

Type 2 Diabetes in Asian Americans and “Screen at 23”



May 16, 2016

Hosted by the Health Committee of the
National Council of Asian Pacific Americans

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Housekeeping

- All participants are automatically **muted** by the webinar administrators.
- Throughout the webinar you may type in your questions under the questions feature box and we will answer as many questions as we can towards the **end** of the presentation.
- The webinar will be available on the APIAHF YouTube channel at:
www.youtube.com/apiahf



National Council of Asian Pacific Americans (NCAPA)



We are a coalition of national Asian American, Native Hawaiian and Pacific Islander organizations striving for equity and justice by organizing our diverse strengths to influence policy and shape public narratives.





NCAPA Policy Committees



Civil & Human Rights

Education

Health

Housing & Economic Justice

Immigration



Diabetes in Asian Americans



www.screenat23.org

The “Skinny” on the American Diabetes Association’s New Screening Guidelines for Asian Americans



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Testing for Type 2 Diabetes in Asymptomatic Individuals, ADA 2015 Guidelines

• Type 2 diabetes testing

- All adults who are overweight or obese (BMI ≥ 25 or ≥ 23 in Asian Americans) who have ≥ 1 diabetes risk factor
- Test starting at age 45, especially if overweight or obese
- If normal results: repeat testing in ≤ 3 -yr intervals

Diabetes Risk Factors

- Physical inactivity
- First-degree relative with diabetes
- High-risk race/ethnicity
- Women who delivered a baby > 9 lb or were diagnosed with GDM
- HDL-C < 35 mg/dL \pm TG > 250 mg/dL
- Hypertension ($\geq 140/90$ or on therapy)
- A1C $\geq 5.7\%$, IGT, or IFG on previous testing
- Conditions associated with insulin resistance: severe obesity, acanthosis nigricans, PCOS
- CVD history



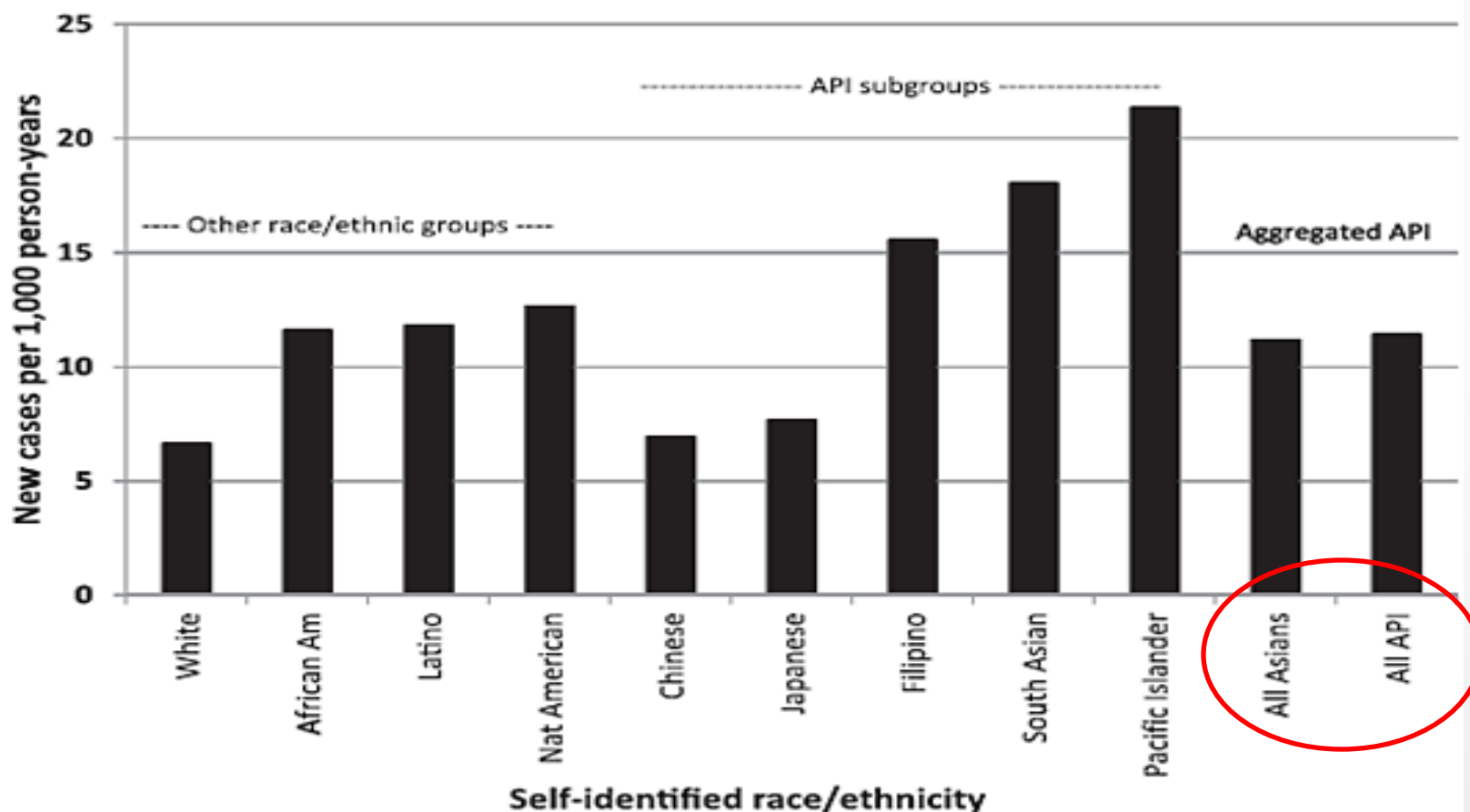
Prevalence of Type 2 Diabetes in 2,123,548 Adult Members in 2010. Kaiser Permanente Northern California

<u>Race /Ethnicity</u>	<u>Prevalence (%)</u>
Pacific Islander	18.3
Filipino	16.1
South Asian	15.9
Latino	14.0
African American	13.7
Native American	13.4
Southeast Asian	10.5
Japanese	10.3
Vietnamese	9.9
Korean	9.9
Chinese	8.2
White	7.3



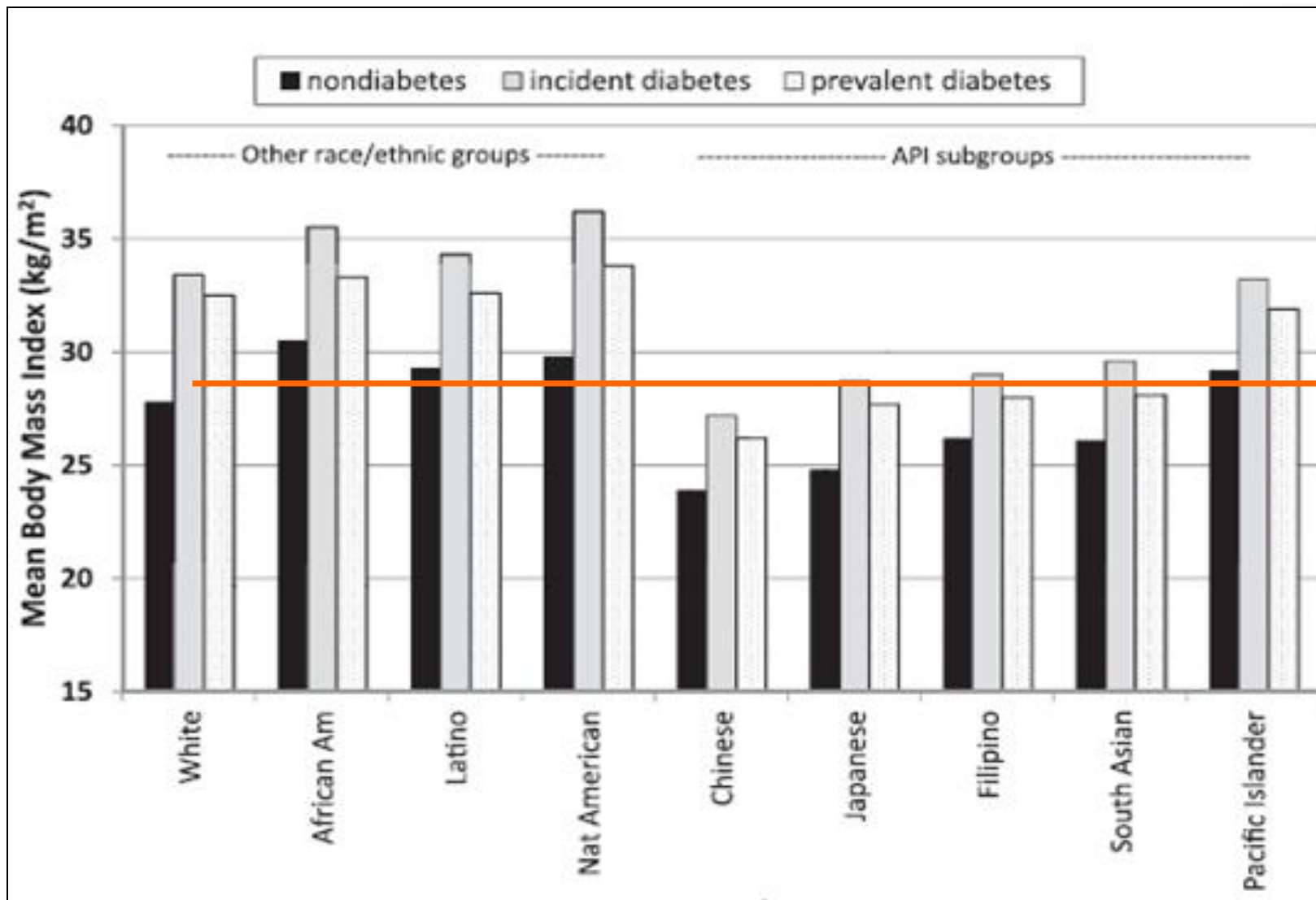
Standardized Diabetes Incidence (per 1,000 Person-years) Among 16,283 Adults Diagnosed with Incident Diabetes in 2010, Kaiser Permanente Northern California

Elevated rates of diabetes in Asian subgroups





Body Mass Index (BMI) Among 1,704,363 Adult Members, by Race and Diabetes Status, 2010, Kaiser Permanente Northern California



Body mass index
22.3 22.3

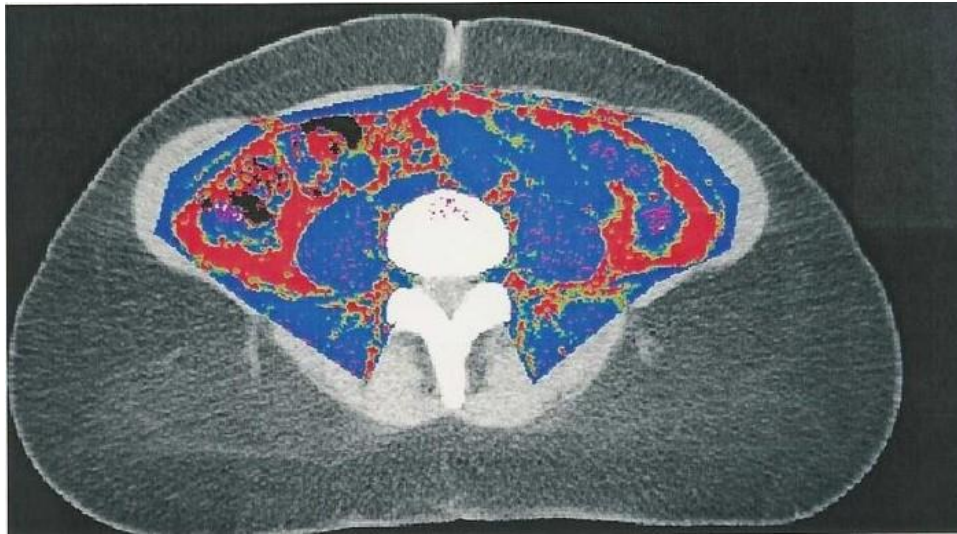


Body fat
9.1% 21.2%

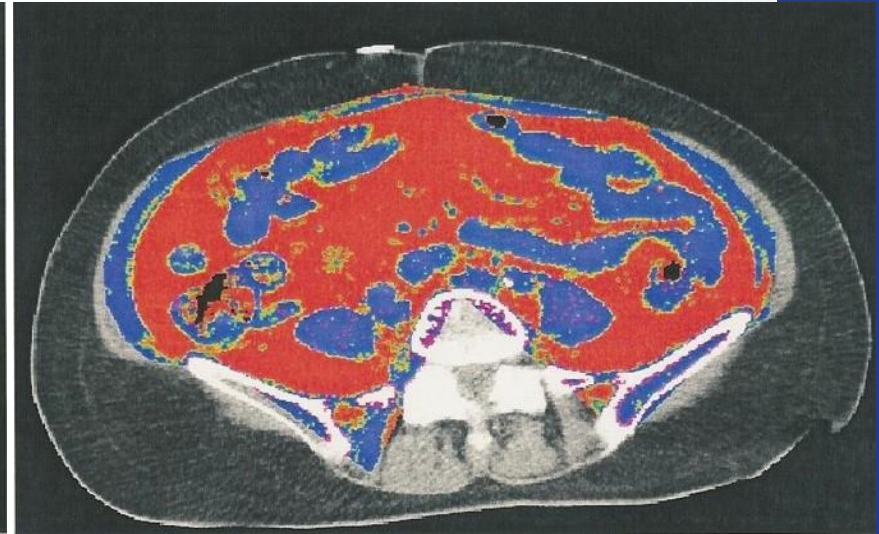
JS Yudkin and CS Yajnik, Lancet 2004; 363:157-63

Visceral Adipose Tissue (VAT) by Computed Tomography

African American vs Filipina Women



African-American, 62 yo
Weight: 160 lbs, Height: 5'7"
BMI=25 kg/m² **VAT: 25.4cm³**



Filipina-American, 69 yo
Weight: 115 lbs, Height: 5'4"
BMI=20 kg/m² **VAT: 84.0cm³**

2015 ADA Guidelines for Asian Americans

- Background

- Previous ADA guidelines recommended type 2 diabetes screening for asymptomatic adults, ages ≥ 45 years, with BMI ≥ 25 kg/m² and one known risk factor, including Asian ethnicity.
- A sizeable proportion of Asian Americans develop type 2 diabetes at BMI < 25 kg/m² and might not be screened.

- Objective

- Identify optimum BMI cut points for type 2 diabetes screening among Asian-American adults (≥ 45 years) without a prior type 2 diabetes diagnosis

Methods: Study Population

1663 participants from

- The UCSD Filipino Health Study in San Diego, CA
- The North Kohala Study on the island of Hawaii
- Mediators of Atherosclerosis among South Asians Living in America (MASALA) Study in San Francisco, CA and Chicago, IL
- Seattle Japanese Diabetes Community Study in Seattle, WA

Methods: Study Population

- Self-reported Filipino, Japanese, South Asian, Chinese, Korean, and mixed Asian ancestry, without non-Asian admixture
- Ages ≥ 45 years
- No prior diagnosis of type 2 diabetes
- Concomitant measures of BMI and 75 gram two-hour Oral Glucose Tolerance Test (OGTT)
- Hemoglobin A1c (HbA1c) except among Filipino men (San Diego), Japanese (Seattle)

Methods: Clinical Measures

- 75 gram OGTT after 8 hour fast
- Fasting and 2-hour glucose by glucose oxidase method
- HbA1c by high performance liquid chromatography
- Height, weight
- Demographic characteristics:
 - Age, sex, self-reported ethnicity and admixture
- Type 2 diabetes by ADA 2010 criteria:
 *$HbA1c \geq 6.5\%$ or $FPG \geq 126\text{ mg/dl}$
or $PPG \geq 200\text{ mg/dl}$*

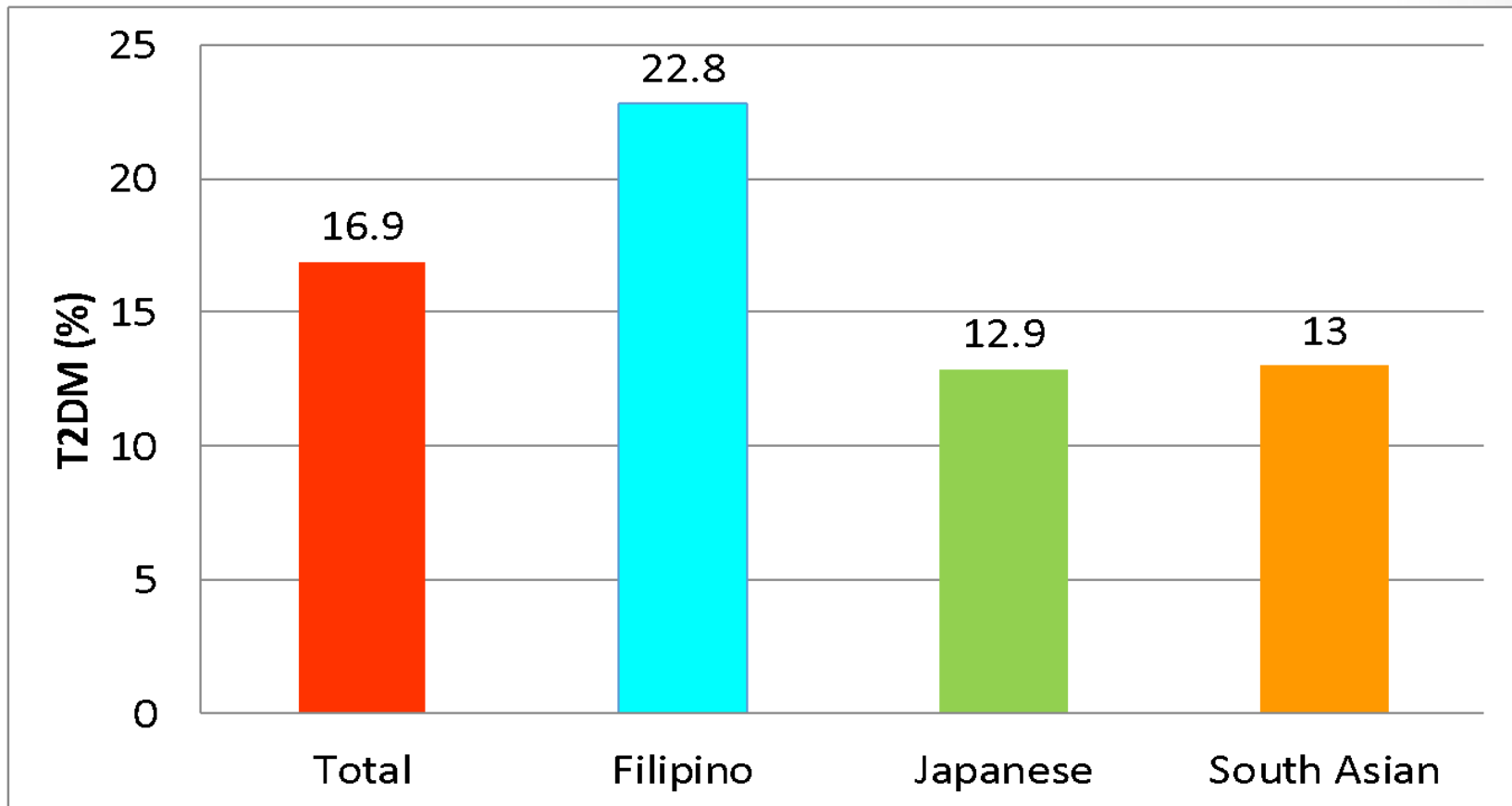
Methods: Statistical Analysis

- Receiver operating characteristic (ROC) curve analysis
- Calculated sensitivity, specificity, and positive predictive value
- Review of optimal BMI cut points included the following considerations:
 - Youden's index: $(\text{sensitivity} + \text{specificity} - 1)$
 - Misclassification rate:
 $\text{false positive rate} + \text{false negative rate}$
 - Sensitivity ~ Specificity
 - Targeted sensitivity = 80%

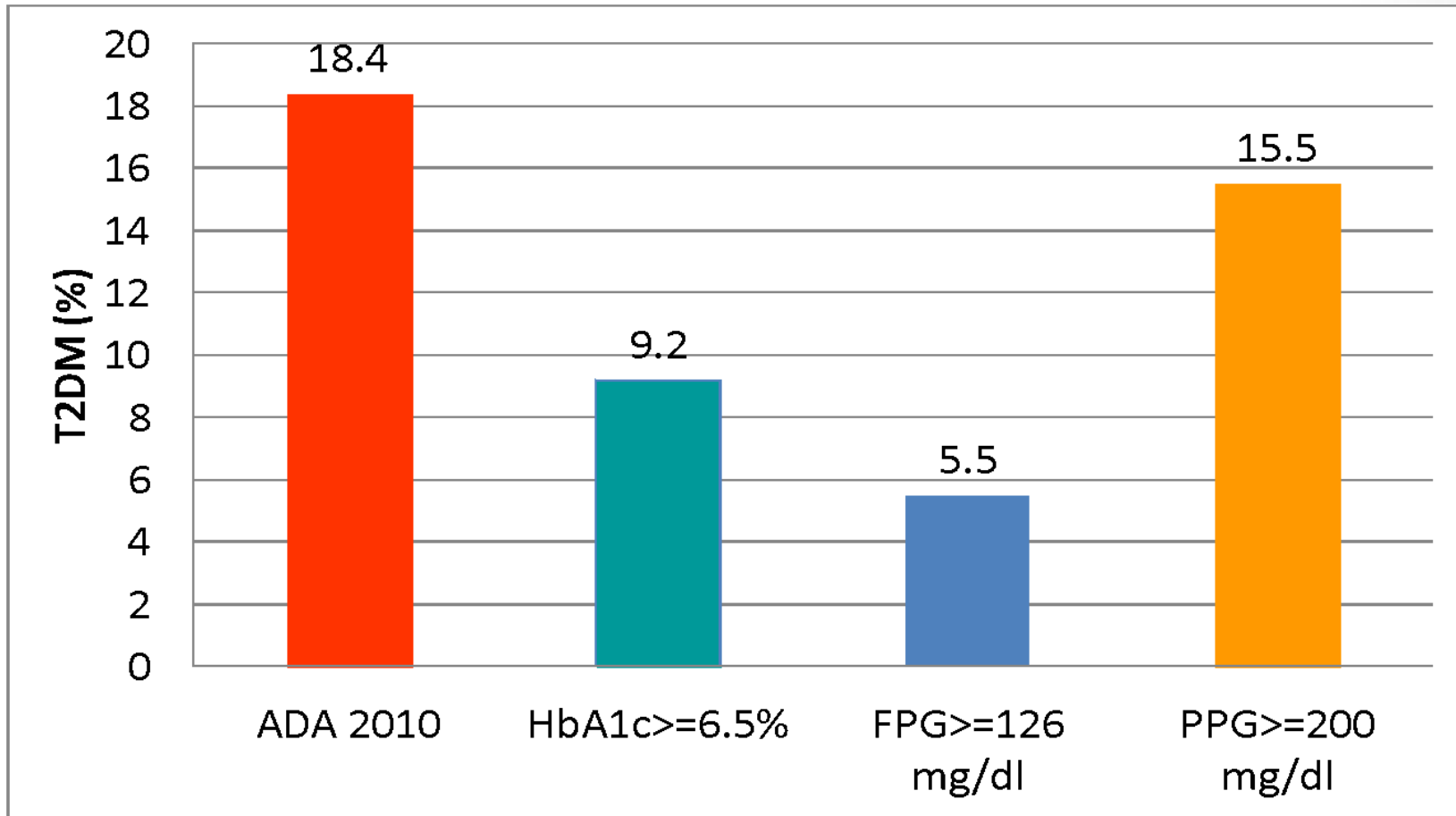
Demographic Characteristics

	N	%
Men	698	42%
Women	965	58%
Filipino (San Diego, Hawaii)	536	32%
South Asian (San Francisco, Chicago)	609	37%
Japanese (Hawaii, Seattle)	500	30%
Other Asian (Hawaii)	18	1%
	Mean	Standard Deviation
Age (years)	59.7	9.2
BMI (kg/m ²):	25.4	4.0
HbA1c (%)	5.7	0.84
Fasting plasma glucose (mg/dl)	100.5	19.3
2 hour plasma glucose (mg/dl)	148.1	58.3

Age-adjusted Type 2 Diabetes Prevalence by Asian-American Subgroup

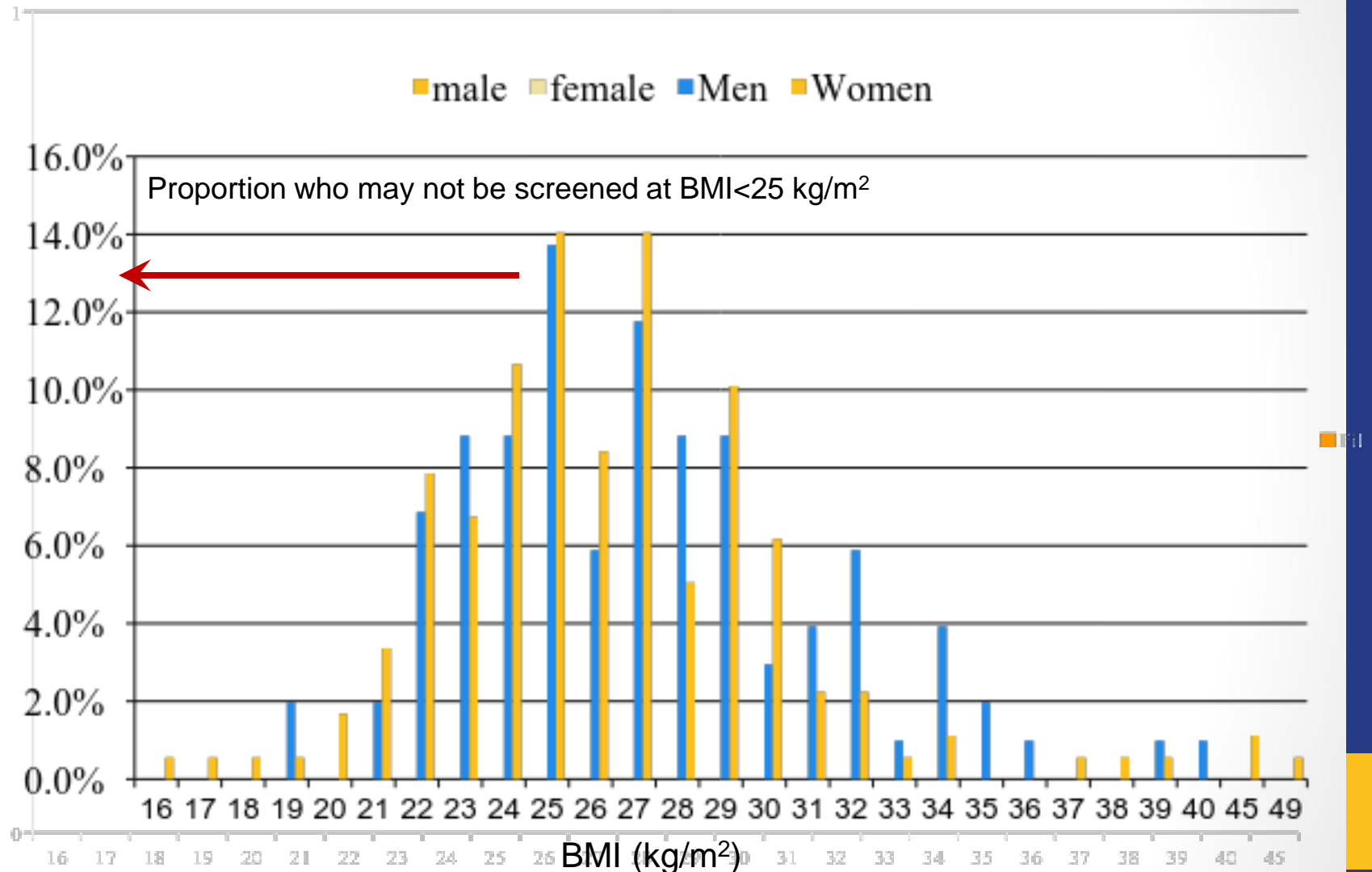


Age-adjusted Type 2 Diabetes Prevalence by Diagnostic Method (n=1214)



If screening limited to HbA1c and fasting glucose, almost half(44%) of Asian-Americans with type 2 diabetes might be undiagnosed

Percent distribution of Asian-Americans with newly diagnosed Type 2 Diabetes by Body Mass Index



37% of women and 21% of men with T2DM had BMI < 25 kg/m²

Type 2 Diabetes by BMI ≥ 25 kg/m² Cut Point

BMI (kg/m ²)	Type 2 diabetes	No diabetes	Total
≥ 25	179	730	907
< 25	102	652	756
Total	281	1382	1663

36% (n=102) of Asian Americans with type 2 diabetes might be undiagnosed if screening is limited to BMI ≥ 25 kg/m²

Sensitivity: $179/281 = 64\%$

Specificity: $652/1382 = 47\%$

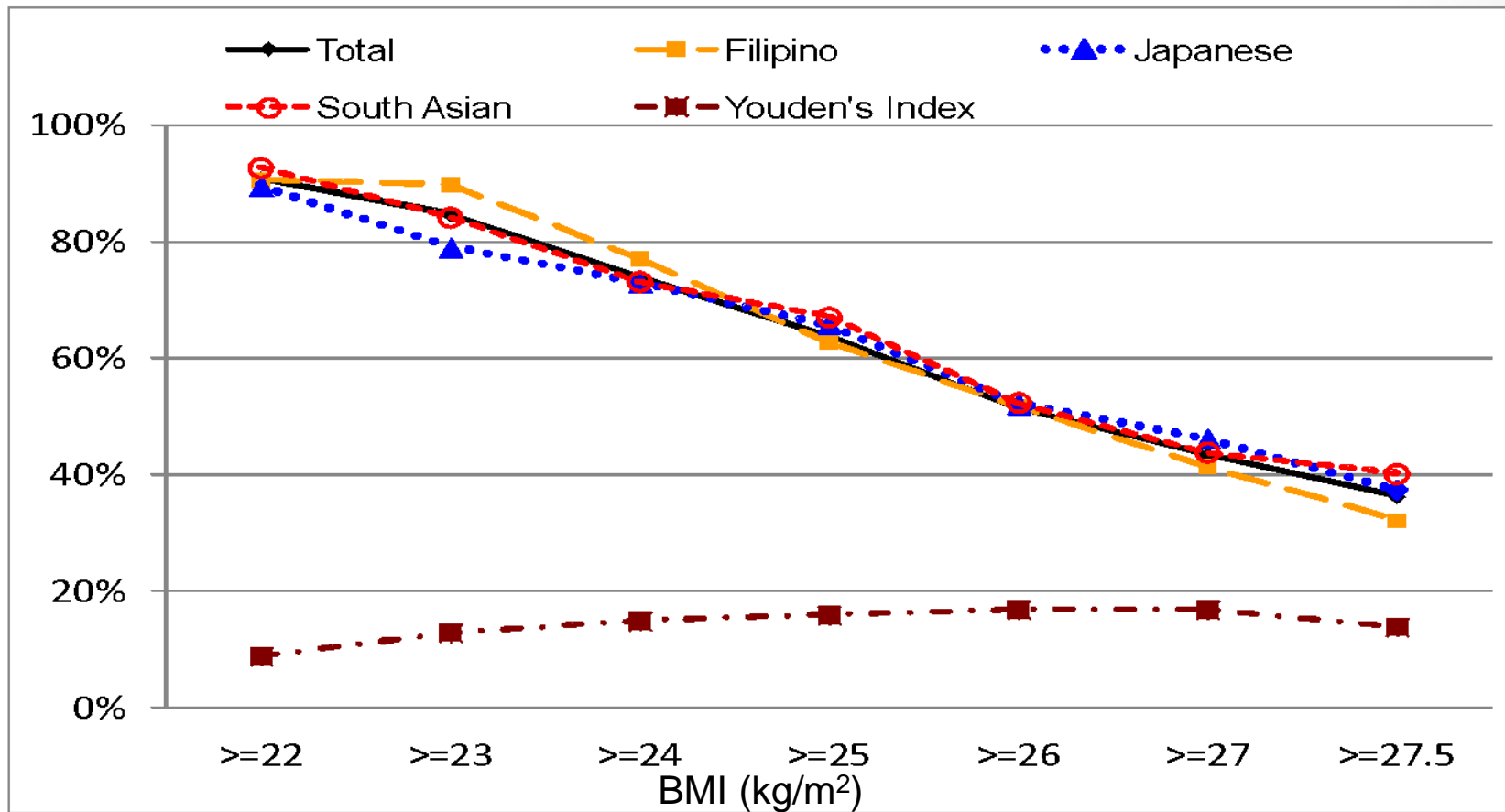
Youden's index: $(64\% + 47\%) - 1 = 11\%$

Misclassification rate: $102 / 281 + 730 / 1382 = 89\%$

Diabetes Prevalence, Sensitivity, and Specificity by BMI Cut Point, Asian-Americans, Ages ≥ 45 Years

BMI (kg/m ²)	Diabetes (%)	Sensitivity (%)	Specificity (%)	Misclassification Rate (%)
≥ 23	238 (14.3)	84.7	28.8	0.87
≥ 24	208 (12.5)	74.0	40.7	0.85
≥ 25	179 (10.8)	63.7	52.8	0.84
≥ 26	145 (8.7)	51.6	65.3	0.83
≥ 27	122 (7.3)	43.4	73.6	0.83
≥ 27.5	102 (6.1)	36.3	77.8	0.86

Sensitivity at Selected BMI Cut Points



Diabetes screening at a lower cut point of BMI ≥ 23 kg/m² should be considered and will enable early diagnosis and management

Optimal BMI Cut Points at Targeted Sensitivity of 80%

	BMI (kg/m²)	Sensitivity (%)
Total	23.5	80.3
Men	23.5	79.2
Women	23.5	78.9
Filipino	23.6	79.5
South Asian	23.4	79.4
Japanese	22.8	80.9

With a targeted sensitivity of 80%, the optimal BMI cut point is 23.5 kg/m²

Optimal BMI Cut Points at Targeted Sensitivity of 80%

T2DM diagnosis by:	BMI (kg/m²)	Sensitivity (%)
HbA1c \geq 6.5%	24.0	78.9
FPG \geq 126 mg/dl	23.4	79.1
PPG \geq 200 mg/dl	23.2	81.8

Summary and Conclusions

- Previous guidelines to screen adults with BMI ≥ 25 kg/m² fail to identify 1 of 3 of Asian-Americans with newly diagnosed type 2 diabetes.
- A BMI cut point of ≥ 23 kg/m² may be most practical for Asian Americans.
- Limiting screening to HbA1c and fasting glucose measures may fail to identify nearly half of Asian Americans with diabetes.

American Diabetes Association Revised Screening Guidelines, Effective January 2015

Diabetes Care Volume 38, January 2015

BMI Cut Points to Identify At-Risk Asian Americans for Type 2 Diabetes Screening

William C. Hsu,¹
Maria Rosario G. Araneta,²
Alka M. Kanaya,³ Jane L. Chiang,⁴
and Wilfred Fujimoto⁵

Diabetes Care 2015;38:1–9 | DOI: 10.2337/dc14-2391

ASIAN AMERICAN POPULATION

According to the U.S. Census Bureau, an Asian is a person with origins from the Far East (China, Japan, Korea, and Mongolia), Southeast Asia (Cambodia, Malaysia, the Philippine Islands, Thailand, Vietnam, Indonesia, Singapore, Laos, etc.), or the In-

Strengths and Limitations

Strengths:

- Population/community based samples
- Type 2 diabetes ascertained by HbA1c and OGTT among all participants

Limitations:

- Not representative of all Asian Americans (no OGTT measures among Chinese, Korean, Vietnamese cohorts)

Acknowledgements

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Diabetes in Asian Americans



www.screenat23.org



Edward A. Chow, M.D.
Co-Chair, AANHPI Diabetes Coalition



Who Are Asians?

- In 2014, we represented about 5.9% of the US population (18.5 million of 314.1 million) and are the fastest growing racial/ethnic group driven by immigration.
- The term “Asian” refers to a person with origins in the Far East, Southeast Asia, or the Indian subcontinent and includes, but is not limited to, Asian Indians, Cambodians, Chinese, Filipinos, Hmong, Japanese, Koreans, Pakistanis, and Vietnamese.
- The largest Asian American subpopulation is Chinese (23%), followed by Filipino (20%), Asian Indian (18%), Vietnamese (10%), and Korean (10%).

A SNAPSHOT

DIABETES IN THE UNITED STATES



DIABETES

29.1
MILLION

29.1 million
people have
diabetes



That's about 1 out of every 11 people



1
OUT
OF 4

do not know they
have diabetes

US 10 Leading Causes of Death in 2009

Caucasians

1. CVD
2. Cancer
3. Respiratory disease
4. Cerebrovascular disease
5. Accidents
6. Alzheimer's
- 7. Diabetes**
8. Influenza/pneumonia
9. Kidney disease
- 10. Suicide*

Asian/Pacific Islander

1. CVD
2. Cancer
3. Cerebrovascular disease
4. Accidents
- 5. Diabetes**
6. Influenza/pneumonia
7. Respiratory disease
8. Kidney disease
9. Alzheimer's disease
10. Suicide

Diabetes Prevalence in the U.S.

	Total (%)	Diagnosed (%)	Undiagnosed (%)	Prediabetes (%)	Mean BMI (kg/m ²)
Overall	14.3	9.1	5.2	38.0	28.7
White	11.3	7.5	3.8	38.2	28.4
Asian	20.6	10.0	10.6	32.2	24.6
Black	21.8	14.9	7.0	39.6	30.8
Hispanic	22.6	12.5	10.1	36.8	29.7

Sounding a Call to Action 2011 Symposium

Key collaboration with strategic partners

- “State of the Science” Diabetes Symposium in Honolulu
- Asian American, Native Hawaiian, and Pacific Islander Diabetes Coalition formed





THE ASIAN AMERICAN
NATIVE HAWAIIAN &
PACIFIC ISLANDERS
DIABETES COALITION

- **American Diabetes Association**
- **The Asian American Diabetes Initiative at Joslin Diabetes Center**
- **National Council of Asian Pacific Islander Physicians**
- **...and eighteen other national and regional organizations**

“Best of Care” at 2015 ADA in Boston

One of 9 most noteworthy articles published in Diabetes Care in 2014

814

Diabetes Care Volume 38, May 2015



Optimum BMI Cut Points to Screen Asian Americans for Type 2 Diabetes

Diabetes Care 2015;38:814–820 | DOI: 10.2337/dc14-2071

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OBJECTIVE

Asian Americans manifest type 2 diabetes at low BMI levels but may not undergo diagnostic testing for diabetes if the currently recommended BMI screening cut point of ≥ 25 kg/m² is followed. We aimed to ascertain an appropriate lower BMI cut point among Asian-American adults without a prior diabetes diagnosis.

BMI Cut Points to Identify At-Risk Asian Americans for Type 2 Diabetes Screening

Diabetes Care 2015;38:150–158 | DOI: 10.2337/dc14-2391

William C. Hsu,¹
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Testing for Type 2 Diabetes & Prediabetes in Asymptomatic Individuals

- Type 2 diabetes testing

- All adults who are overweight or obese (BMI ≥ 25 or ≥ 23 in Asian Americans) who have ≥ 1 diabetes risk factor
- Test starting at age 45, especially if overweight or obese
- If normal results: repeat testing in ≥ 3 -yr intervals

- Prediabetes testing

- A1C, FPG, or 2-h PG after 75-g OGTT
- Identify & treat (if appropriate) other CVD risk factors
- Consider testing in children and adolescents who are overweight/obese and have ≥ 2 diabetes risk factors

Diabetes Risk Factors

- Physical inactivity
- First-degree relative with diabetes
- High-risk race/ethnicity
- Women who delivered a baby > 9 lb or were diagnosed with GDM
- HDL-C < 35 mg/dL \pm TG > 250 mg/dL
- Hypertension ($\geq 140/90$ or on therapy)
- A1C $\geq 5.7\%$, IGT, or IFG on previous testing
- Conditions associated with insulin resistance: severe obesity, acanthosis nigricans, PCOS
- CVD history

Conclusions

- **The science shows that, when it comes to diabetes, Asian Americans ARE different.**
- **The guidelines now reflect this reality.**
- **Screening practices must change to reflect these guidelines.**

“Screen at 23” Campaign

SCREEN
AT 23



Purpose: Increase awareness and action among physicians, health authorities, and the general public of the appropriate screening guidelines for Asian Americans;

Organized by the National Council of Asian Pacific Islander Physicians, ADA and Joslin Diabetes Center and supported by the AANHPI Diabetes Coalition



(Screenat23.org)

2015



Diabetes
FORECAST®

Faces of Type 2: David Chu

- Launch of **Screen at 23** campaign with partners in Asian American Community to build awareness of the recommended **Body Mass Index for screening Asian Americans** for diabetes.

Campaign Progress



- First launched in San Francisco in October 2015
 - SF County Resolution, first Screen at 23 resolution

(SF Team)



- Publicly Endorsed by over 35 organizations and leaders
- Created the *Screen at 23 Package* including a type 2 DM diagnosis guide for doctors seeing Asian American patients (<http://screenat23.org/resources-and-news/>)

Medical Societies and Physician Associations



- Allied Pacific IPA (Southern California)
 - 2,000 physicians seeing over 300,000 patients
- Chinese American IPA (New York)
 - Largest IPA serving Asian Americans in New York City
- Hawaii IPA
- San Francisco Medical Society
- Philippine Medical Society of Northern California
- Chinatown Public Health Center (San Francisco)
- Chinese Community Healthcare Association (San Francisco)
- U.S. Burma Medical Society

Academic Institutions and Community Based Organizations

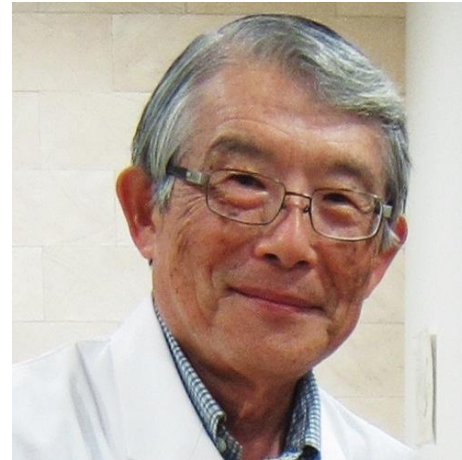


- National Council of Asian Pacific Americans (NCAPA)
- Asian Pacific Islander Health Forum (APIAHF)
 - Asian American Pacific Community Health Organizations (AAPCHO)
- University of Hawaii Medical School
- Asian American Research Center on Health at UCSF
- UCSD
- Stanford University
- Asian Health Coalition of Illinois
- Asian Pacific Communities in Action, Arizona (APCA)
 - Massachusetts Asian American Commission (AAC)

Resolutions



- SF County Resolution, October 20, 2015
- Hawaii Statewide Resolution SCR 49, May 2, 2016
 - "Having worked for many years advocating a lower BMI alert level for diabetes screening, I believe it is significant that the state with the highest proportion of Asians in its population can be the first to support a state-wide resolution that recognizes the importance of screening Asians for diabetes at BMI 23," said Dr. Wilfred Fujimoto.



- California State Resolution
SCR 143 currently being presented to Health Committee

SCREEN AT 23



“I urge the AAPI community to encourage family members, friends, and loved ones to get screened and be on alert for BMI number 23” - Congresswoman Judy Chu at Allied Pacific IPA members conference, November 16, 2015

Outreach to Patients, Media



- Newsletters featuring Screen at 23:
 - California Academy of Family Physicians (CME Spotlight newsletter)
 - Cal Optima Newsletter to MediCal and Medicare beneficiaries
- Live Events featuring Screen at 23
 - Massachusetts
 - Joslin Diabetes Center AADI's "A Taste of Ginger" and
 - Dim Sum for Diabetes event
 - Khmer Community Health Fair
 - Arizona - Asian Pacific Communities in Action's Diabetes Conference
- LA Times <http://www.latimes.com/health/la-me-asian-americans-diabetes-20160419-story.html>



(Screen at 23 in Arizona)

Partner Resources for Asian American Patients

From Joslin Diabetes Center's Asian American Diabetes Initiative:

Calculate your BMI

<http://aadi.joslin.org/en/am-i-at-risk/asian-bmi-calculator>

Drag N' Cook, get nutritional information on all your meals, online.

<https://dragncook.joslin.org/#/>

Diabetes-friendly Asian recipes: based on Joslin's traditional Asian diet study

<https://aadi.joslin.org/en/educationalmaterials/pan-asian-recipes>

Bilingual Materials in Chinese and English, from the Chinese Community Health Resource Center:

<http://cchrchealth.org/health/health-education-material/diabetes>

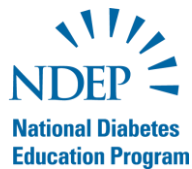
The CDC's National Diabetes Education Program (NDEP) provides tip-sheets, diabetes management resources, and nutrition guides in a multitude of Asian and Pacific Islander languages:

<http://www.cdc.gov/diabetes/ndep/communities/asian-hawaiian-pacific-islander/resources.html>

AANHPI Diabetes Coalition



THE ASIAN AMERICAN
NATIVE HAWAIIAN &
PACIFIC ISLANDERS
DIABETES COALITION



Joslin Diabetes Center
Asian American Diabetes Initiative



NCAPIP
National Council of Asian
Pacific Islander Physicians



**American
Diabetes
Association®**
Cure • Care • Commitment®



CHINESE HOSPITAL



CAIPA
亞美醫師協會



**HAWAII
Independent Physicians
ASSOCIATION**



**WAIANAЕ COAST
COMPREHENSIVE
HEALTH CENTER**
www.waiahealth.org



**ASIAN
HEALTH
COALITION**



**The Commonwealth of Massachusetts
Asian American Commission**



**For Additional
Information**



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