"Strategies to Increase Diabetes Screening Among Asian American Populations"

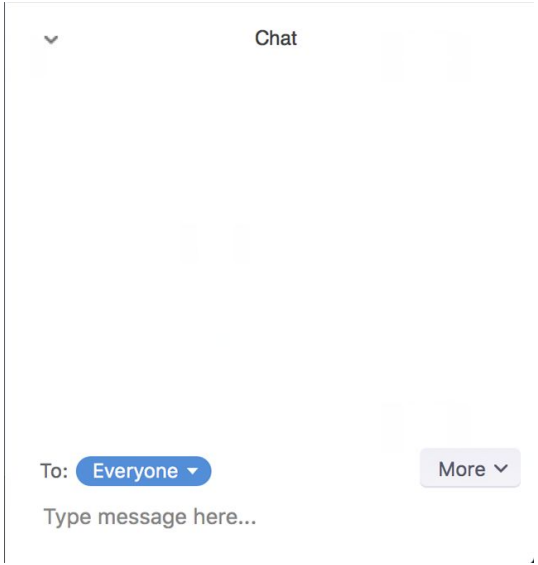
Session 2

Diabetes Screening Guidelines for AA Populations

March 15th, 2021

9-10:30am HT | 12-1:30pm PT | 3-4:40pm ET

Zoom housekeeping



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Moderators

Sakura Miyazaki
Program Manager, Training and Technical Assistance
Association of Asian Pacific
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Jen Lee
Deputy Director
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Associate Director, Training and Technical Assistance
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Overview of Learning Collaborative

- Four 90-minute sessions every Monday
  - Session 1: Overview of Diabetes Prevalence Amongst AA Populations
  - **Session 2: Diabetes Screening Guidelines for AA Populations**
  - Session 3: Implementing Diabetes Screening Protocols for AA Populations at Health Centers
  - Session 4: Direct and Indirect implications of Screening Protocols

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Today's Learning Objectives

- To learn the diabetes screening guidelines, specifically as it relates to AA patients
- To broadly increase knowledge of the research behind the screening guidelines for AA patients

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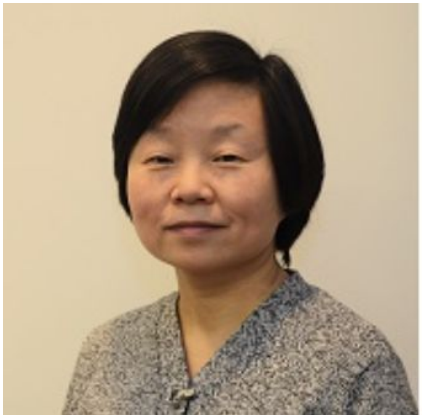
Panelists

George King, M.D.
Senior Vice President, Chief Scientific Officer, Joslin Diabetes Center, and Professor of Medicine and Ophthalmology, Harvard Medical School



Runhua Hou, M.D.
Endocrinologist at Asian American Diabetes Initiative, Joslin Clinic and Beth Israel Deaconess Medical Center and Assistant Professor of Medicine, Harvard Medical School

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Poll

Which of the following best describes your organization type?

- Community Health Center (FQHC, Look-Alike)
- Primary Care Association (PCA)
- National Training & Technical Assistance Partner (NTTAP)
- Health Center Controlled Network (HCCN)
- Government
- Academic Institution
- Social Service or Community-Based Organization (CBO)
- Other

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Agenda

- Introductions and reflections from session 1 (10 minutes)
- Presentation: Joslin Diabetes Center (50 minutes)
- Q&A/Discussion (25 minutes)
- Homework and preview of next session (5 minutes)

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What were your key takeaways from Session 1?

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Key points from Dr. Kanaya

- Need to raise awareness about **Screen at 23** guidelines—the sooner individuals are screened, the sooner they can gain access to preventive therapies, and support for lifestyle and behavioral changes.
- **Data disaggregation** remains a challenge for AA subgroups, and masks unique risks and prevalence among certain subpopulations.
- There is a current **overreliance on BMI** as a primary measure for diabetes risk--this masks key factors like location of fat storage that are strong indicators of diabetes risk.

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Diagnosis and Treatment of Diabetes in Asian-Americans

Runhua Hou MD and Dr. George L. King MD
AADI
Joslin Diabetes Center
Harvard Medical School
March 15, 2021

Joslin Diabetes

EDUCATE . COLLABORATE. EMPOWER.

Objectives

- Review the diagnosis of diabetes in Asian-Americans
- Understand the unique aspects of diabetes management in Asian-Americans
- Familiar with the challenges of diabetes management during pandemic

Two Main Types of Diabetes

Type 1 diabetes

5-10% of total
(Rare in Asians)

Common in children
(A Minority in East Asian Children)

Insulin Requiring
Auto-immune Destruction of the Islets, HLA DR3/4 or LADA
(0nly 1/3 of AA's)

Rare fulminating type in Asians

Type 2 diabetes

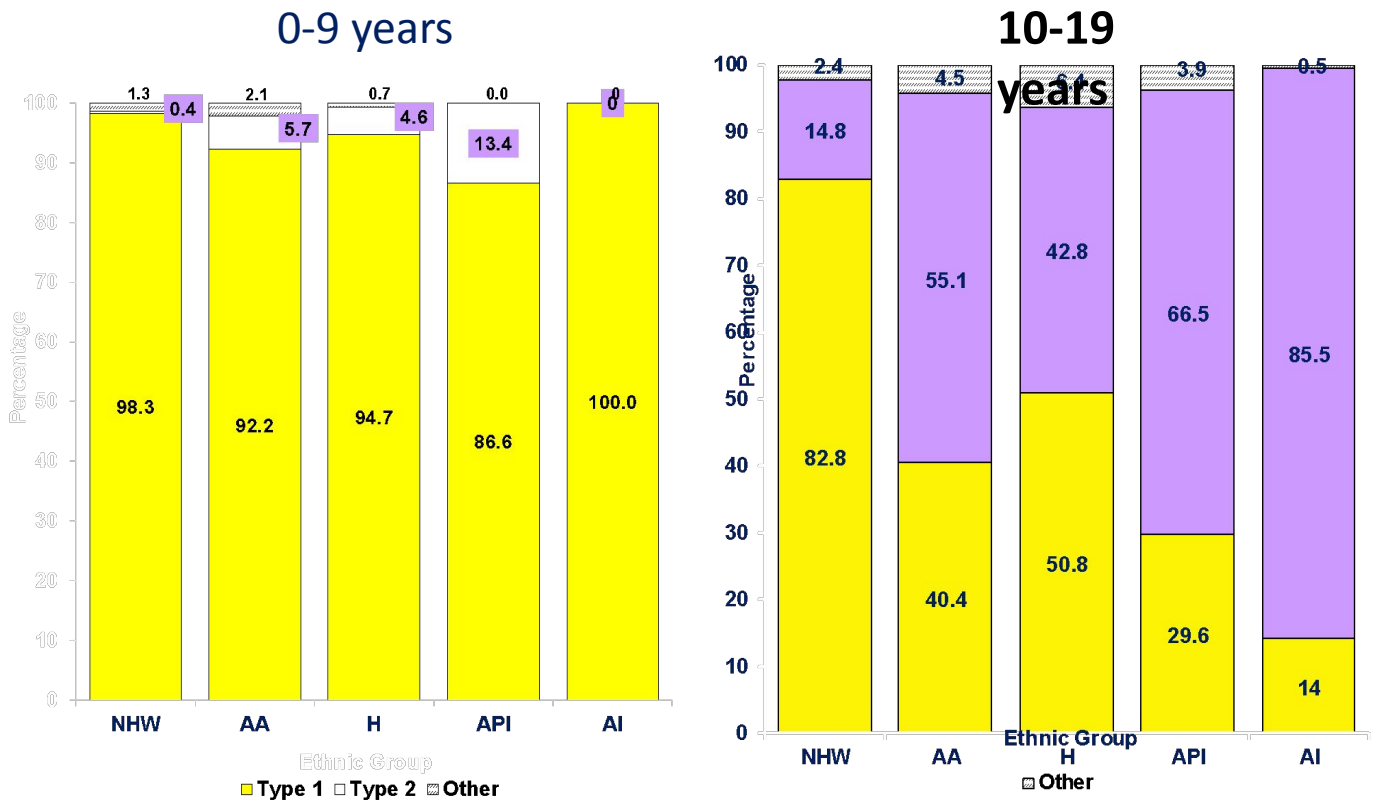
>90% of total (>95% in AA)

Mostly in adults,
but increasing in children

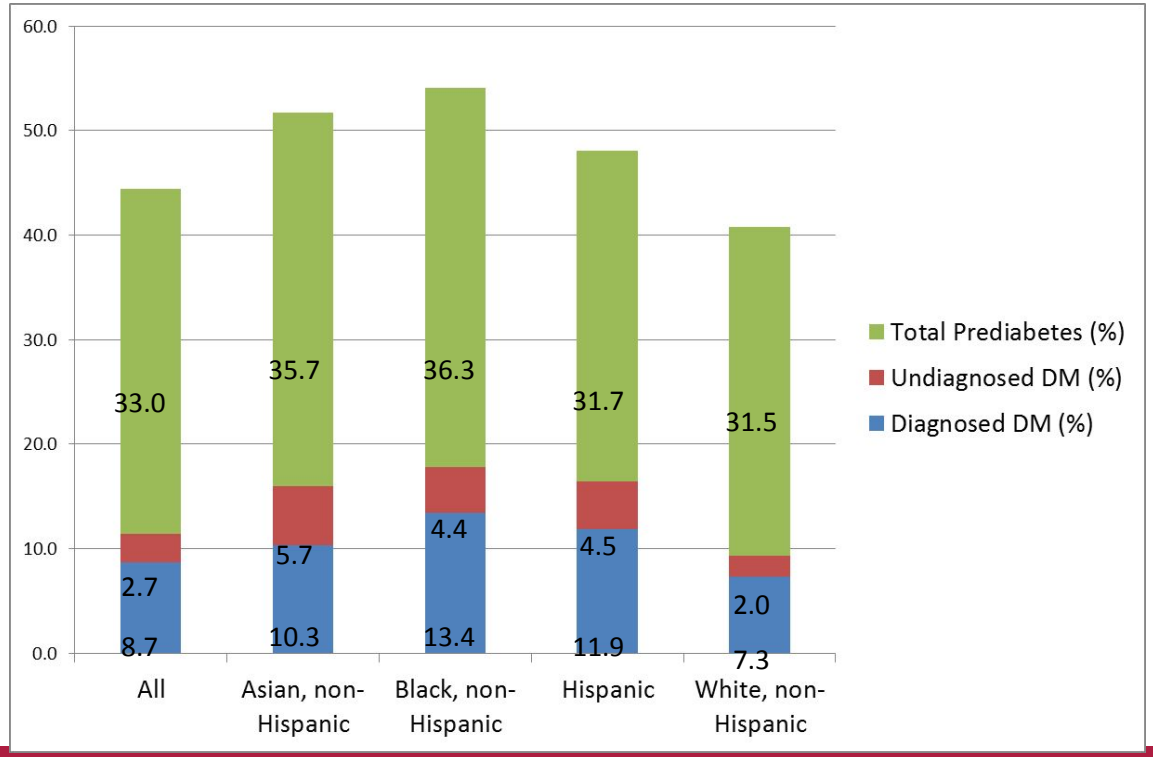
Not insulin requiring

Insulin resistant
associated with obesity ,
inflammation and inactivity
(Different definition of obesity and more severe in AA with normal BMI and NDM)

Distribution of Diabetes Type by Race/Ethnicity and Age Group at Diagnosis in Children (SEARCH Study)

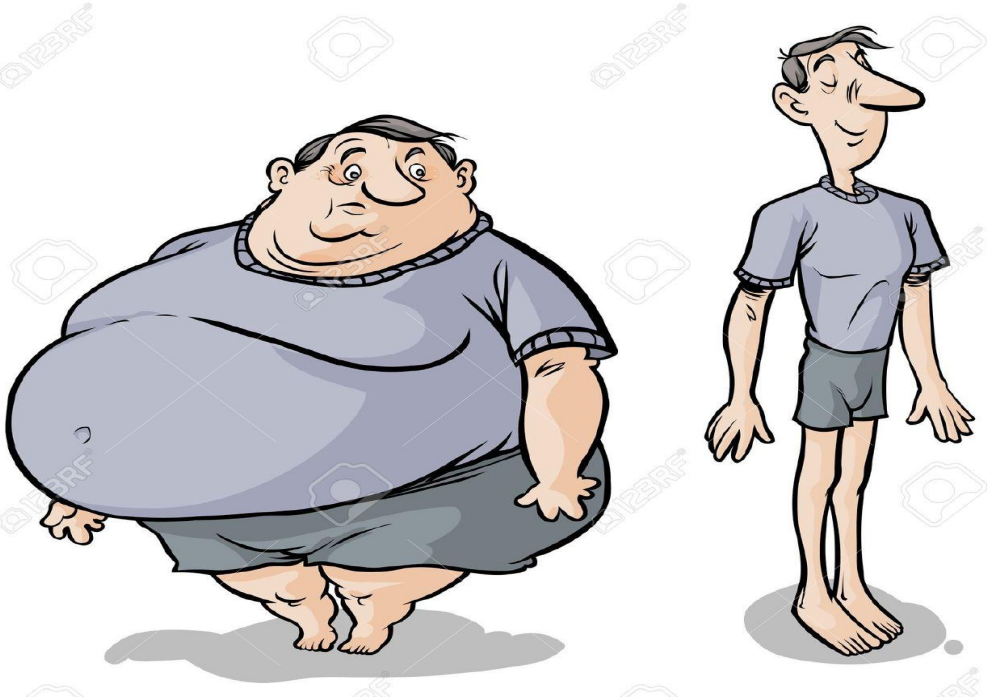


Age-adjusted Prevalence of Diagnosed & Undiagnosed Diabetes and Prediabetes among Adults aged ≥ 18, USA, 2011-2014

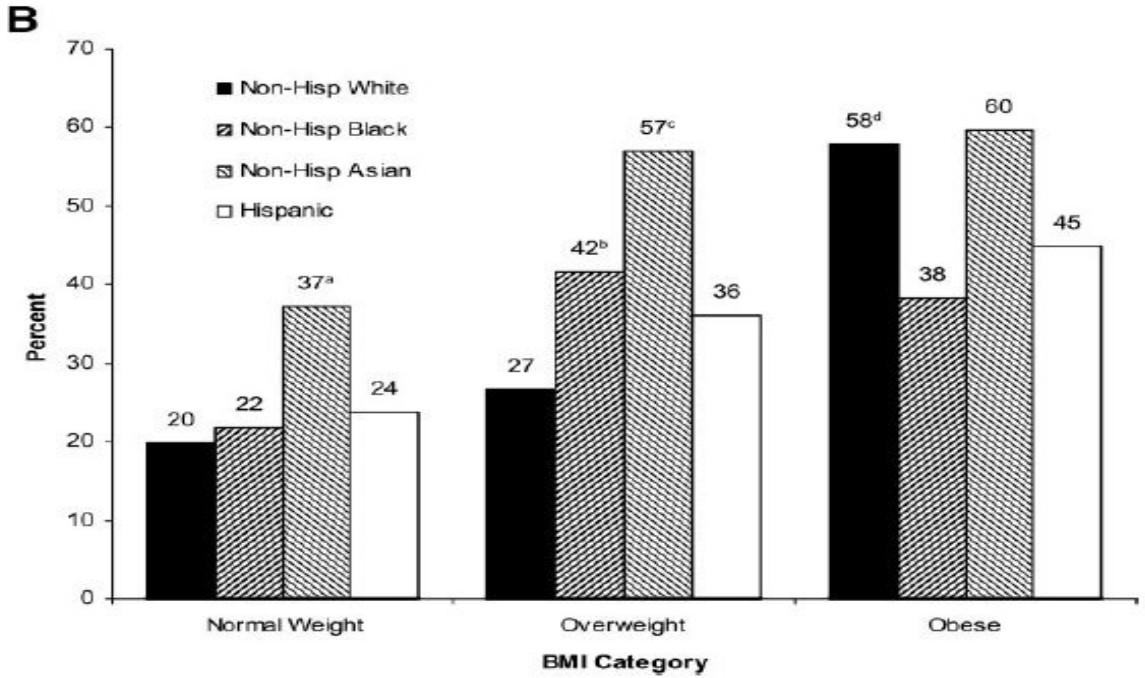


National Diabetes Statistics Report, 2017. CDC

Myth I: I am not overweight so I won't have diabetes



Asian had the highest prevalence of DM and IFG in NYC even with normal weight



Diabetes care 2009; 32:57-62

Diabetes occurs at a younger age and lower BMI in Asians in Ontario Canada

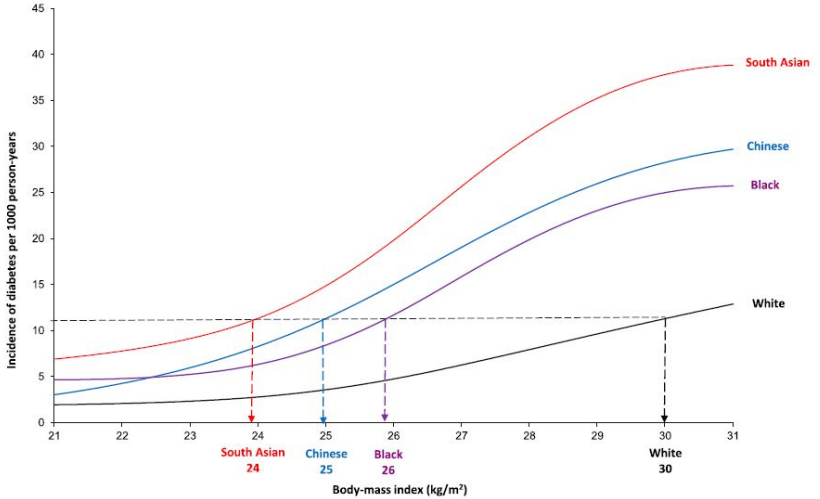


Figure 1—*Association between the incidence rate of diabetes and BMI by ethnic group. The multivariate Poisson regression model included age, sex, BMI, BMI-ethnicity interaction, age-BMI interaction, income adequacy, survey year, and urban versus rural dwelling. Four knots were used to generate the restricted cubic splines. All estimates were weighted by the survey sample weight to allow for estimates to be generalizable to the overall Ontario population. Data were derived from the Ontario components of Statistics Canada's NPHS and CCHS, 1996–2005.*

Race	Median Age of DM diagnosis
White	58
South Asian	49
Chinese	55
Black	57

Diabetes care. 2011;34:1741-8.

Not all Asians have same diabetes risk

Race	Diabetes risk (HR)
White	1
Chinese	1.87
Black	1.99
South Asian	3.4

Adjusted for age, sex, BMI, and sociodemographic characteristics

Diabetes care. 2011;34:1741-8.

Asian BMI Criteria

BMI 23

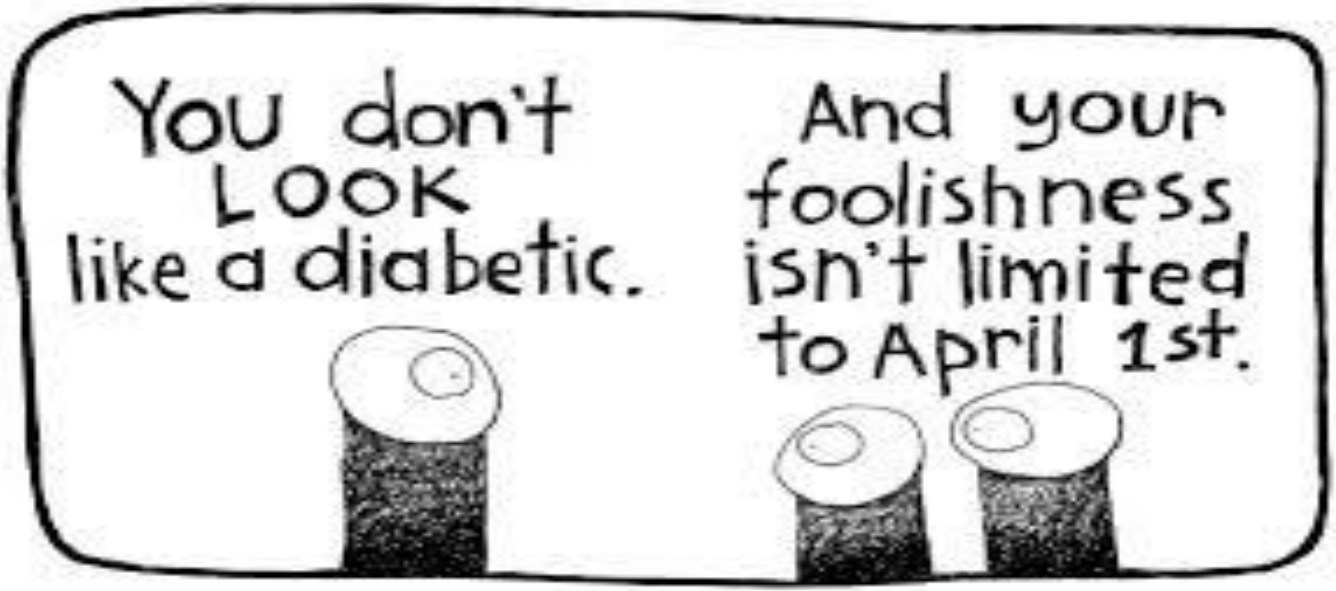
Table 1: Nutritional status based on the WHO and "Asian criteria" values		
Nutritional Status	WHO criteria BMI cut-off	"Asian criteria" BMI cut-off
Underweight	<18.5	<18.5
Normal	18.5 – 24.9	18.5 – 22.9
Overweight	25 – 29.9	23 – 24.9
Pre-Obese	-	25 – 29.9
Obese	≥30	≥30
Obese Type 1 (obese)	30 – 40	30 – 40
Obese Type 2 (morbid obese)	40.1 – 50	40.1 – 50
Obese Type 3 (super obese)	>50	>50

New American Diabetes Association Screening Diabetes BMI cut off

- BMI 23 for Asians
- BMI 25 for Caucasians

- If use BMI 25 for Asians, 36% Asians will not be diagnosed with diabetes
- Use BMI 23, only miss 15% of Asians with diabetes

Myth II:I don’t have symptoms of diabetes so I do not have diabetes.



Diagnosis of Diabetes in Asians

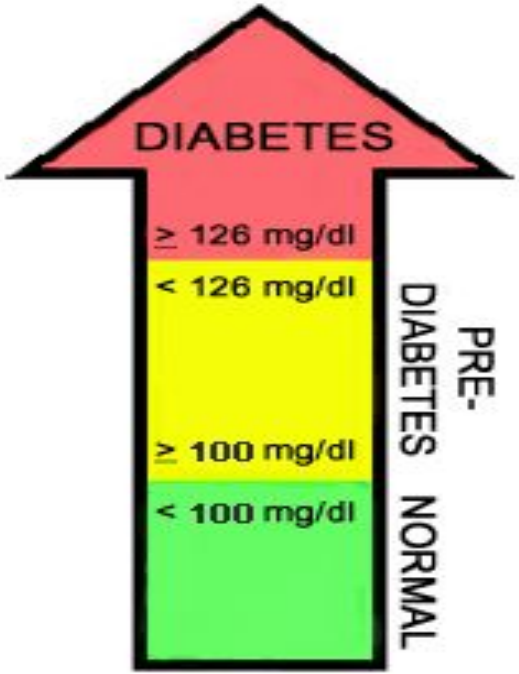
Classic symptoms

- Frequent urination
- Excessive thirst
- Eat more than usual
- Weight loss for no reason
- Frequent infections

- But very often patients may have no symptoms

Diagnosing: fasting blood glucose level

- **Diabetes**
  - Fasting blood glucose of 126 mg/dl or higher
- **Pre-diabetes (impaired fasting glucose)**
  - Fasting blood glucose of 100 - 125 mg/dl



Hemoglobin A1c

- Reflects average blood glucose level over the last 3 months.
- Limited by hemoglobin abnormalities, renal diseases, et al.
- Diagnoses only 30% of the diabetes cases identified collectively using A1C, FPG, or 2-h PG.

Diagnosis criteria:

- If A1c >6.5% = diabetes
- A1c between 5.7-6.4%= prediabetes

Diabetes Care 2010;33:562–568

Diagnosing: Oral Glucose Tolerance Test (OGTT)

- Normal: 2 hour glucose <140 mg/dl
- Impaired glucose tolerance (IGT): between 140-199 mg/dl
- Diabetes: >200 mg/dl

- Best test to identify those with postprandial hyperglycemia.
- If using HBA1c only, may miss 44% of patients with prediabetes, 47.3% with diabetes.

International Journal of Obesity **volume 41**, 1615–1620(2017)

Risk of Diabetes associated with A1C level in those with pre-diabetes

A1c Level	5 year incidence of diabetes
5.5-6.0%	9-25%
6-6.5%	25-50%

Classification of diabetes

- Type 1 diabetes: autoimmune
- Type 2 diabetes: progressive loss of beta cell and insulin resistance
- Specific types of diabetes due to other causes: steroid, monogenic
- Gestational diabetes mellitus: diabetes diagnosed in the second or third trimester of pregnancy that was not clearly overt diabetes prior to gestation.

ADA 2021 guideline, Diabetes Care 2021 Jan; 44(Supplement 1): S15-S33.

Who should be screened for Diabetes?

- Age >45
- Age <45 with BMI>23 (Asian Americans, BMI >25 for others) + one of the following:
  - First degree relatives with diabetes
  - High risk race/ethnicity (African American, Asian American, Latino, Native American, Pacific islander)
  - History of CVD
  - HTN
  - HDL <35 mg/dl, triglyceride >250 mg/dl
  - Gestational DM (lifelong screening every 3 years)
  - Women with polycystic ovary syndrome
  - Sedentary lifestyle
  - Prior abnormal FBS, HbA1c, or OGTT (yearly)
- If normal, repeat testing every 3 years.

Diabetes Care 2021 Jan; 44(Supplement 1): S15-S33.

Diagnostic criteria for gestational diabetes

One-step strategy (75-g OGTT in the morning after an overnight fast of at least 8 h.)

- The diagnosis of GDM is made when any of the following plasma glucose values are met or exceeded:
- • Fasting: 92 mg/dL (5.1 mmol/L)
- • 1 h: 180 mg/dL (10.0 mmol/L)
- • 2 h: 153 mg/dL (8.5 mmol/L)

Two-step strategy

- **Step 1:** Perform a 50-g GLT (nonfasting), with plasma glucose measurement at 1 h, at 24–28 weeks of gestation in women not previously diagnosed with diabetes.
- If the plasma glucose level measured 1 h after the load is ≥130, 135, or 140 mg/dL (7.2, 7.5, or 7.8 mmol/L, respectively), proceed to a 100-g OGTT.
- **Step 2:** The 100-g OGTT should be performed when the patient is fasting.
- The diagnosis of GDM is made when at least two[*] of the following four plasma glucose levels (measured fasting and at 1, 2, and 3 h during OGTT) are met or exceeded (Carpenter-Coustan criteria [193]):
- • Fasting: 95 mg/dL (5.3 mmol/L)
- • 1 h: 180 mg/dL (10.0 mmol/L)
- • 2 h: 155 mg/dL (8.6 mmol/L)
- • 3 h: 140 mg/dL (7.8 mmol/L)

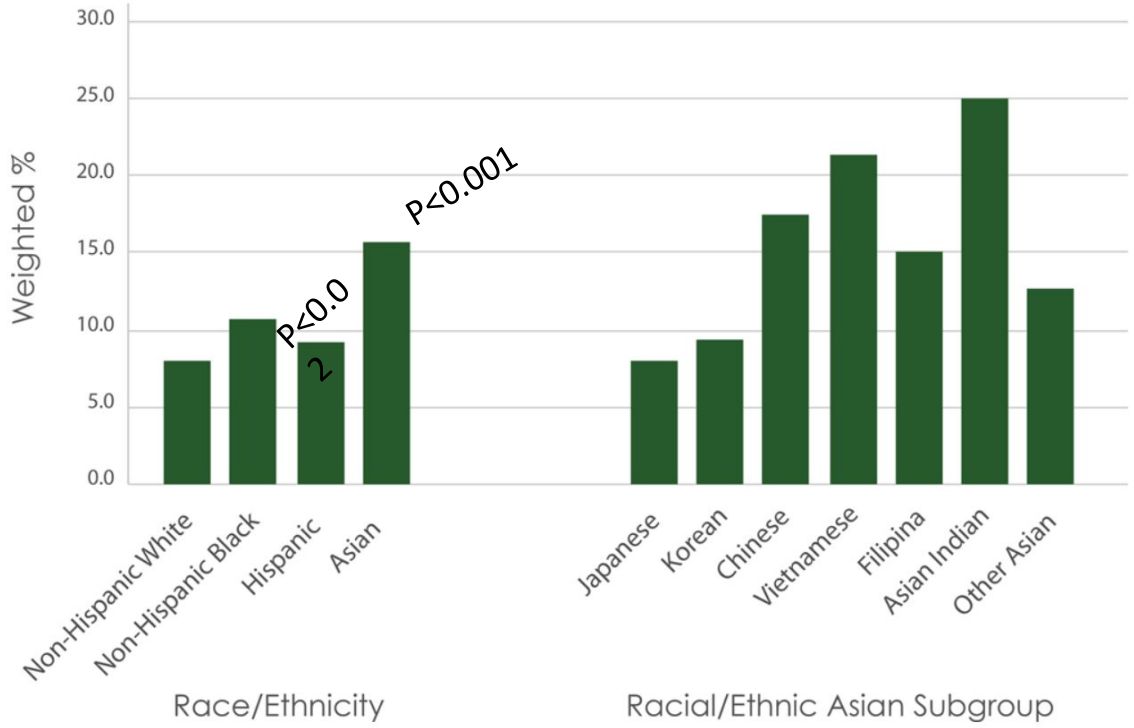
Diabetes Care 2021 Jan; 44(Supplement 1): S15-S33

Gestational diabetes occurs at higher rate in Asian Americans-Data from CDC in 2016

Race and Hispanic origin[§]	Number	% with preexisting diabetes	% with gestational diabetes
White, non-Hispanic	2,054,437	0.7	5.3
Black, non-Hispanic	558,044	1.2	4.8
Asian, non-Hispanic	254,326	0.9	11.1
Hispanic	917,822	1.0	6.6
American Indian/Alaska Native	31,375	2.1	9.2
Native Hawaiian/Pacific Islander	9,337	1.8	8.4
More than one race	80,836	0.9	5.8

Deputy NP, Kim SY, Conrey EJ, Bullard KM. Prevalence and Changes in Preexisting Diabetes and Gestational Diabetes Among Women Who Had a Live Birth — United States, 2012–2016. MMWR Morb Mortal Wkly Rep 2018;67:1201–1207.

The risk of gestational diabetes vary among ethnic Asian-American subgroups



Prev Chronic Dis 2019;16:190212.

Gestational diabetes is associated with worse neonatal outcome in Han Chinese

	Adjust odds	P value
Premature delivery	2.86 (1.68-4.87)	<0.0001
Macrosomia	3.10 (1.52-6.35)	0.00023
Large for gestational age	1.71 (1.07-2.73)	0.003
Admission to neonatal nursery	2.15 (1.73-3.86)	<0.0001
Neonatal hypoglycemia	7.61 (3.41-15.72)	<0.0001
Apgar <7 at 5 min	1.33 (0.68-3.89)	0.039

No difference in small for gestational age, neonatal respiratory distress, congenital malformations, live birth, neonatal jaundice.

Diabet. Med. 31, 341–351 (2014)

Gestational diabetes is associated with worse maternal outcome in Han Chinese

	Adjust odds	P value
polyhydramnios	2.49 (1.27-4.91)	0.010
Intrahepatic cholestasis	2.05 (1.14-3.69)	<0.0001
Thrombocytopenia	1.85 (0.89-3.83)	0.018

No difference in gestational hypertension, pre-eclampsia, postpartum hemorrhage, perineal trauma.

Diabet. Med. 31, 341–351 (2014)

Women with gestational diabetes have higher risk of complications in NYC

	Pregnancy induced hypertensive disorder	Preterm birth	Macrosomia	Primary cesarean delivery
Hispanic	2.1 (1.9,2.3)	1.8 (1.7,1.9)	1.5 (1.4, 1.6)	1.5 (1.4, 1.6)
Asian and Pacific Islander	2.2 (1.9, 2.6)	1.6 (1.5, 1.7)	1.1 (0.9, 1.2)	1.3 (1.2, 1.4)
White Non-Hispanic	2.0 (1.7, 2.4)	1.8 (1.6, 1.9)	1.1(1.0, 1.2)	1.3 (1.2, 1.5)
Black Non-hispanic	2.1 (1.9, 2.2)	1.7 (1.7, 1.8)	1.4 (1.3, 1.4)	1.4(1.4, 1.5)

Matern Child Health J (2012) 16:364–373

Asian race is associated more than 2 fold increased risk of developing diabetes in those with history of GDM

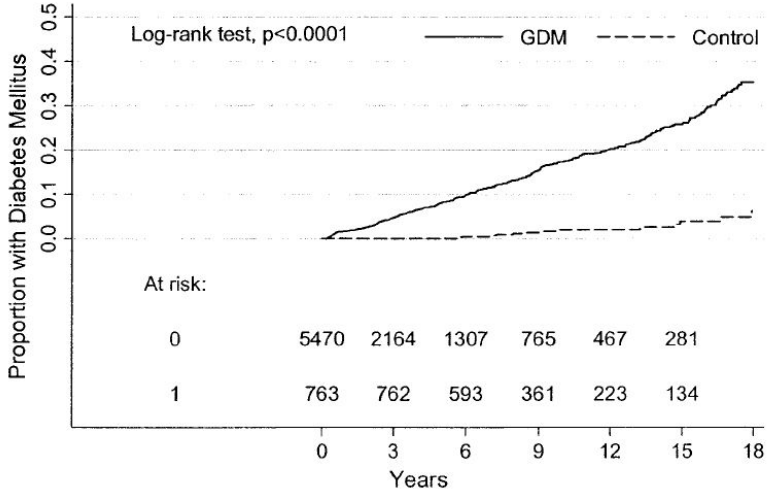


Table 2—*HRs and 95% CIs for significant covariates using imputation and complete case methods*

Covariate	Imputation	Complete case
n	5,470	3,578
Insulin usage	3.5 (2.6–4.7)	3.4 (2.5–4.7)
Asian race	2.1 (1.7–2.7)	2.4 (1.9–3.2)
FBG (mmol)	1.1 (0.9–1.2)*	1.0 (0.9–1.1)*
1-h blood glucose (mmol)	1.3 (1.21.4)	1.3 (1.2–1.4)
2-h blood glucose (mmol)	1.0 (0.9–1.1)*	1.0 (0.9–1.1)*
BwtGC (per 10-unit increase from mean)	1.05 (1.0–1.1)†	1.03 (1.0–1.1)†
BMI (5-unit increase from BMI = 20 kg/m^2)	1.4 (1.21.6)	1.6 (1.41.8)

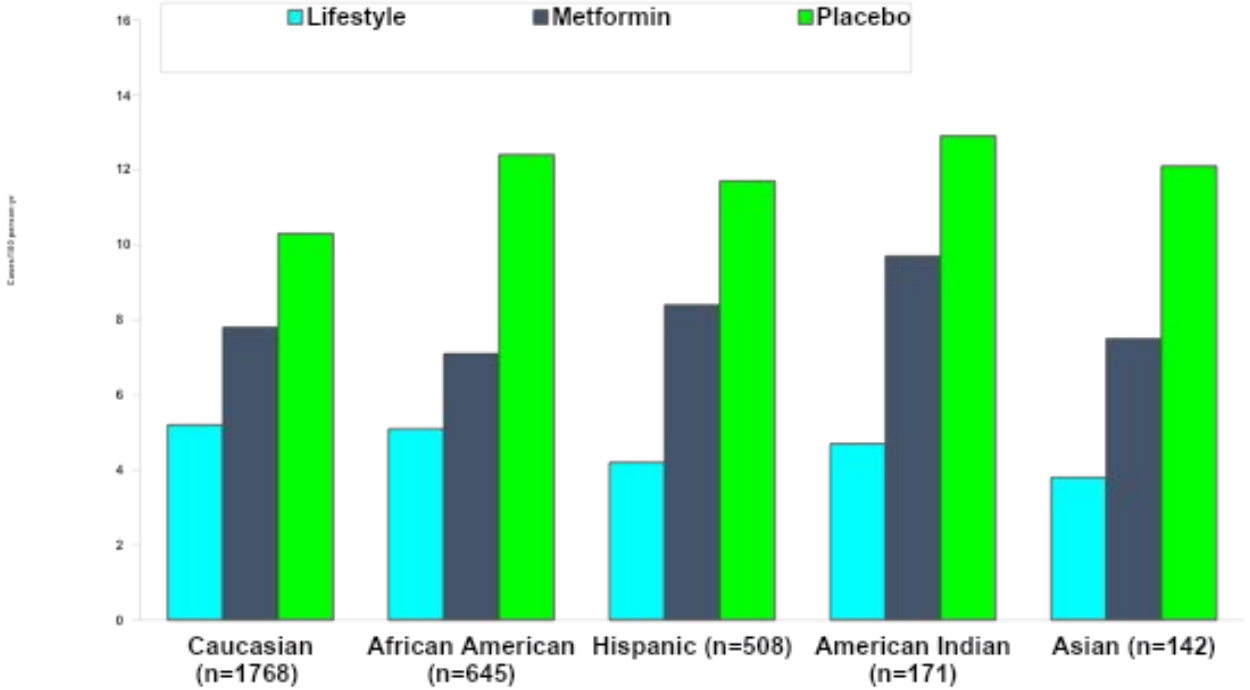
All *P* values <0.001, except *$P > 0.10$ and †$P = 0.02$.

Diabetes Care 30:878–883, 2007

Myth III: It must be my gene, there is nothing I can do to for my diabetes control

"Eat less, exercise more and alter your genetic code with the DNA of thin parents."

Diabetes can be prevented in all ethnic groups.



DPP Study

Treatment of Diabetes in Asians

Principles of diabetes treatment

- Diet
  - What to eat
  - How much to eat
- Exercise
- Weight loss
- Medications
- Screen for complications

Diet: choose the right food

- MNT is an integral component of diabetes management and diabetes self-management.

"I think diabetes is affecting my eyesight. I have trouble seeing the consequences of poor food choices."

Source: DIABETease

Western diet increases diabetes in Chinese adults in Singapore

- A study of 43,000 Chinese adults in Singapore, interviewed about dietary habits between 1993-1998
- 2252 found to have diabetes during follow up 1999-2004
- Western-style fast food >twice a week vs. eating little or no fast food
- 27% higher risk of developing diabetes and 56% higher risk of dying of CAD in those eating fast food

Circulation 2012; 126(2): 182-188

Asian diet helps to lose weight

- 28 Asian Americans (AA) and 28 Caucasians (CA)
- 8 weeks of Traditional Asian diet
- Followed by: 8 weeks of typical American diet

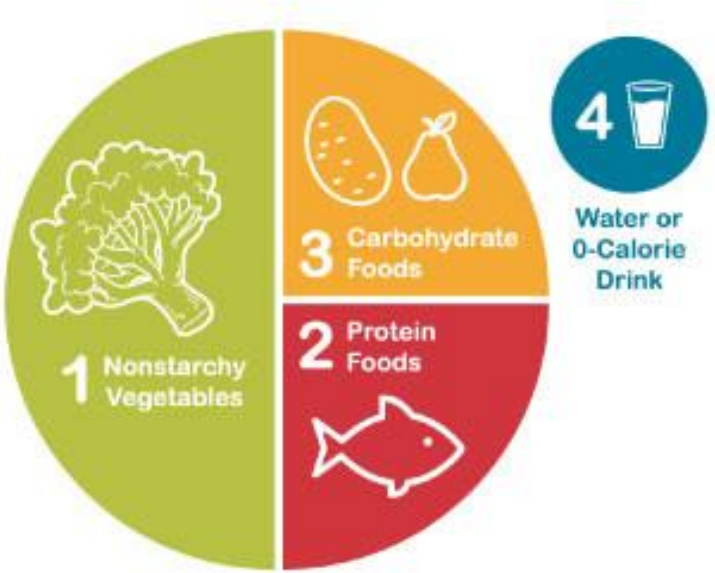
  or 8 weeks of Traditional Asian diet
- Asian diet - both AA and CA improved insulin sensitivity, reduced weight (-1.6 Kg), body fat (-1.7%), trunk fat (-2.2%)
- American diet - AA had smaller weight gain than CA, but developed more insulin resistance

Hsu et al. PLoS ONE. 2014

Nutritional therapy

Non-starchy vegetables

kale, collard green, spinach, bell pepper, broccoli, cauliflower, cabbage, and carrots, onion, tomato, zucchini,



9 inch plate

Carbohydrate food

- Starchy vegetables: potatoes
  - Whole grain bread, noodle, rice, or pasta
- Fruits and dry fruits
- Dairy products
- Beans and legumes

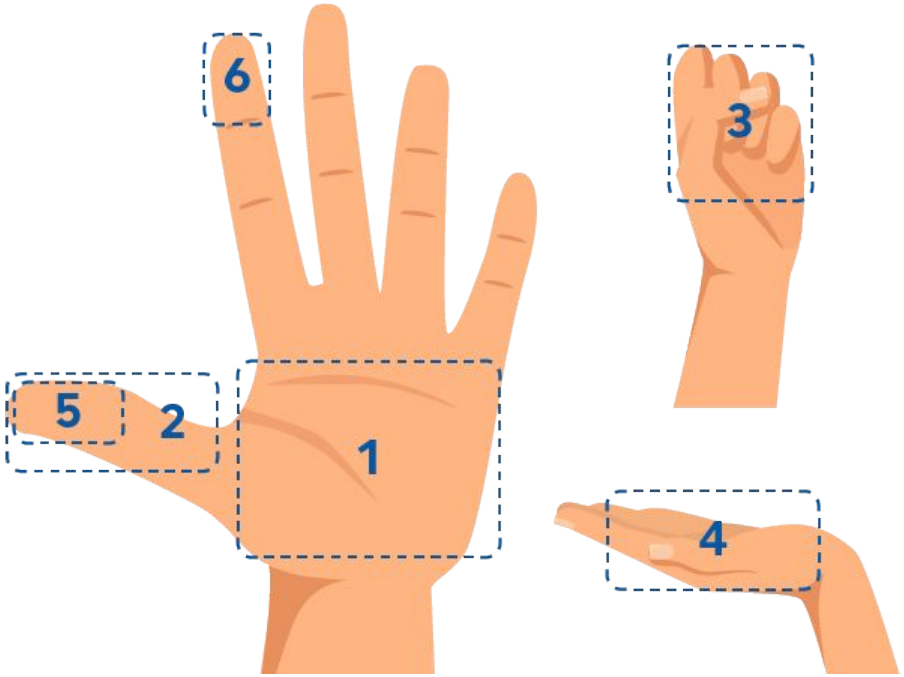
Lean protein

- Poultry
- Beans
- Fish
- Cheese
- Tofu
- Eggs
- Lean meat

https://www.cdc.gov/diabetes/managing/eat-well/meal-plan-method.html
https://www.diabetesfoodhub.org/articles/what-is-the-diabetes-plate-method.html#:~:text=The%20tes%20Plate%20Method%20is,you%20need%20is%20a%20plate!

Estimate portion size using your hand

1. **3 ounces of meat, fish, or poultry**
   Palm of hand (no fingers)
2. **1 ounce of meat or cheese**
   Thumb (tip to base)
3. **1 cup or 1 medium fruit**
   Fist
4. **1–2 ounces of nuts or pretzels**
   Cupped hand
5. **1 tablespoon**
   Thumb tip (tip to 1st joint)
6. **1 teaspoon**
   Fingertip (tip to 1st joint)

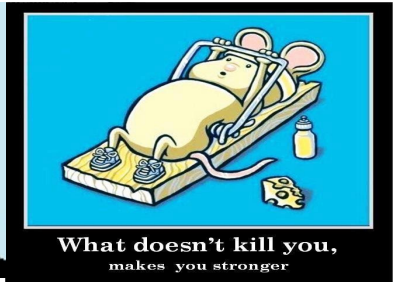


https://www.cdc.gov/diabetes/managing/eat-well/meal-plan-method.html

Exercise and weight loss

The Diabetes Prevention Program study showed:

- ***30 minutes*** *a day of moderate physical activity along with a* ***5 to 10%*** *weight loss produced a* ***58% reduction*** *in diabetes*



Diabetic Medications: All can be used in Asians

- Biguanides: metformin
- Sulfonylureas: Glyburide, Glipizide, Glimepiride
- Thiazolidinediones: Pioglitazone, Rosiglitazone
- Alpha-glucosidase inhibitor:Acarbose
- Non-sulfonylurea secretagogue: Repaglinide, Nateglinide
- GLP-1 agonist: Liraglutide, Exenatide, Dulaglutide, Semaglutide,
- DPP-4 inhibitor: Sitagliptin, Linagliptin, Saxagliptin, Alogliptin
- SGLT-2 inhibitor: Empagliflozin, Canagliflozin, Dapagliflozin
- Short acting and long acting insulin

Unique features of diabetes medical management in Asians

East Asians have impaired insulin secretion compared to Caucasians

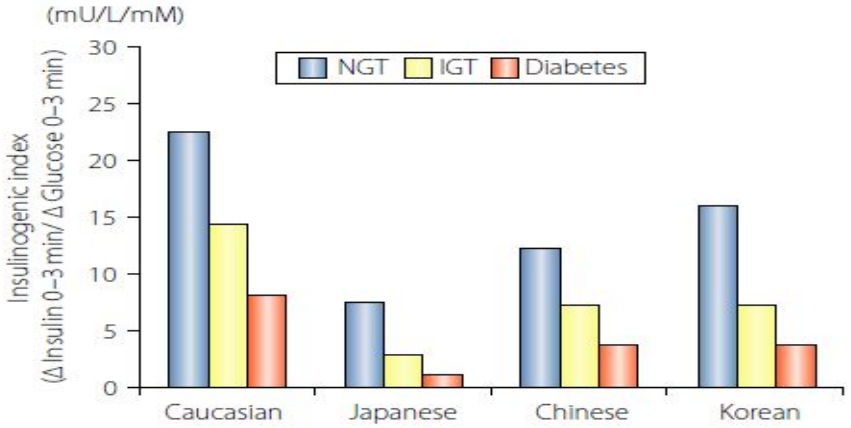


Figure 1 | Reduced early-phase insulin secretion in East Asian individuals compared with Caucasian individuals. Insulinogenic index (ΔInsulin 0–30 min/ΔGlucose 0–30 min) was indirectly compared between East Asians and Caucasians with or without type 2 diabetes. Blue bars, participants with normal glucose tolerance (NGT). Orange bars, participants with isolated impaired glucose tolerance (IGT). Red bars, participants with type 2 diabetes (Diabetes). Reproduced from Yabe *et al.*[50] with permission.

J diabetes Investig 2016;7:102-109

Asians respond better to DPP-4 inhibitors

	HbA1c	FBG	Postprandial BG
Asian dominant studies	-0.92 %	-1.23 mmol/l	-2.86 mmol/l
Non Asian dominant studies	-0.65%	-1.03 mmm/l	-2.45 mmol/l
Difference	-0.26%	-0.20mmol/l	-0.41 mmol/l
P value	<0.001	<0.001	>0.05

Diabetologia 2013;56:696-708

East Asians responded better to Sitagliptin compared to Caucasians and other Asians

TABLE 2 Placebo-adjusted mean reduction in HbA1c from baseline to 4 months by race

Racial group	Number	Mean (SE) placebo-adjusted ΔHbA1c		*P* value for comparison vs East Asian	*P* value for comparison vs Other Asian
		mmol/mol	%		
Caucasian	9957	−4.3 (0.2)	−0.39 (0.02)	.0002	.64
Other Asian	2178	−4.1 (0.4)	−0.37 (0.04)	.0006	NA
East Asian	1087	−6.6 (0.6)	−0.60 (0.05)	NA	NA
Hispanic	906	−6.0 (0.6)	−0.55 (0.06)	.52	.014
Black	447	−4.9 (0.9)	−0.45 (0.08)	.13	.43
Indigenous	96	−2.7 (2.1)	−0.24 (0.19)	.07	.49

Abbreviation: NA, not applicable. Other significant variables in the adjusted model were age ($P < .0001$), beta-blocker use ($P = .008$) and height ($P = .004$).

Diabetes Obes Metab. 2018;20:1427–1434.

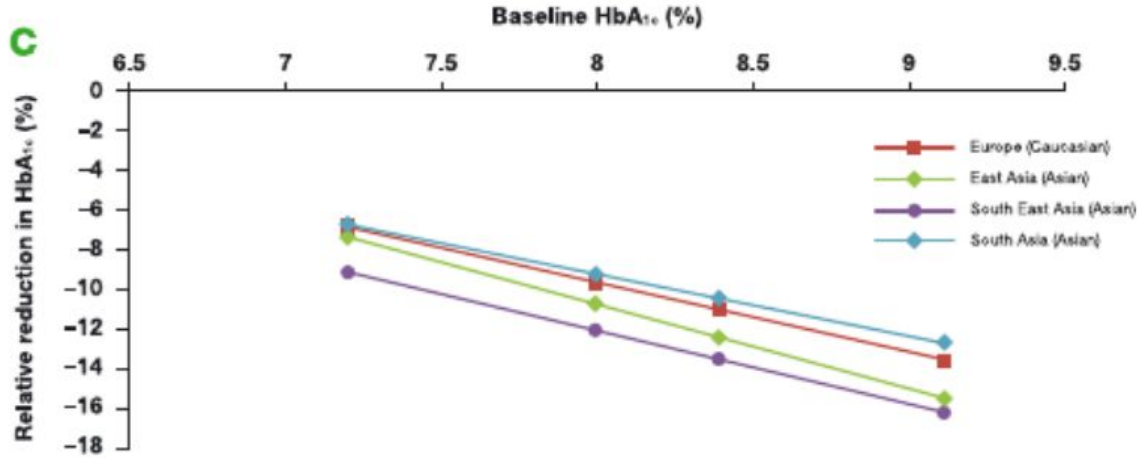
Consider insulin if A1c is greater than 9%

- Asians are reluctant to take insulin.
- Consider insulin at an earlier time if insulin deficiency is suspected in a lean patient.

Acarbose

- α-glucosidase: hydrolyze oligosaccharides and polysaccharides (non-absorbable) into monosaccharides (absorbable) – Acarbose inhibits α-glucosidase
- Works to delay carbohydrate absorption to lower post-meal hyperglycemia, achieve glycemic control, and reduce cardiovascular risk
- Works well for Asians given high carbohydrate diet.
- Start with low dose such as 25 mg with each meal

Acarbose works better in Asian subgroups



Diabetes Metab Res Rev 2015; 31:155–167.

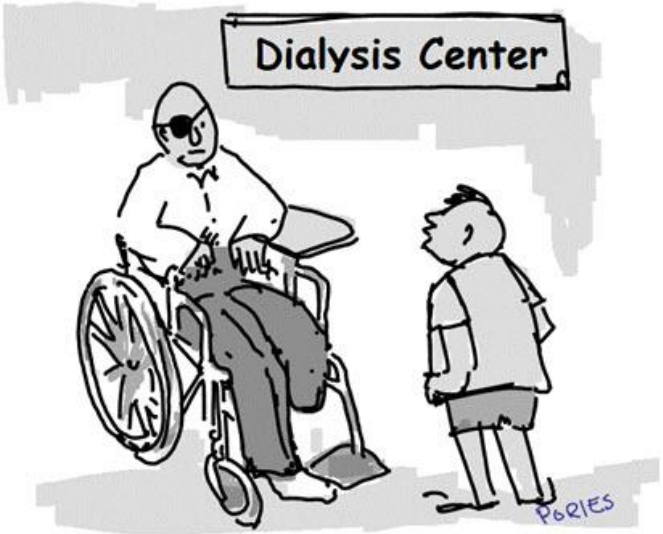
GLP-1 agonists improve glycemic control in Asians with and without obesity

- Meta-analysis of 20 studies
- Both obese and non-obese Asians taking GLP-1 agonists had similar improvement in fasting BG, 2 hour postpranidal BG, HbA1c and percentage of patients achieving target A1c of <7%.
- The non-obese group achieved a higher rate of target A1c <6.5% compared to obese group.

Nature 2017: 7: *15997* | DOI:10.1038/s41598-017-16018-9 11

Beyond glucose

- Glucose management – important, but diabetes management should not be limited to glucose only
- Control BP
- Control lipids



"Grandpa, why didn't you get a gastric bypass?"

Angiotensin-converting-enzyme inhibitors

- Asians have a higher rate of developing diabetic nephrology and requiring dialysis.
- ACEIs are important in delaying diabetic nephropathy progression.
- Asians tend to develop coughs more than other ethnic groups.
- Consider ARBs instead

Table 2 Reasons for Discontinuation, Comparing Chinese with General Population

Reasons for Discontinuation	Discontinuers				Relative Risk (95% CI)
	Chinese		General Population		
	n	%	n	%	
Ineffective	1	0.4	6	0.2	2.35 (0.28-19.44)
Intolerant: any reason	106	37.6	727	18.3	2.05 (1.74-2.42)
Cough	96	34.0	534	13.4	2.53 (2.11-3.03)
Other	10	3.6	193	4.9	0.73 (0.39-1.36)
Angioedema	1	0.4	17	0.4	0.83 (0.11-6.20)
Noncompliance	8	2.8	116	2.9	0.97 (0.48-1.97)
Other cause	10	3.6	170	4.3	0.83 (0.44-1.55)
Total*	139	47.1	1326	31.1	1.51 (1.33-1.72)

CI = confidence interval.
*Includes discontinuers with unknown reason (13 Chinese, 290 general population).

Am J Med 2010 Feb;123(2):183.e11-5.

Statins

- 2005 - FDA issued warning about risk of severe myopathy associated with Rosuvastatin.
- 2x increase in median exposure to Rosuvastatin in Asian subjects compared to Caucasian controls
- Lower statin doses produce similar lipid improvements in Asian patients compared to Caucasians on higher doses.
- Genetic differences in the metabolism of statins among different ethnic groups
- Consider starting at a low dose
- Consider Fluvastatin, Pravastatin, or Pitavastatin if tolerance issue.
- Consider alternate day dosing for Atorvastatin and Rosuvastatin if necessary due to side effects
- Limit simvastatin dose to 20 mg if niacin is used concurrently in Asian patients
- Treat other underlying etiologies for myopathy and avoid inferring medications

Am J Cardiol. 2007 February 1; 99(3): 410–414.

Asians are less likely to do routine screening tests compared to other ethnic groups

TABLE 2—Multivariable Analyses for Racial/Ethnic Differences in Diabetes Management Behaviors: Racial and Ethnic Approaches to Community Health (REACH) US Risk Factor Survey, New York City, 2009–2012

Race/Ethnicity	Eye Examination in Past Year (0 = no), OR (95% CI)	HbA_{1c} Checks per Year,[a] OR (95% CI)	Feet Checks per Year,[a] OR (95% CI)	Weekly Glucose Checks,[a] OR (95% CI)	Daily Feet Checks,[a] OR (95% CI)
Black (Ref)	1.00	1.00	1.00	1.00	1.00
Hispanic	0.79 (0.58, 1.09)	-0.02 (-0.11, 0.07)	-0.09 (-0.18, 0.00)	0.20 (-0.03, 0.43)	-0.01 (-0.08, 0.05)
Chinese	0.53* (0.32, 0.89)	-0.16* (-0.27, -0.04)	-0.40*** (-0.55, -0.25)	-0.89*** (-1.15, -0.63)	-0.40*** (-0.48, -0.32)
Korean	0.23*** (0.12, 0.46)	-0.27** (-0.42, -0.12)	-0.67*** (-0.81, -0.52)	-0.86*** (-1.16, -0.57)	-0.38*** (-0.47, -0.28)
Asian Indian	0.41** (0.22, 0.75)	-0.04 (-0.19, 0.10)	-0.03 (-0.27, 0.22)	-0.05 (-0.29, 0.20)	-0.14*** (-0.22, -0.07)

Note. CI = confidence interval; HbA_{1c} = glycosylated hemoglobin; OR = odds ratio. Analyses were adjusted for age, gender, US-born, income, education, health insurance status, self-reported health, English spoken at home, and body mass index categories.

[a]Dependent variable transformed using $\ln(Y_i + 1)$.

*$P < .05$; **$P < .01$; ***$P < .001$.

Am J Public Health. 2015;105:S443-S446

Diabetes management during COVID-19 pandemic

Well controlled diabetes increases survival from COVID 19

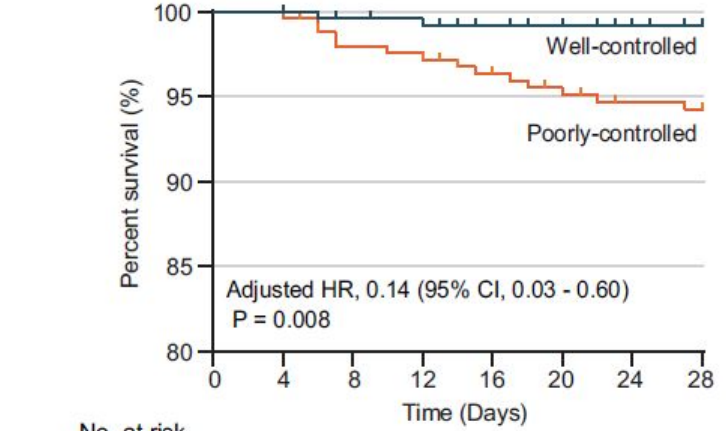


Figure 3. Survival Curves of Patients with Well-Controlled BG or Poorly Controlled BG in the PSM Model

Zhu et al., 2020, Cell Metabolism 31, 1068–1077

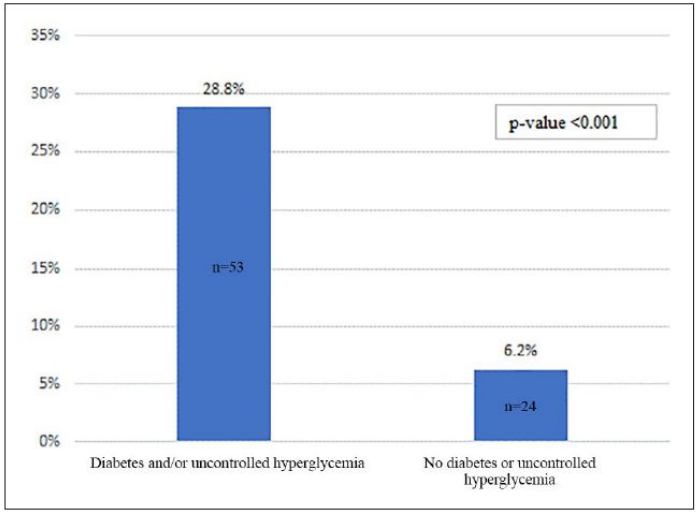


Figure 3. Mortality rates among patients who were discharged or died comparing diabetes and/or uncontrolled hyperglycemia (n = 184) with patients without diabetes or hyperglycemia (n = 386).

Bode, et al. Journal of Diabetes Science and Technology 2020, Vol. 14(4) 813–821

Diabetes management tips for patients during COVID-19 pandemic

- Check BG frequently
- Take all diabetic medications
- Keep up appointments, tele-health or in-person
- Avoid “Pandemic weight”
- Sleep 7-8 hours
- Maintain positive attitude and reduce stress
- Stay active, exercise 150 minutes per week
- Watch diet: fruits and vegetables, low fat intake, good lean protein

Have a wide variety of anti-inflammatory foods

Cruciferous vegetables

Leafy greens

Olive Oil

Tea

Nuts

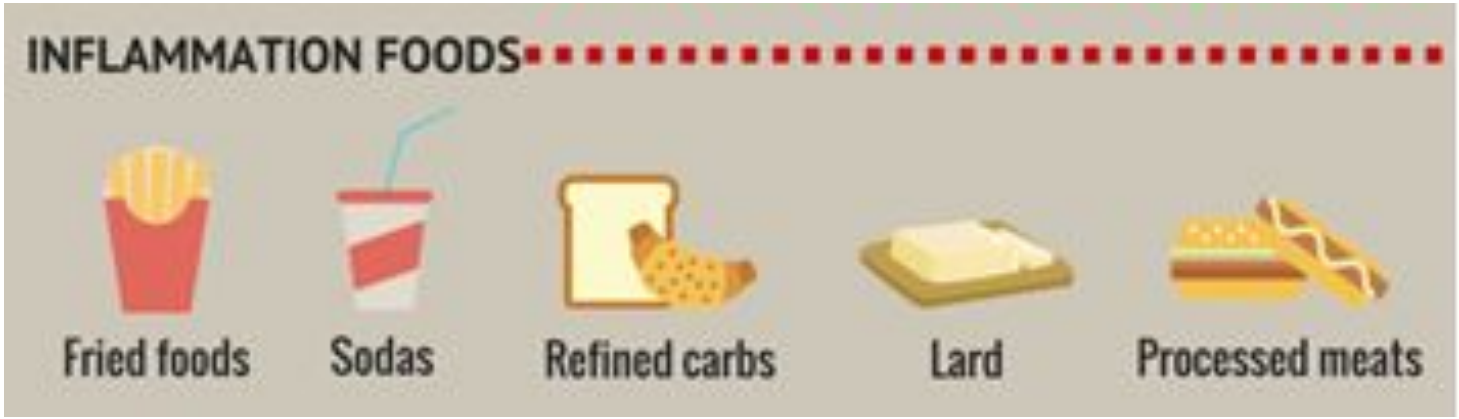
Berries, citrus fruits and appl

Whole grains

Tomatoes

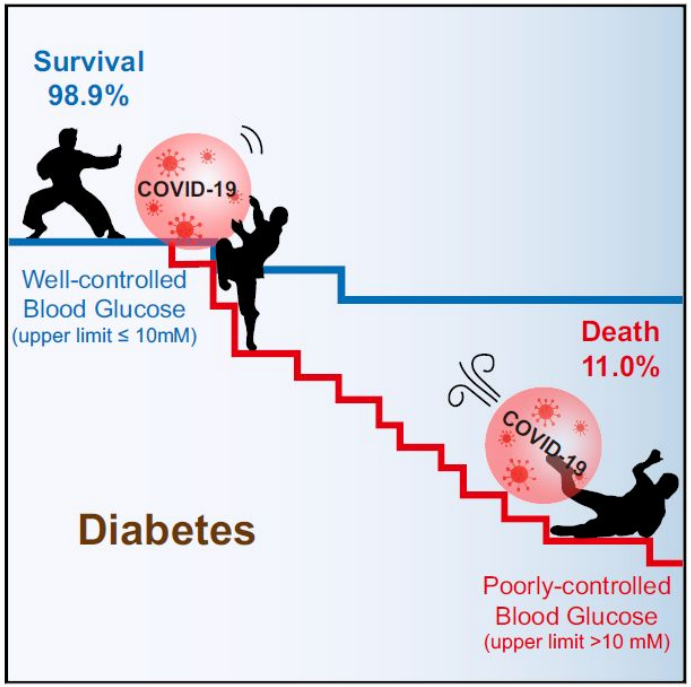
Fatty fish: salmon, mackerel, tuna sardines

Avoid foods that cause inflammation



Find frozen or canned food alternatives if fresh foods are not available

Better glucose control and better survival



Take the COVID Vaccine when available!!!

Zhu et al., 2020, Cell Metabolism 31, 1068–1077

Conclusions

- Diet, exercise, weight loss and medications are all important aspects of diabetes managements in Asians.
- Acarbose, GLP-1s, DPP4s may work better for Asians.
- ACEIs may have more side effects in Asians.
- Consider lower doses of statin for Asians.
- Culturally sensitive and linguist-appropriate care improves outcome.

More resources

Free Resources - COVID-19 Related Info for Asian people with Diabetes

The AADI/Asian Clinic has created FAQs on self-care and put together resources that are relevant to Asian communities (patients, their caregivers, family and community members). Please share with anyone who may be interested!

COVID-19 Vaccines available in Massachusetts

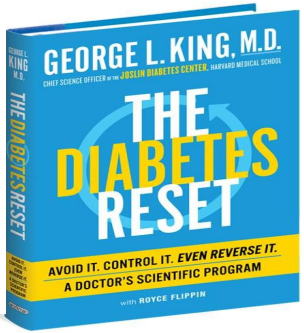
As of 2/1/2021, Phase 2 of Massachusetts vaccine plans has begun.
If you are 75+ or meet the eligibility, please refer below for vaccinations centers.

Boston: Fenway Park (Eligible populations statewide)
4 Jersey St, Boston, MA 02215
https://www.cic-health.com/vaccines

Boston: South Boston Community Health Center (Eligible populations statewide)
409 W Broadway, South Boston, MA 02127
http://bit.ly/38SUWs2

Lowell: Lowell Senior Center (Eligible populations in Lowell)
276 Broadway St, Lowell, MA 01854
https://www.maimmunizations.org/

SCREEN AT 23



Joslin Diabetes Center
Asian American Diabetes Initiative

Instant nutrition analysis of Asian meals

Drag 'n Cook®

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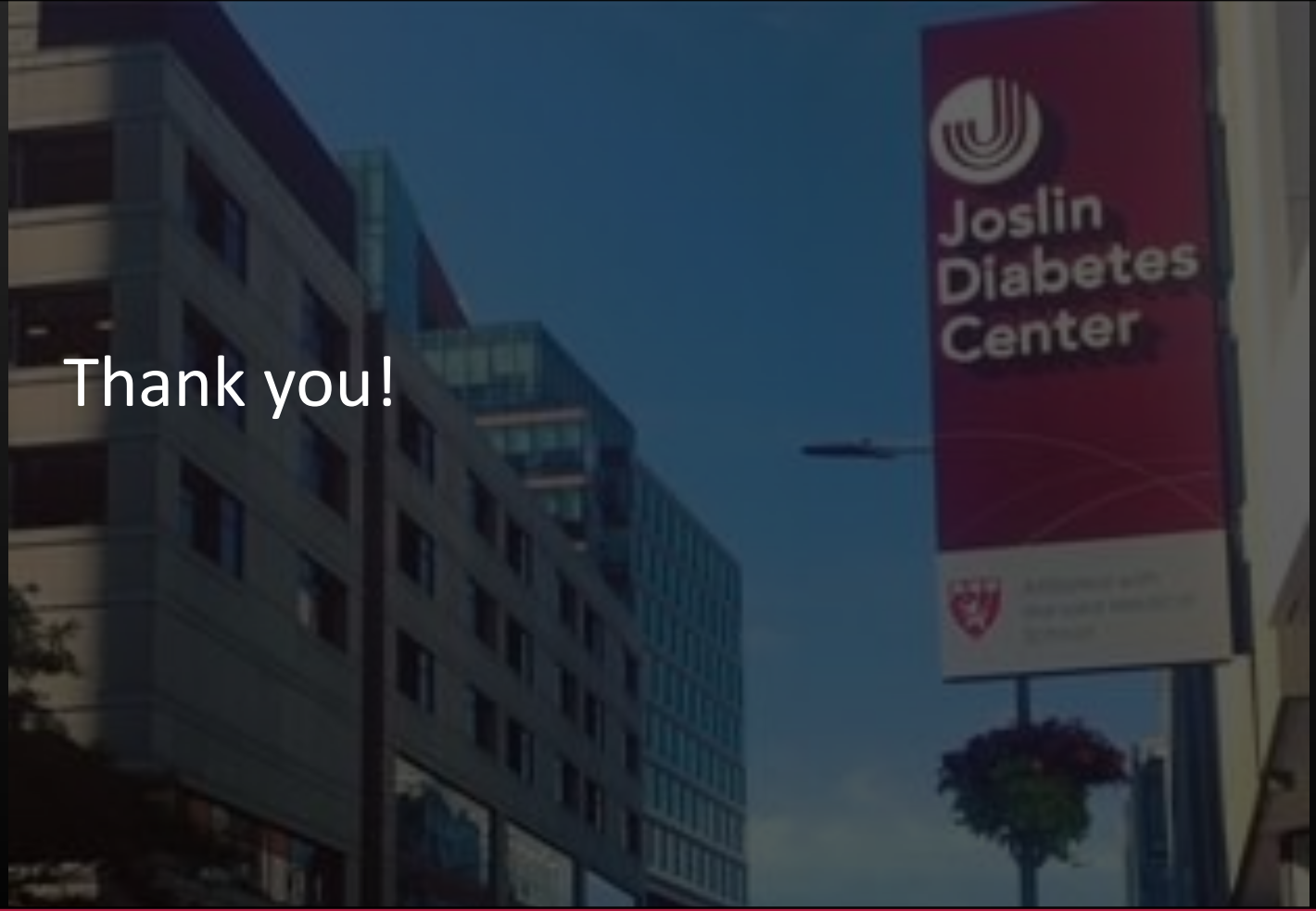
- ✓ Over 550 essential ingredients for Asian Cuisines
- ✓ 15 diabetes-friendly recipes included
- ✓ Available in English, Traditional Chinese, Simplified Chinese, Japanese, Korean and Vietnamese!

Available *now* on the web! Click the link below to access Drag'n Cook®



Thank you!

Q&A

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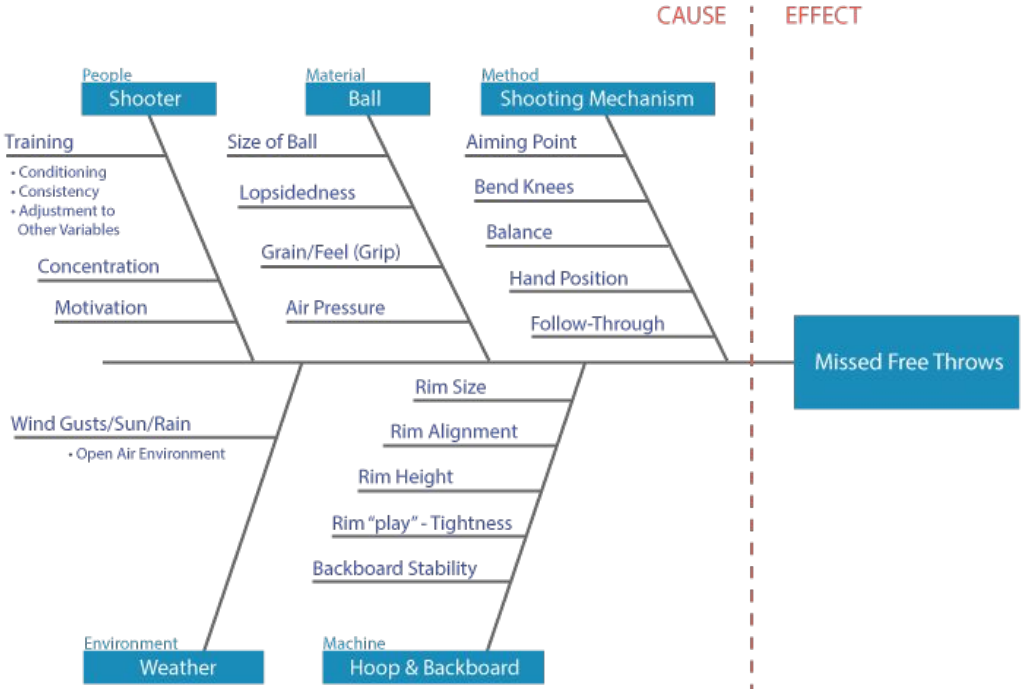
Fishbone diagram



Source: MoreSteam

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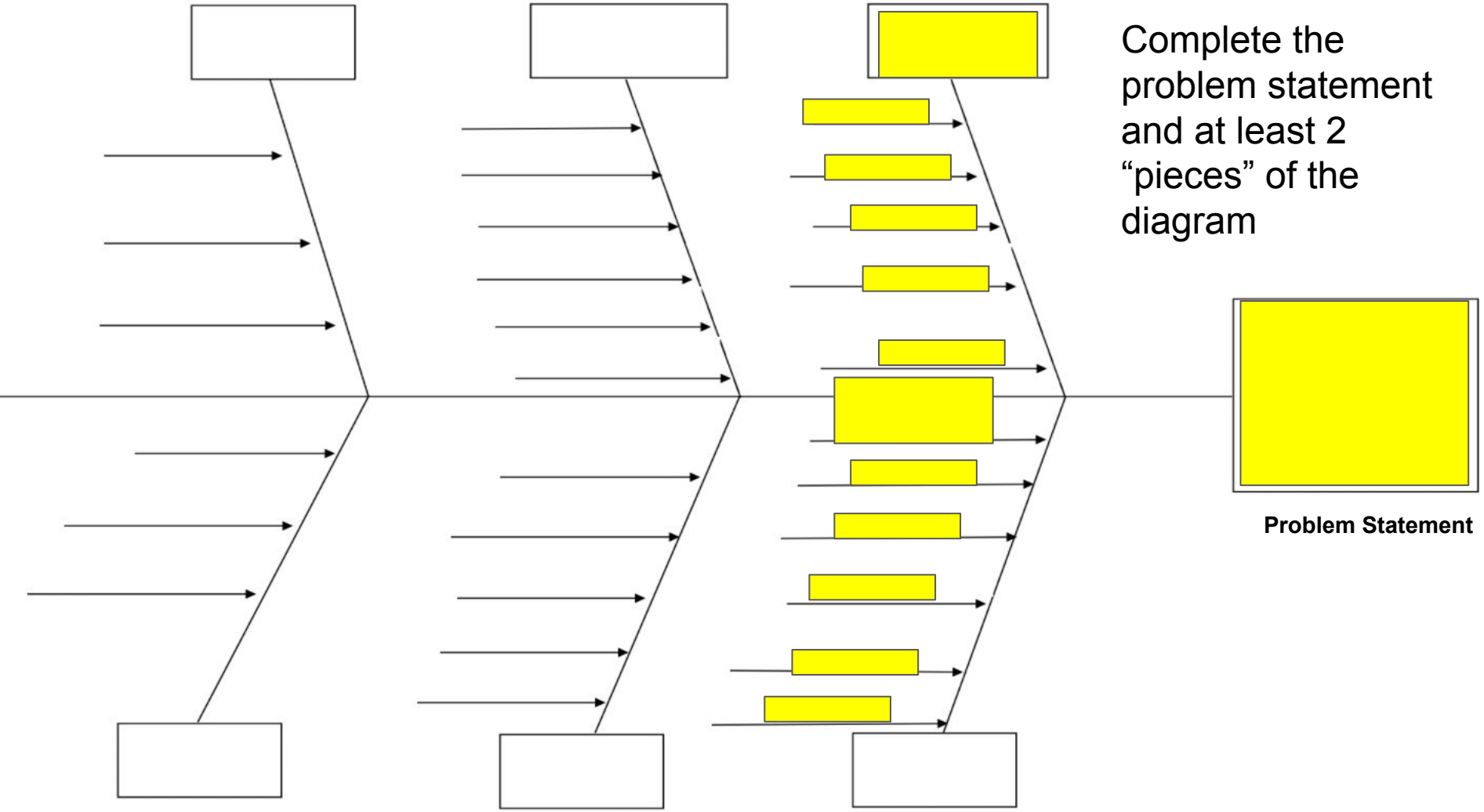
Complete the problem statement and at least 2 “pieces” of the diagram
Problem Statement

Upcoming: Session 3

- Monday, March 22nd
- Same time: 9-10:30am HT | 12-1:30pm PT | 3-4:40pm ET
- Implementing Diabetes Screening Protocols for AA Populations at Health Centers
- Panelist from Lowell Community Health Center
- Complete one “piece” of fishbone diagram before session 3

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Exit Poll

1. Overall, how satisfied are you with this session?
2. How confident are you that you will be able to apply information from this session at your health center/organization?
3. Based on your level of knowledge prior to the session, how would you rate changes to your knowledge as a result of the session?

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Exit Survey

Optional, but feel free to share your thoughts with us!

https://www.surveymonkey.com/r/HTW729K

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Thank you!
See you next Monday

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