICHD R01, Gee, UCLA
Transnational: new migrants to the US and Philippine residents
25. *Mediators of Atherosclerosis in **South Asians** Living in America (MASALA)*
NHLBI R01, Kanaya, UC San Francisco, 2nd follow up visit

Relevant studies in Murine Models

- ❖ Impact of CREBRF and its obesity risk variant on hypothalamic, glucocorticoid, and Neuroendocrine output using molecular, cellular, and physiological approaches (murine model) (NIDDK K01, Frahm, Univ of Pittsburgh)
- ❖ Ginsenocide RB1: A Novel Anti-Obesity and Anti-Hyperglycemic Compound (NIDDK R01, Woods, Univ of Cincinnati)

Number of Studies by AANHPI Subgroup

	<u>Total</u>	<u>US and International Sites</u>
Asian American	1	
Asian/ Pacific Islander	1	
Cambodian	1	
Chinese	3	1 US, 2 China
Filipino	2	1 US, 1 Philippines
Guamanian	1	
Japanese	2	
Marshallese	1	
Native Hawaiian	3	
Samoan	3	
South Asian*	8	5 US, 3 India
(Bangladesh, Pakistan)	1	

9/25 (36%) are Native Hawaiian/Pacific Islander study populations

Koreans and Vietnamese are under represented in diabetes research



NIMHD Funding Opportunities

- ❖ Active Funding Opportunities
- ❖ Approved Research Concepts

<https://www.nimhd.nih.gov/funding/nimhd-funding/index.html>



NIMHD Active Funding Opportunities


Addressing the Etiology of Health Disparities and Health Advantages Among Immigrant Populations

Addressing Health Disparities through Effective Interventions Among Immigrant Populations

Understanding Factors in Infancy and Early Childhood That Influence Obesity Development

Diet and Physical Activity Assessment Methodology

Improving Patient Adherence to Treatment and Prevention Regimens to Promote Health



Active Funding Opportunities

Mechanisms and Consequences of Sleep Disparities

Mechanisms of Disparities in Chronic Liver Diseases and Cancer

Testing Interventions for Health-Enhancing Physical Activity

Health Services Research on Minority Health & Health Disparities

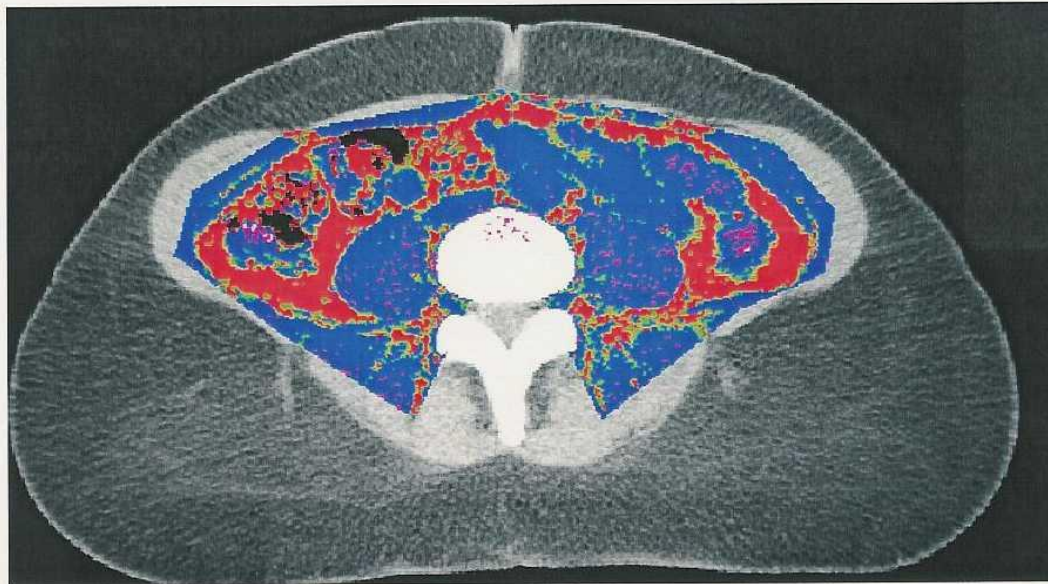
Social Epigenomics Research Focused on Minority Health and Health Disparities

Dissemination and Implementation Research in Health

CT-defined visceral adipose tissue: African American vs Filipina woman,

SUBJECT CODE: HASAAW092
AGE: 62
SEX: F
WEIGHT (LBS): 160
SUBJECT INITIALS: PC
DATE OF EXAM: 02/06/2002
VISCERAL FAT (CM3): 25.4
SUBCUTANEOUS FAT (CM3): 221.4
RATIO VF/SF: 0.13

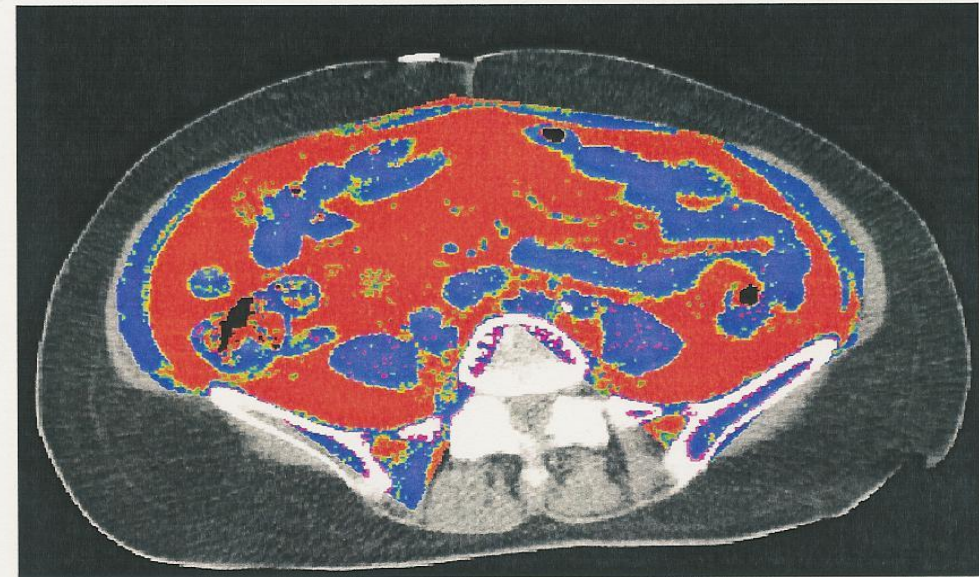
African-American



Weight: 160 lbs, Height: 5'7"
BMI=25 kg/m², VAT: 25.4cm³

SUBJECT CODE: FIRBOO215
AGE: 69
SEX: F
WEIGHT (LBS): 115
SUBJECT INITIALS: RM
DATE OF EXAM: 12/11/2001
VISCERAL FAT (CM3): 84
SUBCUTANEOUS FAT (CM3): 125
RATIO VF/SF: 67

Filipina



Weight: 115 lbs, Height: 5'4"
BMI=20 kg/m², VAT: 84.0 cm³