

Reverse Your Diabetes & Insulin Resistance By Eating MORE “Good Carbs” & Less Fat!

Chronic Disease Reversal Series

Kirk Hamilton, PA-C

March 18 & 20, 2020

- Be aware of the dietary and environmental causes of diabetes
- Know the difference between type 1 and type 2 diabetes and their treatment
- Know what INSULIN RESISTANCE is and the dietary factors that cause it
- Understand why a high fiber, high carbohydrate, low fat diet is the optimal diet to prevent and reverse diabetes
- Understand why high meat and high fat consumption are not optimal for diabetics
- Know how to get started on a diet to reverse your diabetes (Type 1 or Type 2)

REVERSING DIABETES WITH MORE CARBS AND LESS FAT

MASTERING DIABETES WITH A PLANT-BASED DIET (5:28 video)

90



THE PIMA INDIAN STORY...

HIGH CARB DIET PREVENTS DIABETES



“The Pima Indians of Arizona have the highest reported prevalence of type 2 diabetes mellitus of any population in the world (1998)...in 1906, a review of the medical conditions afflicting the population listed only one case of diabetes...**The traditional Pima diet was high in complex carbohydrates and low in saturated animal fats.** With the decline in traditional farming, community members turned for survival to government surplus commodities, which were generally high in fat... The transition to a ‘modern’ diet contributed to an increase in the prevalence of obesity, which led to insulin resistance and, in turn, worsening glucose tolerance. Among Pima Indians the incidence of diabetes is strongly related to BMI... Furthermore, independent of its effects to promote obesity, a high-fat diet is associated with metabolic changes that can worsen glucose tolerance. **Compared with a traditional Pima diet (carbohydrate 70%, fat 15%, protein 15%) an isoenergetic 'modern' diet (30% carbohydrate, 50% fat, 20% protein) is associated with significantly higher fasting and stimulated plasma glucose concentrations and impaired P-cell function...The adoption of a modern diet higher in fat and lower in complex carbohydrate has undoubtedly played a significant role in the increase in diabetes among the Pima Indians during the last century...In addition to marked changes in diet, the transition from a traditional to a modern lifestyle was associated also with striking declines in physical activity levels. Decreases in physical activity levels probably contributed to an increase in the prevalence of obesity, but also may have had independent effects in promoting diabetes.”**

[Proceedings of the Nutrition Society \(1998\), 57, 175-181.](#)



“We estimated that the traditional Pima diet...was ~ 70–80% carbohydrate, 8–12% fat, and 12–18% protein... The Pima Indian diet of the last century was much higher in carbohydrate and lower in fat compared with the modern-day Pima diet. Any changes that this diabetes-prone population can make toward their traditional diet may help to decrease their incidence of diabetes.” [Diabetes Care 1993 Jan; 16\(1\): 369-371.](#)

“Preliminary studies have indicated that a change in the Indian diet back to the beans, corn, grains, greens and other low-fat, high-fiber plant foods that their ancestors depended upon can normalize blood sugar, suppress between-meal hunger and probably also foster weight loss.” [New York Time, May 21, 1991](#)

“For six staple foods (corn, lima beans, white and yellow teparies, mesquite, and acorns) traditionally consumed by Pima Indians ... the calculated glycemic indices were all low, ranging from 16 for acorns to 40 for corn. Insulin responses ... correlated with the GI. These results ... support...the hypothesis that the slow digestion and absorption of starch in traditional foods was a factor that helped protect susceptible populations from developing diabetes. [Am J Clin Nutr. 1990 Mar;51\(3\):416-20.](#)

MEXICO PIMA INDIANS VS. ARIZONA PIMA INDIANS

IT'S LIFESTYLE (DIET AND EXERCISE) NOT GENES!



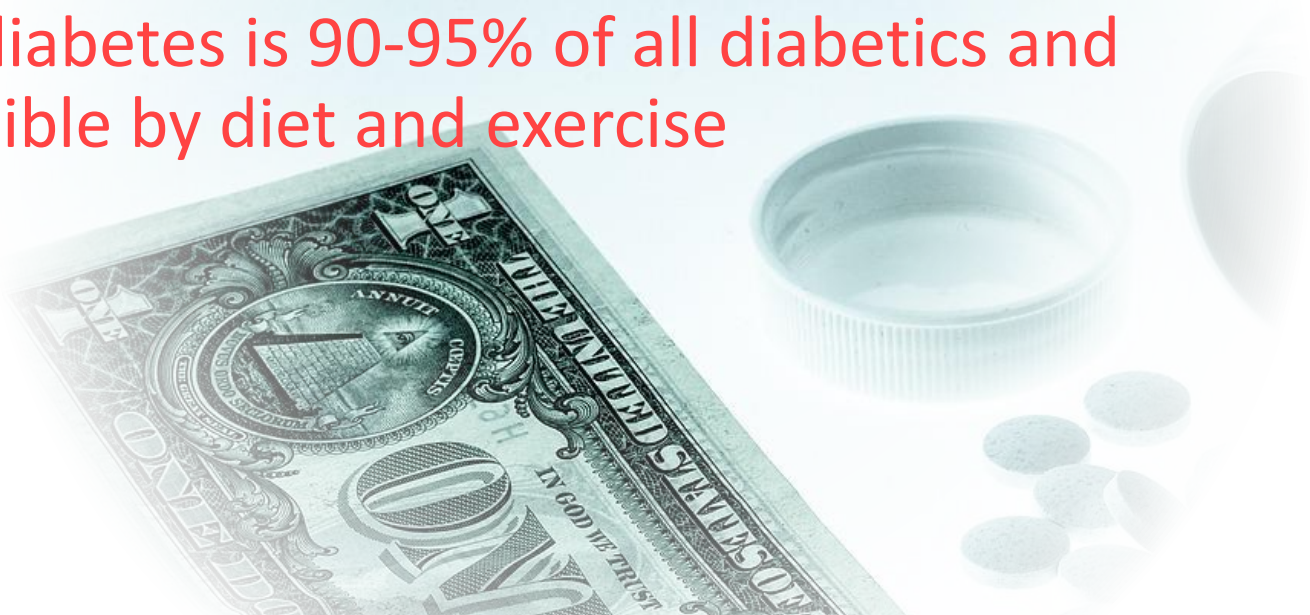
- **Arizona's Pima Indians exceed the type 2 diabetes rate (38 percent) of the genetically similar Pima Indians in Mexico (6.9 percent) by five times, according to a 2006 study by the American Diabetes Association.**
- **"While Arizona's Pima Indians currently have the highest rates of diabetes and obesity in the United States, that wasn't always the case. They were lean until around 1890 when their water supply was overtaken by American settlers upstream. The United States government began subsidizing the tribe's food — much of it containing sugar and white flour, and obesity and diabetes rates soared..."**
- **"The contingent of Pima who relocated to the Sierra Madre mountains of Mexico continued traditional farming, and the vast majority of Mexico's Pima Indians have maintained healthy weights...."**
- **Regardless, the drastically different diabetes and obesity rates of Mexico's Pima Indians versus Arizona's Pima Indians proves the significance of a healthy diet, including eating fresh vegetables and fruits and limiting consumption of manufactured food.**
- **"We've learned from this study of the Mexican Pimas that if the Pima Indians of Arizona could return to some of their traditions, including a high degree of physical activity and a diet with less fat and more starch, we might be able to reduce the rate, and surely the severity, of unhealthy weight in most of the population," Ravussin said.**

["Mexico vs. Arizona Pima Indians", Indian Country Today, December 2, 2010](#)

WHY SAY “REVERSE” DIABETES? WHY NOT JUST “MANAGE” DIABETES?



- Managing your diabetes will slowly kill you!
- Diabetes leads to all other chronic diseases which are 86% of the U.S. healthcare budget
- Diabetics are 2.3 x the healthcare costs of the average person (\$13,700 annually for diabetics)
- Type 2 diabetes is 90-95% of all diabetics and is reversible by diet and exercise



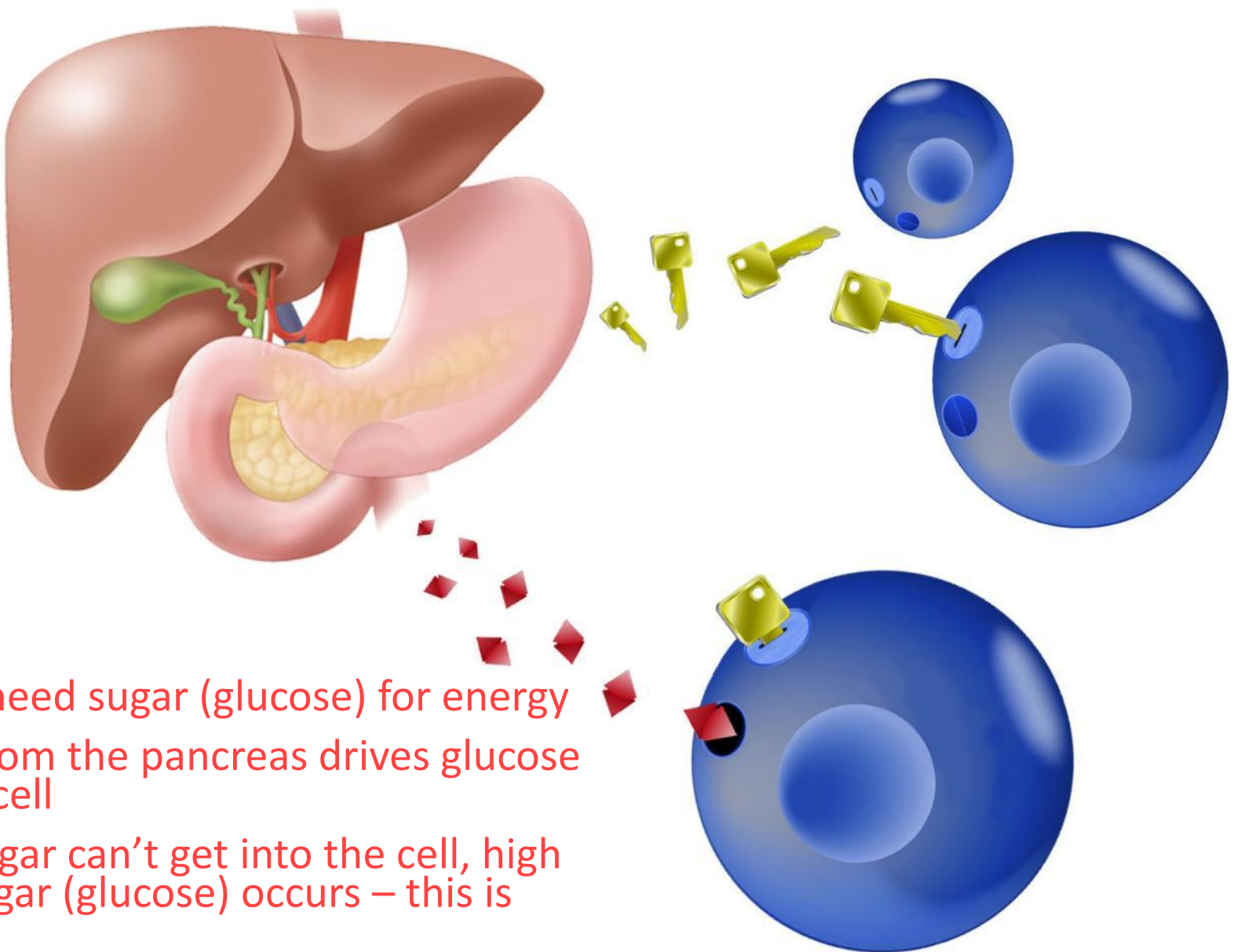


- Many diabetics test their blood sugar daily
- Immediate feedback of lifestyle change within hours to a few days by measuring blood sugar
- No doctor or lab visit is required to see this change
- Blood sugar self-testing is powerful, cheap and a safe biofeedback tool



WHAT IS DIABETES?

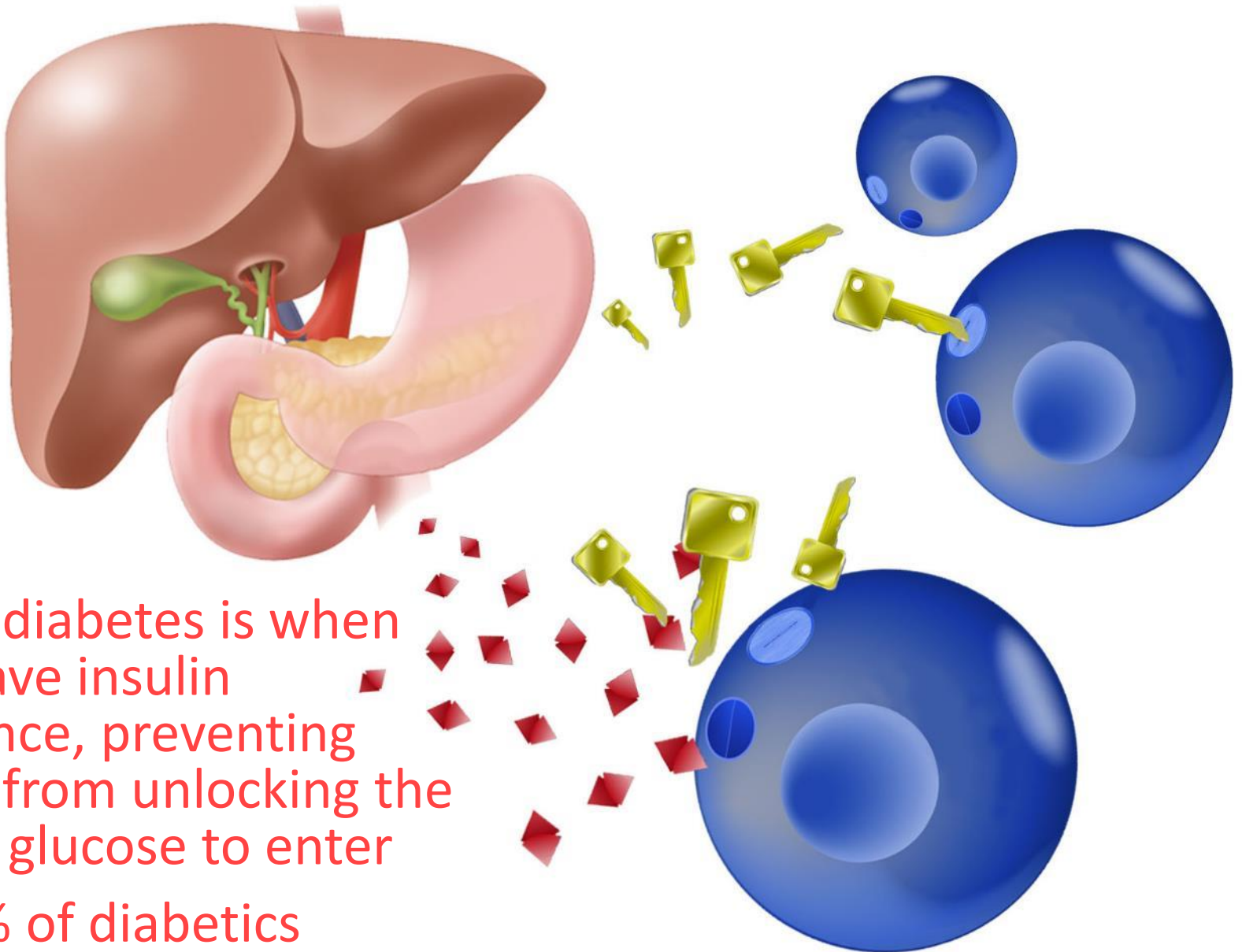
GLUCOSE AND INSULIN



- All cells need sugar (glucose) for energy
- Insulin from the pancreas drives glucose into the cell
- When sugar can't get into the cell, high blood sugar (glucose) occurs – this is diabetes

WHAT IS DIABETES?

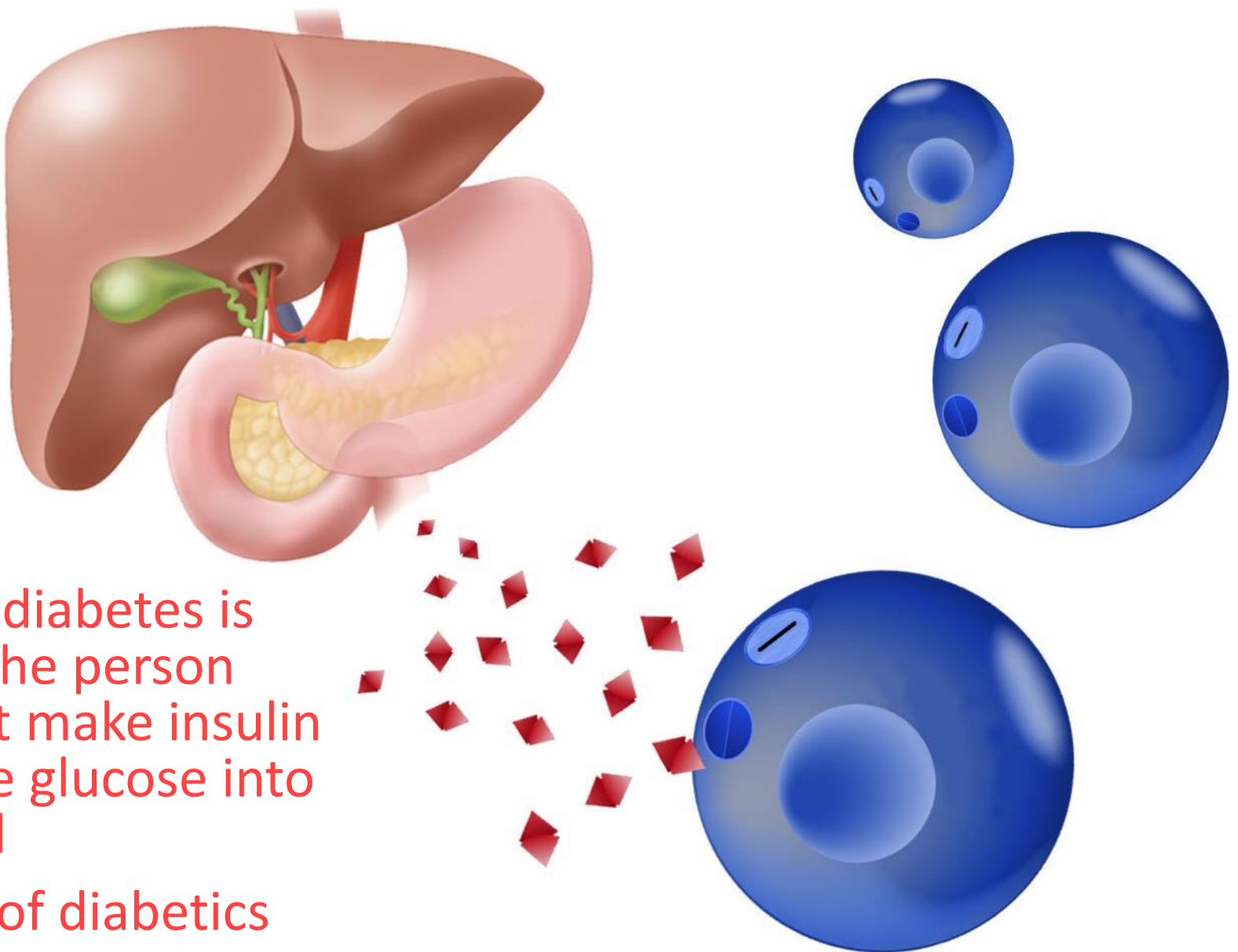
TYPE 2 DIABETES



- Type 2 diabetes is when cells have insulin resistance, preventing insulin from unlocking the cell for glucose to enter
- 90-95% of diabetics

WHAT IS DIABETES?

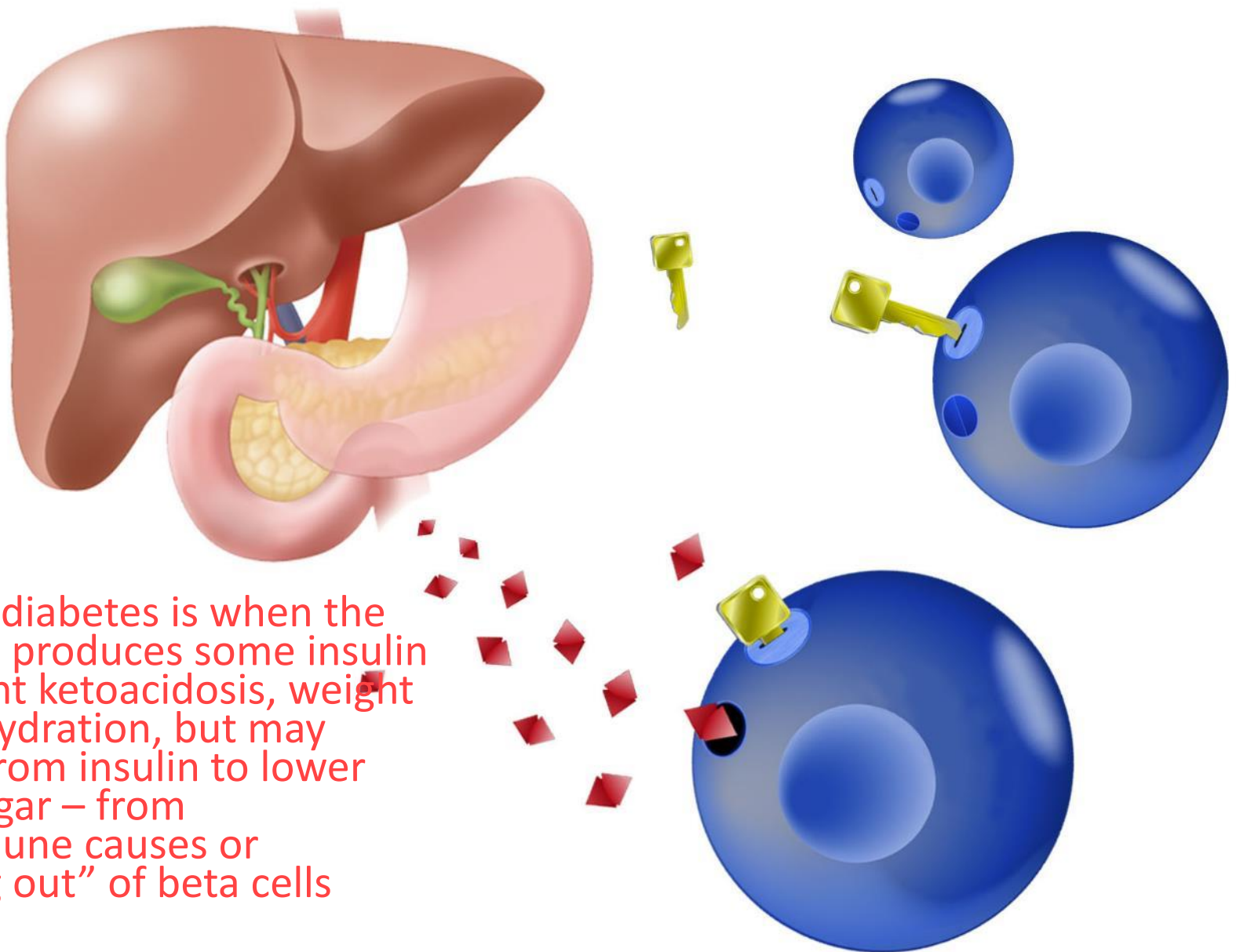
TYPE 1 DIABETES



- Type 1 diabetes is when the person doesn't make insulin to drive glucose into the cell
- 5-10% of diabetics

WHAT IS DIABETES?

TYPE 1.5 DIABETES



- Type 1.5 diabetes is when the pancreas produces some insulin to prevent ketoacidosis, weight loss, dehydration, but may benefit from insulin to lower blood sugar – from autoimmune causes or “wearing out” of beta cells

WHAT IS DIABETES?

GESTATIONAL DIABETES



- 2-10% of pregnant females develop gestational diabetes. Placental hormones inhibit insulin's actions, creating insulin resistance and dietary factors or too much fat in muscles, liver or pancreas creating insulin resistance

DIABETES IN THE UNITED STATES

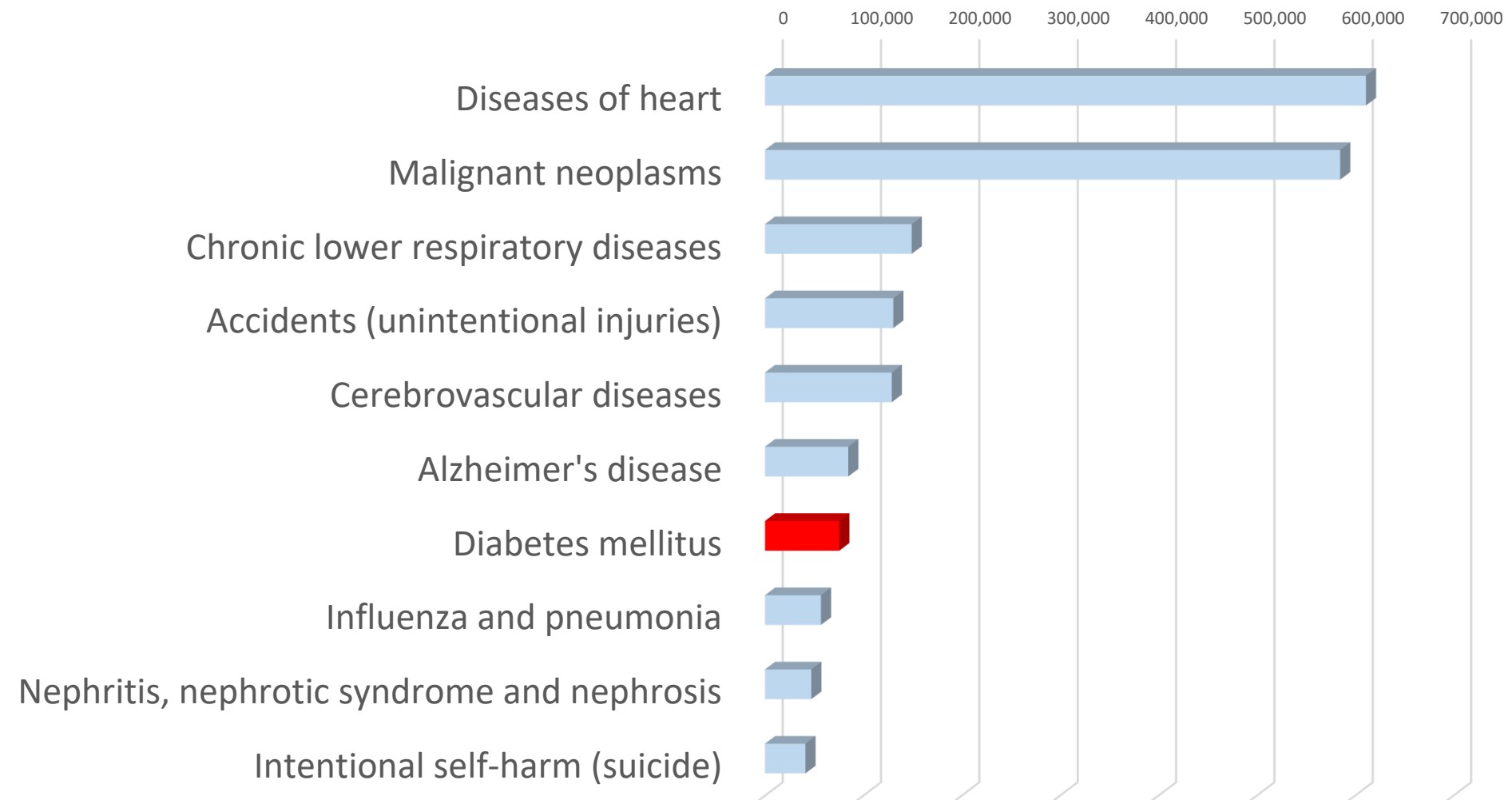
7TH LEADING CAUSE OF DEATH IN THE USA



Centers for Disease Control and Prevention's (CDC) National Center for Health Statistics

http://www.cdc.gov/nchs/data/dvs/lcwk9_2013.pdf

Top 10 Cause of Death in the United States



DIABETES IN THE UNITED STATES

MANY ARE UNAWARE THEY ARE AT RISK



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

PREDIABETES

86
MILLION



86 million people —
more than 1 out of 3 adults
— have prediabetes

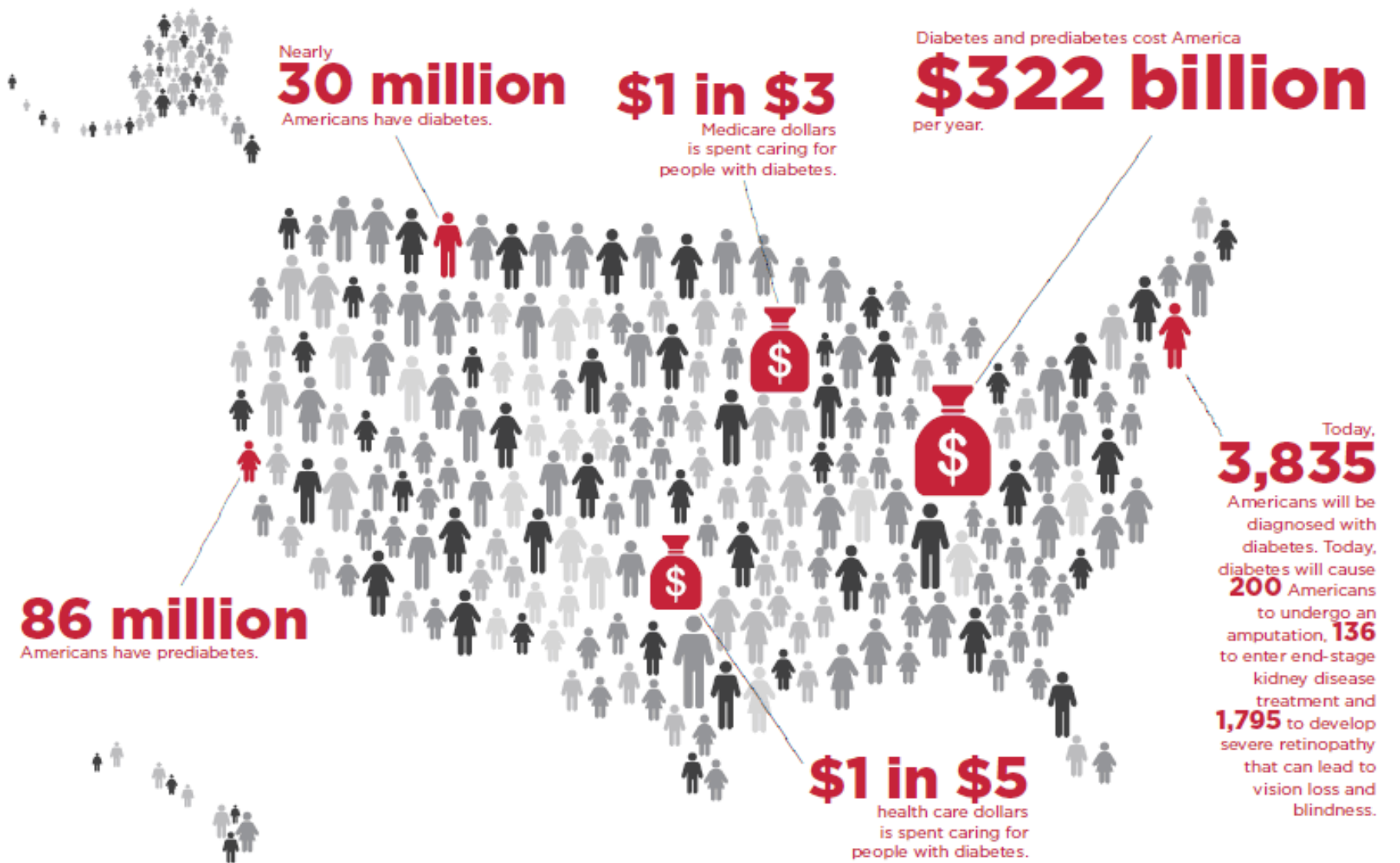


9
OUT
OF
10

do not know they
have prediabetes

DIABETES IN THE UNITED STATES

ECONOMIC COSTS ARE STAGGERING



Learn how to fight this costly disease at diabetes.org/congress



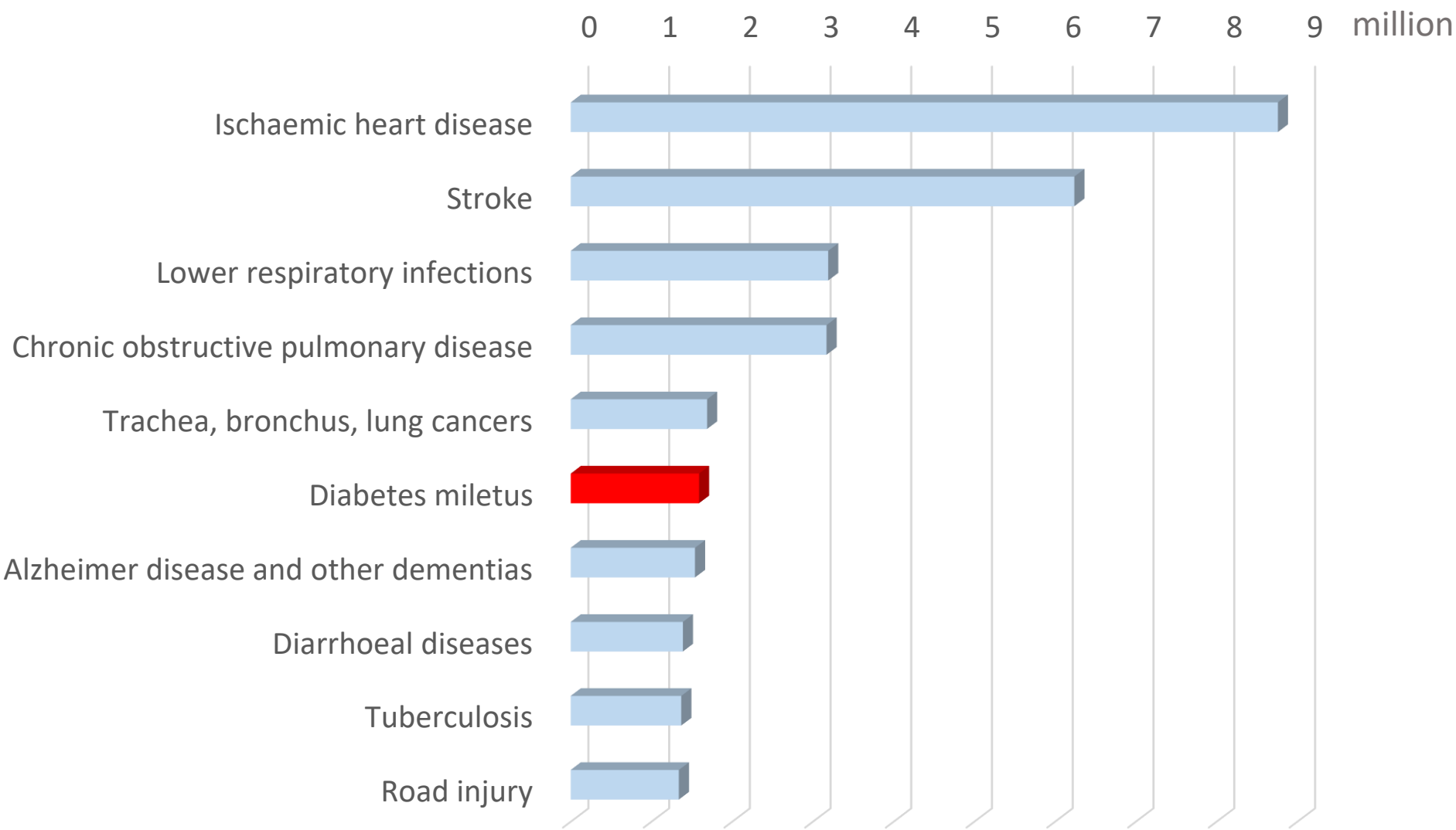
DIABETES WORLDWIDE

6TH LEADING CAUSE OF DEATH IN THE WORLD



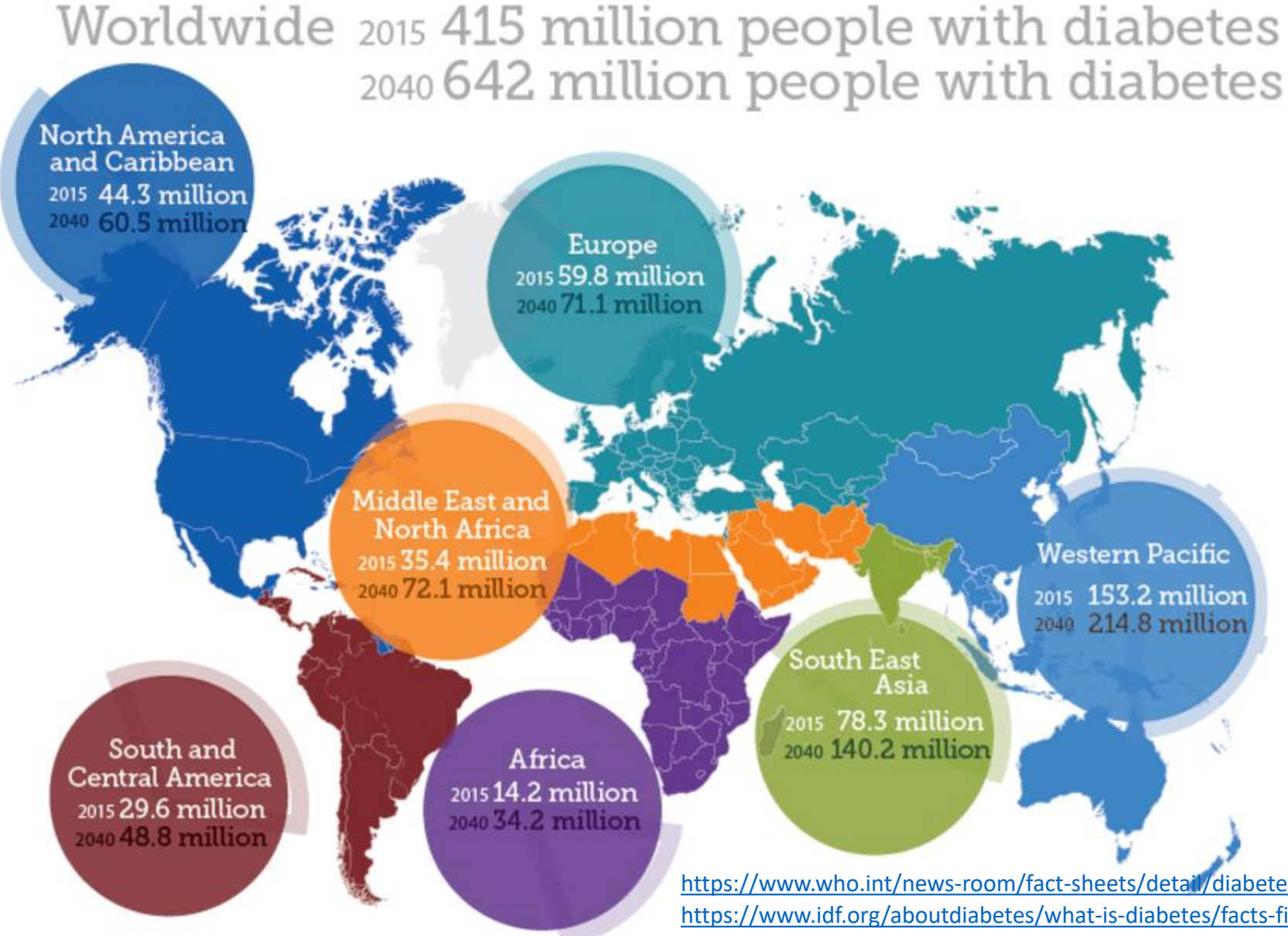
United Nations World Health Organization Top Ten Causes of Death Factsheet

<http://www.who.int/mediacentre/factsheets/fs310/en/>



DIABETES WORLDWIDE

1980-2014 SAW AN INCREASE OF 400%



2015



One in 11 adults
has diabetes

2040



One in 10 adults
will have diabetes



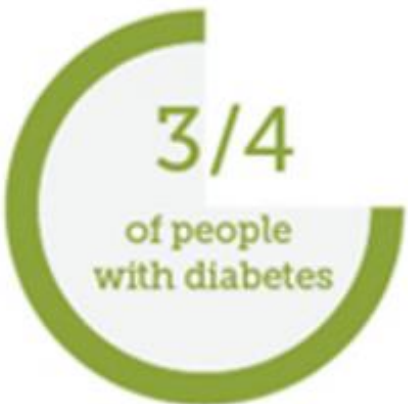
One in two adults
with diabetes is undiagnosed



5.0 million deaths in 2015



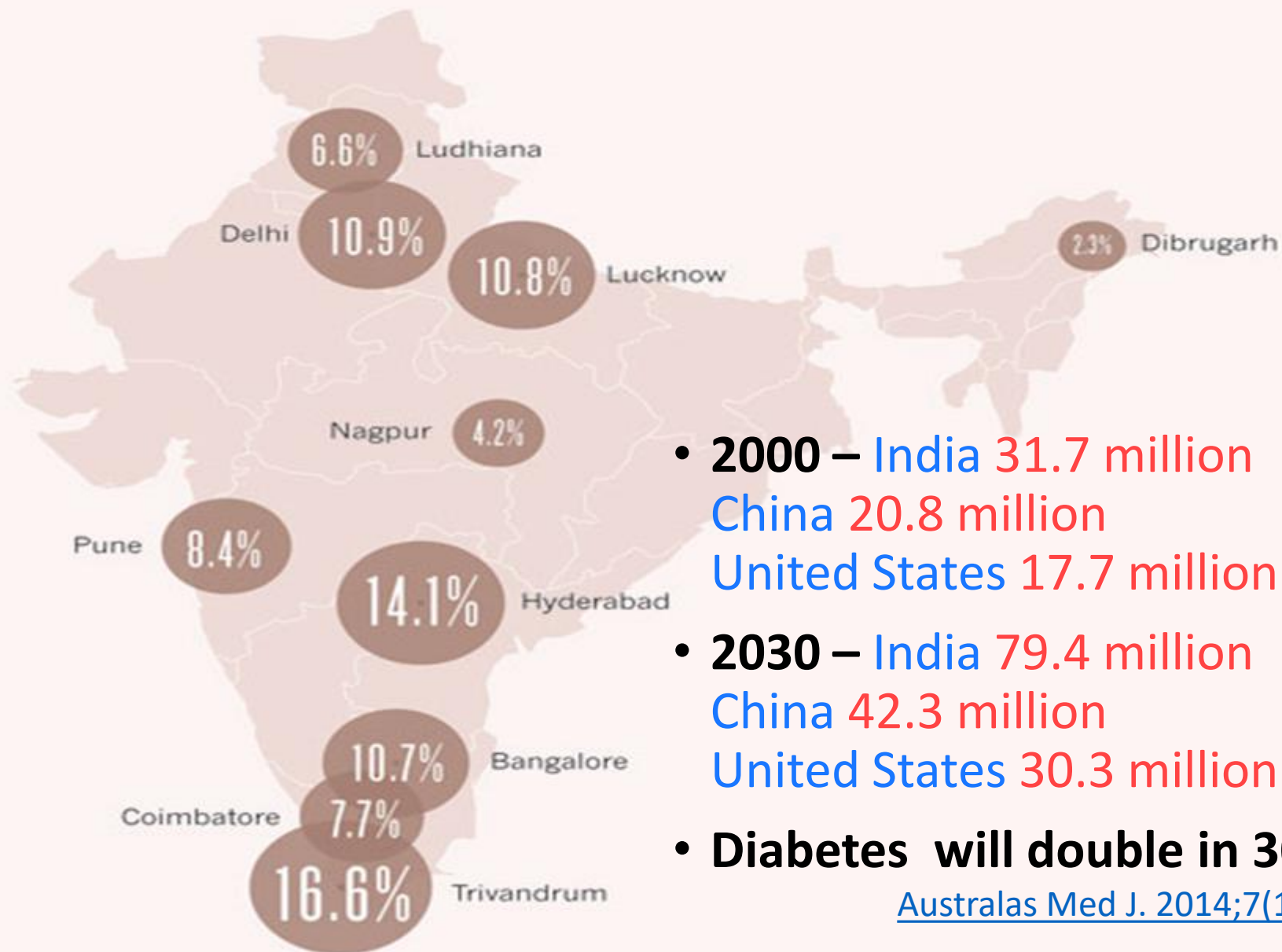
12% of global
health expenditure
is spent on diabetes



live in low and
middle income countries

DIABETES LEADERS WORLDWIDE

INDIA LEADS THE DIABETES EPIDEMIC



- **2000** – India 31.7 million
China 20.8 million
United States 17.7 million
- **2030** – India 79.4 million
China 42.3 million
United States 30.3 million
- **Diabetes will double in 30 years**

[Australas Med J. 2014;7\(1\): 45–48](#)

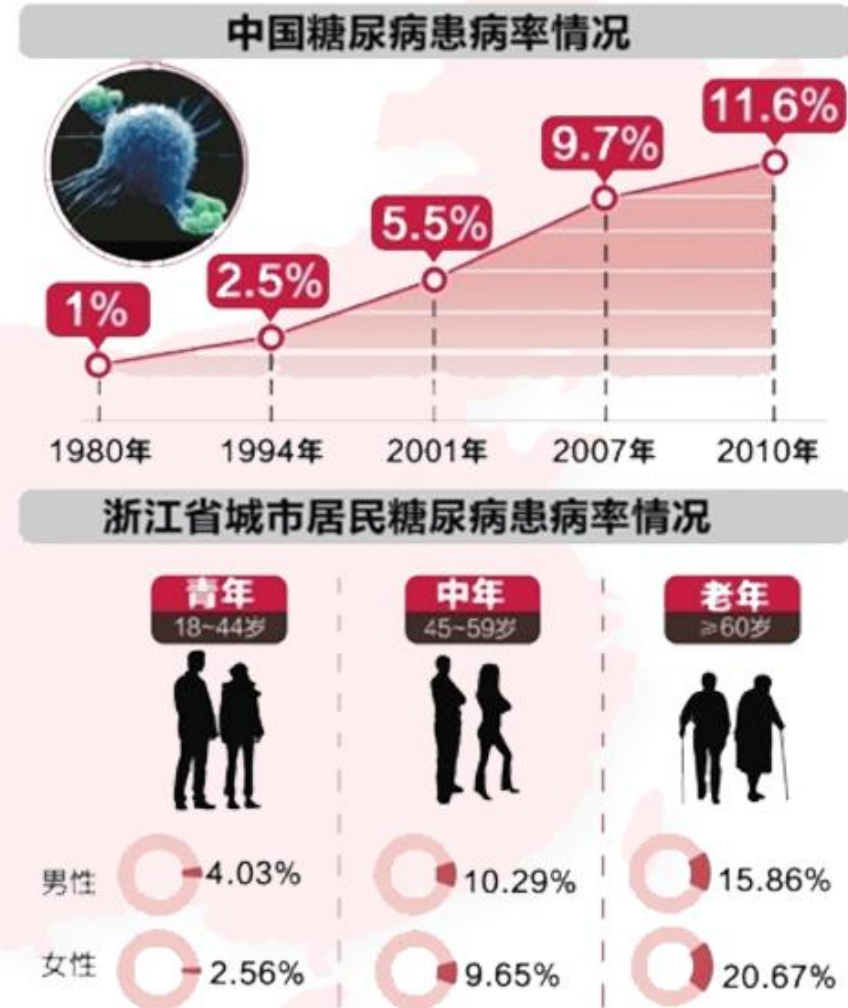
DIABETES WORLDWIDE

CHINA'S DIABETES EPIDEMIC

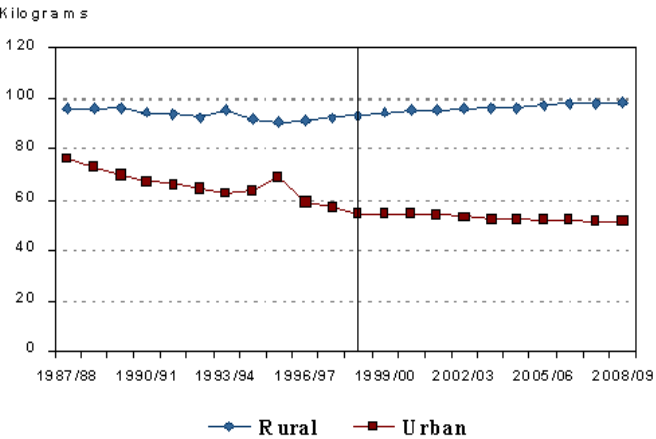


- Prior to 1980 less than 1% of the Chinese population had diabetes .
- By 2010
 - 11.6% had diabetes
 - 50.1% of Chinese adults had prediabetes
- **Causes?** Increase in dietary fat, meat, processed carbohydrates and sedentary lifestyle triggering an obesity epidemic and insulin resistance.

[JAMA 2013 Sep4;310\(9\):948-59](#)



China Per Capita Rice Consumption (Rural vs. Urban)



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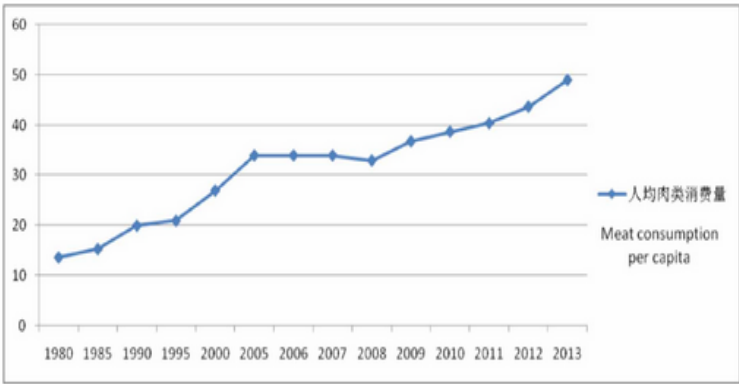
Table 1 Shifts in energy sources for 20- to 45-year-old adults (China Health and Nutrition Survey 1989–1997)

	Percentage of energy from fat				Percentage of energy from carbohydrates			
	1989	1991	1993	1997	1989	1991	1993	1997
Urban	21.4	29.7	32.0	32.8	65.8	58.0	55.0	53.3
Rural	18.2	22.5	22.7	25.4	70.0	65.6	65.2	62.1
Low-income	16.0	19.3	19.7	23.0	72.9	69.2	68.6	64.5
Middle-income	20.3	25.2	25.5	27.1	67.5	62.6	62.2	60.3
High-income	21.5	30.0	31.5	31.6	65.4	57.5	55.4	54.8
Total	19.3	24.8	25.5	27.3	68.7	63.2	62.1	59.8

Du S, Lu B, Zhai F, Popkin BM. A new stage of the nutrition transition in China. Public Health Nutr. 2002 Feb;5(1A):169-174.

China's Growing Meat Demands

Figure 2. Annual meat consumption per capita, China, 1980–2013
Compiled from National Bureau of Statistics of China. (1980–2013). China statistical yearbook, Beijing. China: China Statistical Press.



[Impact of Meat Consumption on Health and Environmental Sustainability, Talia Raphaely, Dora Marinova, October 19, 2015, 223 pages](#)

CHINA'S GROWING MEAT DEMAND

The growing Chinese urban middle class is pursuing western dietary styles including increasingly excessive meat consumption. As a consequence, per capita meat consumption (see Figure 2) has grown from 13.7 kg per person in 1980, to 27 kg in 2000 and 49 kg per person in 2013 (National Bureau of Statistics of China, 2014). Rapid urbanization brings rural population to the cities where they adopt the urban and more affluent consumption behaviours, including dietary habits such as eating less food grains and vegetables and more livestock products.

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[Impact of Meat Consumption on Health and Environmental Sustainability, Talia Raphaely, Dora Marinova, October 19, 2015, page 222](#)



**Walter Kempner MD
of Duke University
designed a high carb,
low fat vegan diet that was
90% carbs, 5% fat, 5% protein.**

WHY REVERSE DIABETES?

DISABILITY, SUFFERING, CHRONIC DISEASES



- Heart Disease (#1), high blood pressure (#13), stroke (#5)
- Kidney disease (nephropathy) (#9) / kidney transplantation
- Eye Complications (retinopathy), blindness
- Neuropathy and nerve damage
- Sexual dysfunction – erectile dysfunction, reduced sensation
- Pregnancy complications
- Periodontal diseases and dental disease increase
- Infections and illness increase
- Foot complications, poor wound healing and amputations
- Gastro paresis - where the stomach takes too long to empty
- Depression

- Siblings and children of type 1 diabetics
- Autoimmune trigger?
- Early infection?
- Early dairy, gluten and animal food introduction
 - <http://www.diabetesandenvironment.org/home/other/diet/wheat-dairy>
 - <http://ajcn.nutrition.org/content/71/6/1525.long>
- Vitamin D insufficiency?
 - [Diabetes Obes Metab. 2010 Sep;12\(9\):737-43](#)
- Environmental exposure?
 - <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3385937/>
- Cesarean section?
 - <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3237660/>
- Antibiotics five or more times in the first 2 years of life
 - <http://f1000.com/prime/ext/727002248?referrer=GOOGLE>
 - <https://www.ncbi.nlm.nih.gov/pubmed/27560963>
- High fat, especially saturated fat diet?
 - <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3609492/>

RISK FACTORS FOR TYPE 2 DIABETES

<https://www.niddk.nih.gov/health-information/diabetes/overview/what-is-diabetes>



- **Overweight, Obesity**
- Diet - ↑ fat, ↑ meat, ↑ processed carbs, ↓ fiber
- Diabetic medications
 - <https://www.drmcDougall.com/misc/2017nl/jan/diabetic.htm>
 - <https://www.drmcDougall.com/misc/2011nl/jul/fav5.htm>
- Sedentary Lifestyle
- Pre-diabetes
- > age 45
- Gestational diabetes
- Mother having a baby ≥ 9 pounds at birth
- Toxins – organochlorine exposure
- Altered intestinal bacterial (microbiome)
- Low HDL cholesterol, high triglycerides, high blood pressure
- Family history of diabetes
- African Americans, Hispanic/Latino Americans, Asian Americans and Pacific Islanders, and American Indians and Alaska Natives



- Excess calories
- Animal products (meat, poultry, eggs, dairy foods)
- Added fats and oils
- Added sugars
- Processed grains
- Decreased whole grains
- Reduced fiber

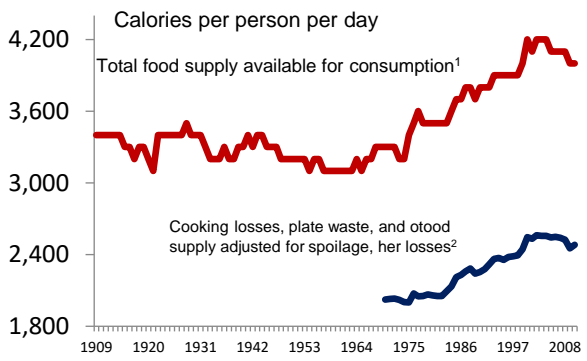


DIABETES EPIDEMIC CAUSES WORLD WIDE?

SAME AS U.S. DIET CHANGE OVER LAST 100 YEARS

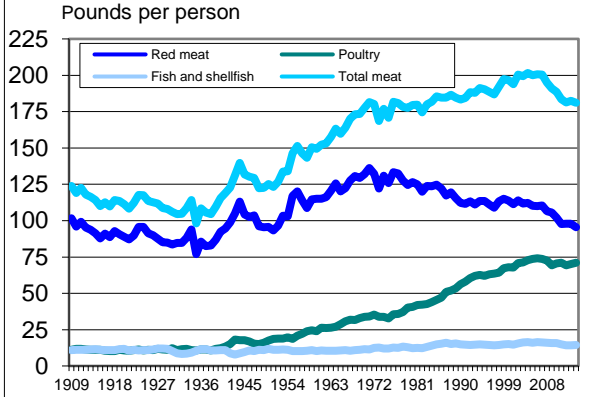


[Calorie Availability and Consumption Patterns Over The Last 100 Years]



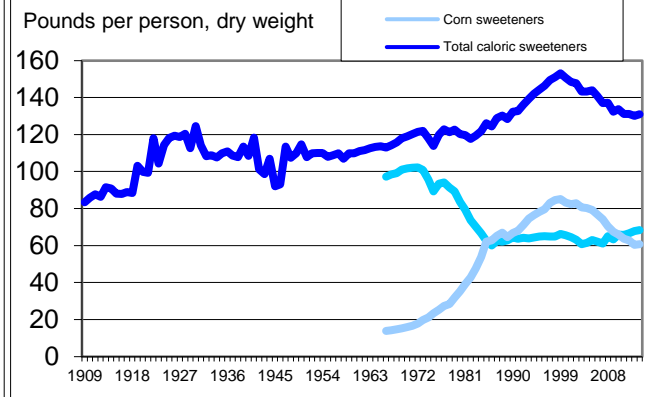
¹Source: USDA, Centers for Nutrition Policy and of Service, Loss-Adjusted Food Availability Data. Not calculated for years before 1970.
the Food Supply Data based on USDA, Economic Research Service's Food Availability Promotion, Nutrient Content Data. Rounded to the nearest hundred.
²Source: USDA, Economic Research Service

[United States Meat Consumption Patterns Over The Last 100 Years]



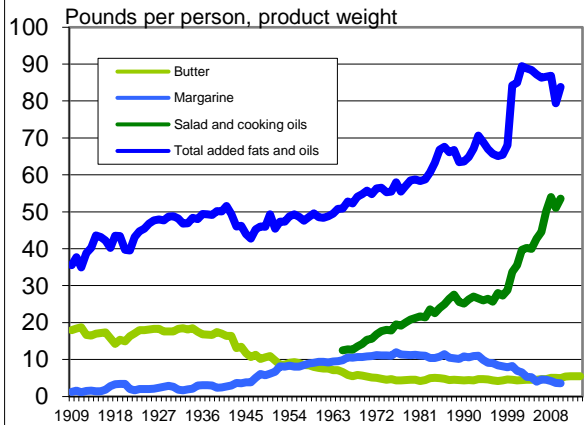
Boneless, trimmed (edible) weight equivalent.
Source: USDA, Economic Research Service, Food Availability Data.

[Calorie Sweetener Consumption Patterns in the United States Over The Last 100 Years]



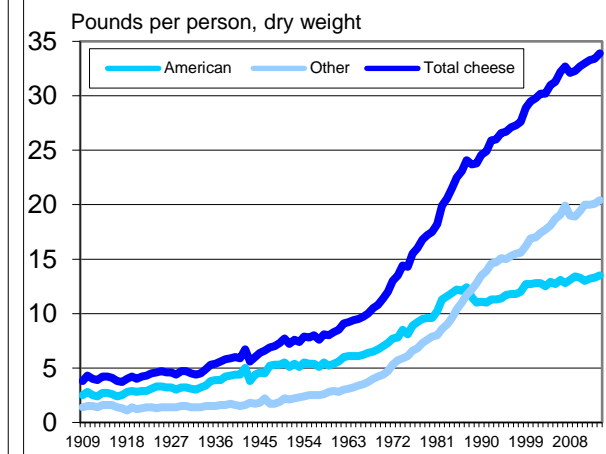
Total caloric sweeteners include refined sugar, corn sweeteners, honey, and other edible syrups. Source: USDA, Economic Research Service, Food Availability Data.

[Fats and Oil Consumption Patterns in the United States Over The Last 100 Years]



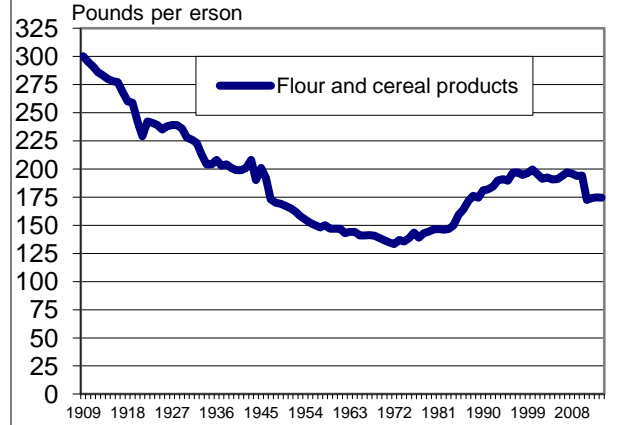
Note: In 2000, the number of firms reporting vegetable oil production increased.
Source: USDA/Economic Research Service estimate using data from Census Bureau.

[Cheese Consumption Patterns in the United States Over The Last 100 Years]



Source: USDA, Economic Research Service, Food Availability Data.

[Flour and Cereal Product Consumption Patterns in the United States Over The Last 100 Years]



Does not include rice after 2010.
Source: USDA/Economic Research Service, Food Availability Data.



U.S. FOOD CONSUMPTION AS A % OF CALORIES

PLANT FOOD:

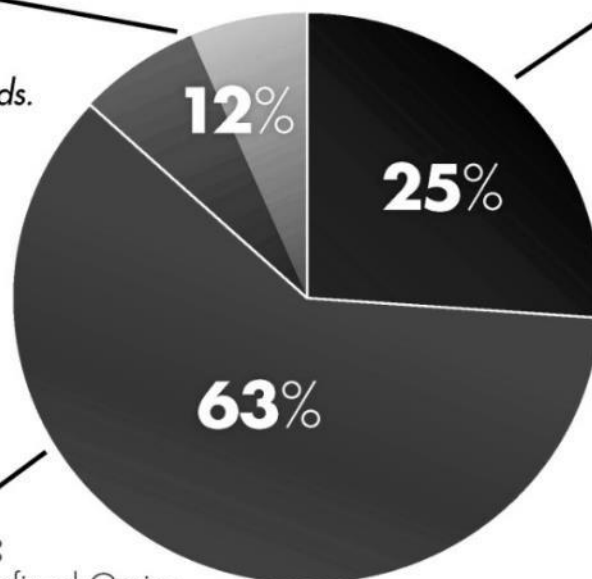
Vegetables, Fruits, Legumes,
Nuts & Seeds, Whole Grains

Fiber is found only in plant foods.

NOTE: Up to half of this category may be processed, for example almonds in candy bars, apples in apple pies or spinach in frozen spinach soufflé, and of course these would not be healthy choices. The focus should be on whole unprocessed vegetables, fruits, legumes, nuts and seeds and whole grains.

PROCESSED FOOD:

Added Fats & Oils, Sugars, Refined Grains



ANIMAL FOOD:

Meat, Dairy, Eggs, Fish, Seafood

Cholesterol is found only in animal foods. Animal foods are the **PRIMARY** source of saturated fat.

GUIDE TO HEALTHY EATING:

Much easier to understand than the USDA Food Pyramid, with no food industry influence.

Eat **LESS** from the animal and processed food groups and **MORE** whole foods from the plant food group.

In general, food from the animal and processed food group contribute to disease, while **WHOLE** foods from the plant group contribute to good health.

Source: USDA Economic Research Service, 2009; www.ers.usda.gov/publications/EIB33; www.ers.usda.gov/Data/FoodConsumption/FoodGuideIndex.htm#calories

New York Coalition for Healthy School Food * www.healthyschoolfood.org

Special thanks to Joel Fuhrman, MD, author of *Disease Proof Your Child: Feeding Kids Right* * Graphics by MichelleBando.com

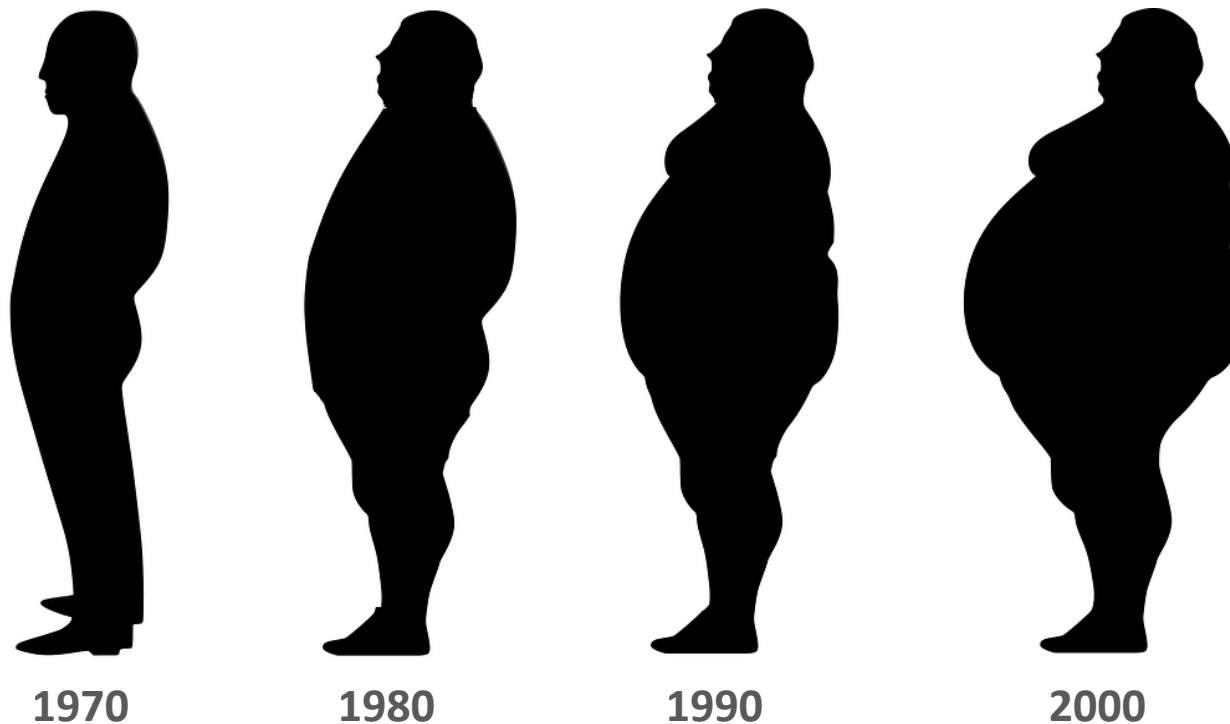
© 2009, New York Coalition for Healthy School Food

EPIDEMIC OF OBESITY = DIABETES

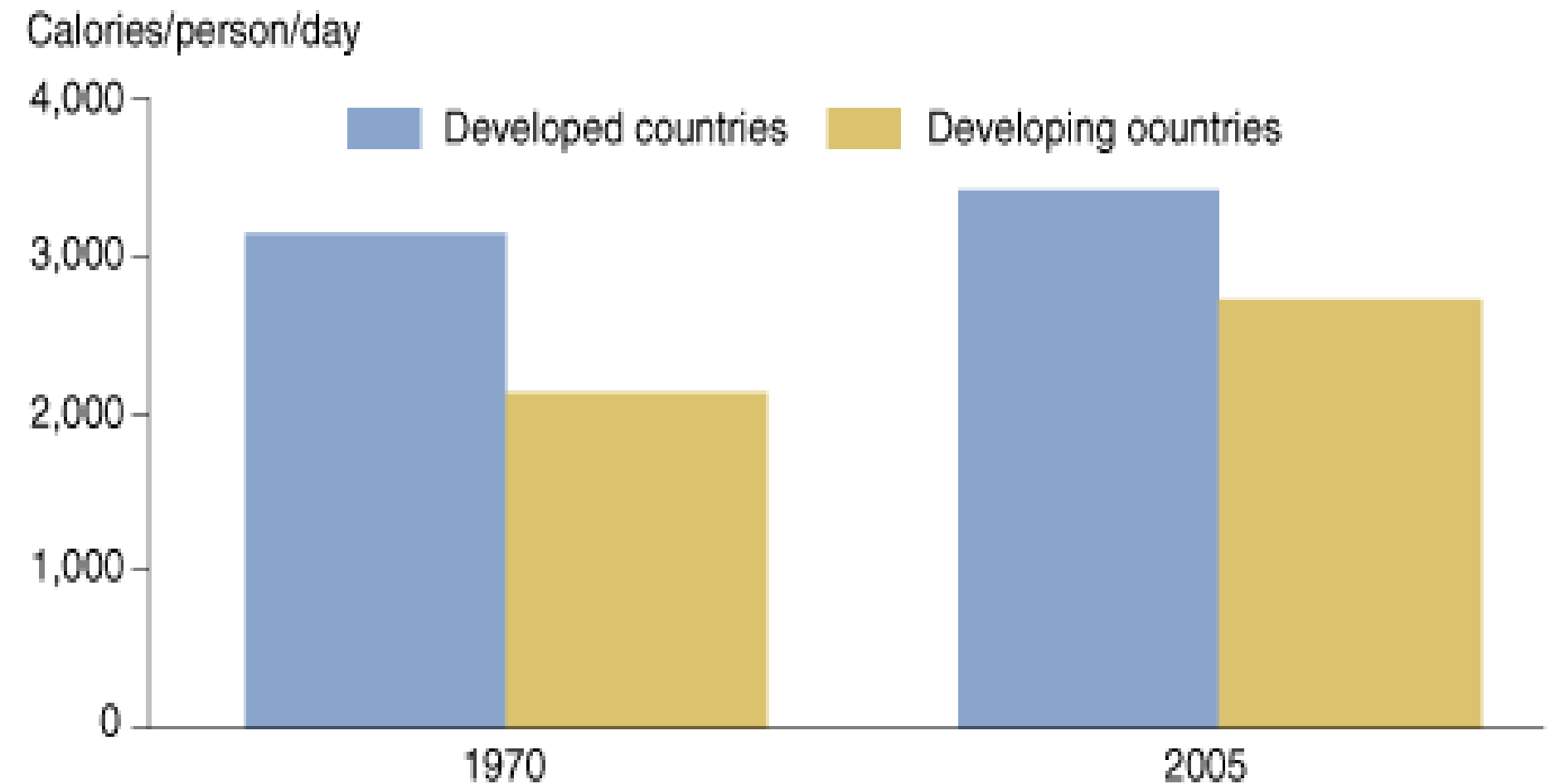
INCREASED CALORIES EXPLAINS U.S. OBESITY EPIDEMIC



- **Children were 8.8 lbs heavier in 2000 than 1970 and consumed an extra 350 calories per day**
- **Adults were 18.92 lbs heavier in 2000 than 1970 and consumed an extra 500 calories per day**



CALORIE AVAILABILITY IS INCREASING IN DEVELOPING COUNTRIES

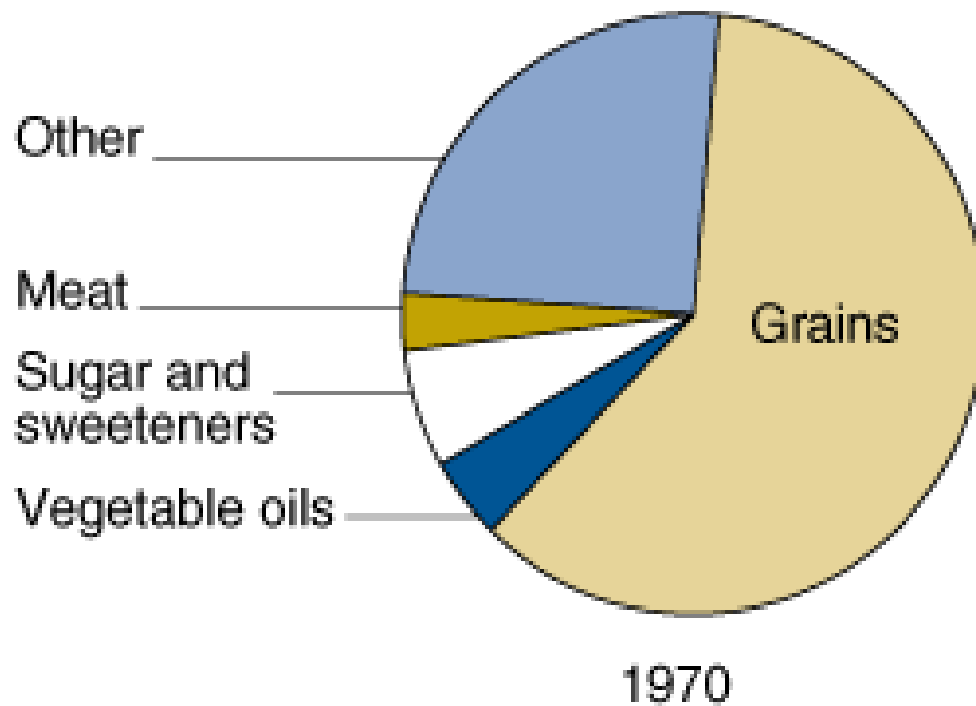


Source: Food and Agriculture Organization of the United Nations.

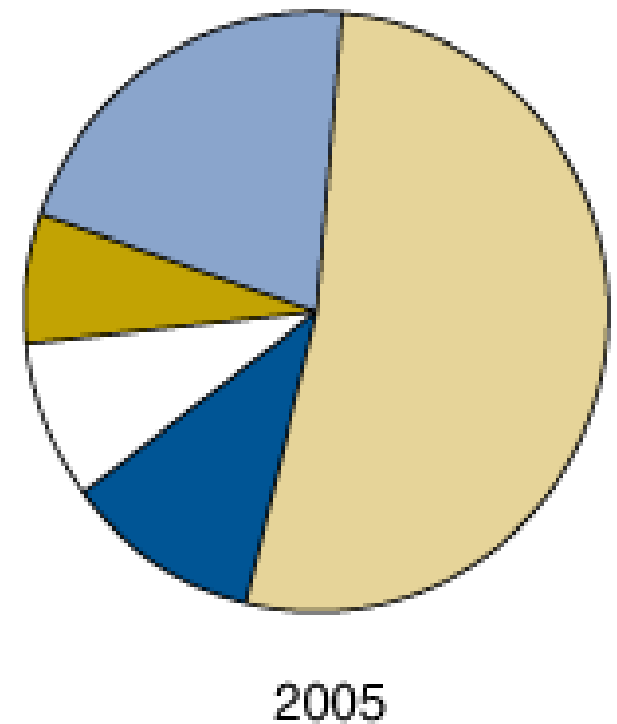
CALORIE AVAILABILITY IS INCREASING IN DEVELOPING COUNTRIES



Grain share of developing country diet shrinks...

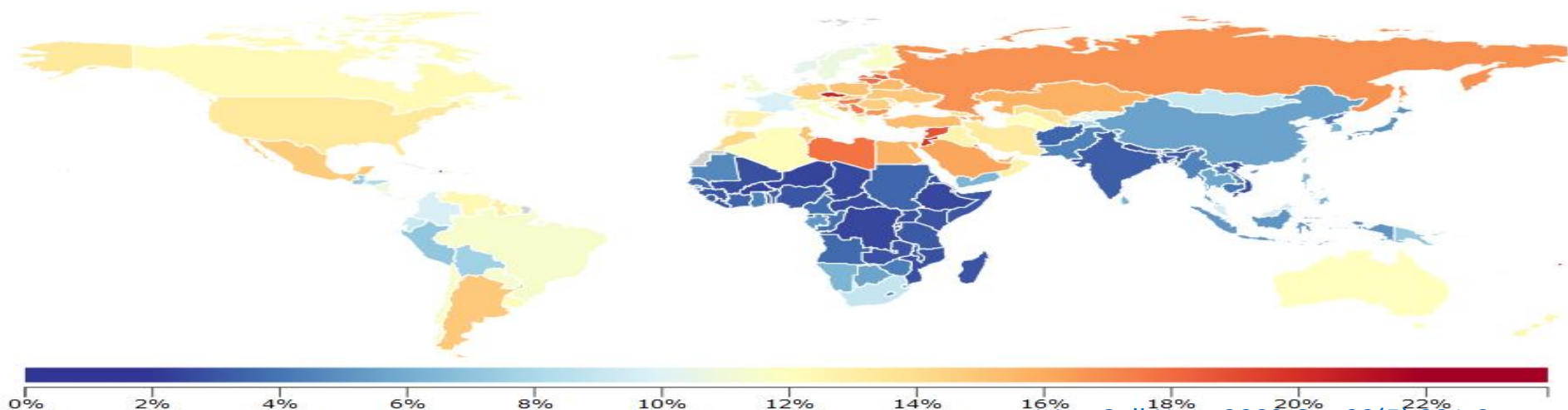


...as meat and vegetable oil share rises



Source: Food and Agriculture Organization of the United Nations.

- 30% of world's population is overweight
- 10% are obese
- Obesity has doubled from 1980 to 2014
- 2014 an estimated 41 million children under the age of 5 years were overweight or obese.
- Overweight and obesity are rising in low- and middle-income countries, especially in cities





- **Type 1 Diabetes**
 - Frequent urination
 - Unusual thirst
 - Extreme hunger
 - Unusual weight loss
 - Extreme fatigue
 - Irritability
- **Type 2 Diabetes**
 - Any of Type 1 symptoms
 - Frequent infections
 - Blurred vision
 - Slow wound healing
 - Tingling, numbness in the hands and feet
 - Recurring skin, gum or bladder infections

WARNING SIGNS OF DIABETES

HOW DO YOU KNOW?



- Mid-section weight gain
- Reduced physical activity
- Get your urine checked for sugar, protein and ketones
- Get fasting blood sugar, insulin and HbA1C levels
- If your blood sugar is 90 mg/dl or more, HbA1C > 5.7, fasting insulin > 6 and you are overweight and sedentary



DO SOMETHING NOW



- Normal blood sugar 70-(90)100 mg/dl fasting.
- Pre-diabetes - blood sugar 100-125 mg/dl fasting.
- Pre -diabetes or impaired glucose tolerance (IGT), blood sugar 140-199 mg/dl 2 hours after 75 gm of glucose or a meal.
- Diabetes – blood sugar ≥ 126 mg/dl after 8 hour fast.
- Diabetes – blood sugar ≥ 200 mg/dl 2 hours after 75 grams of glucose, a meal or any time.

<https://www.cdc.gov/diabetes/basics/getting-tested.html>

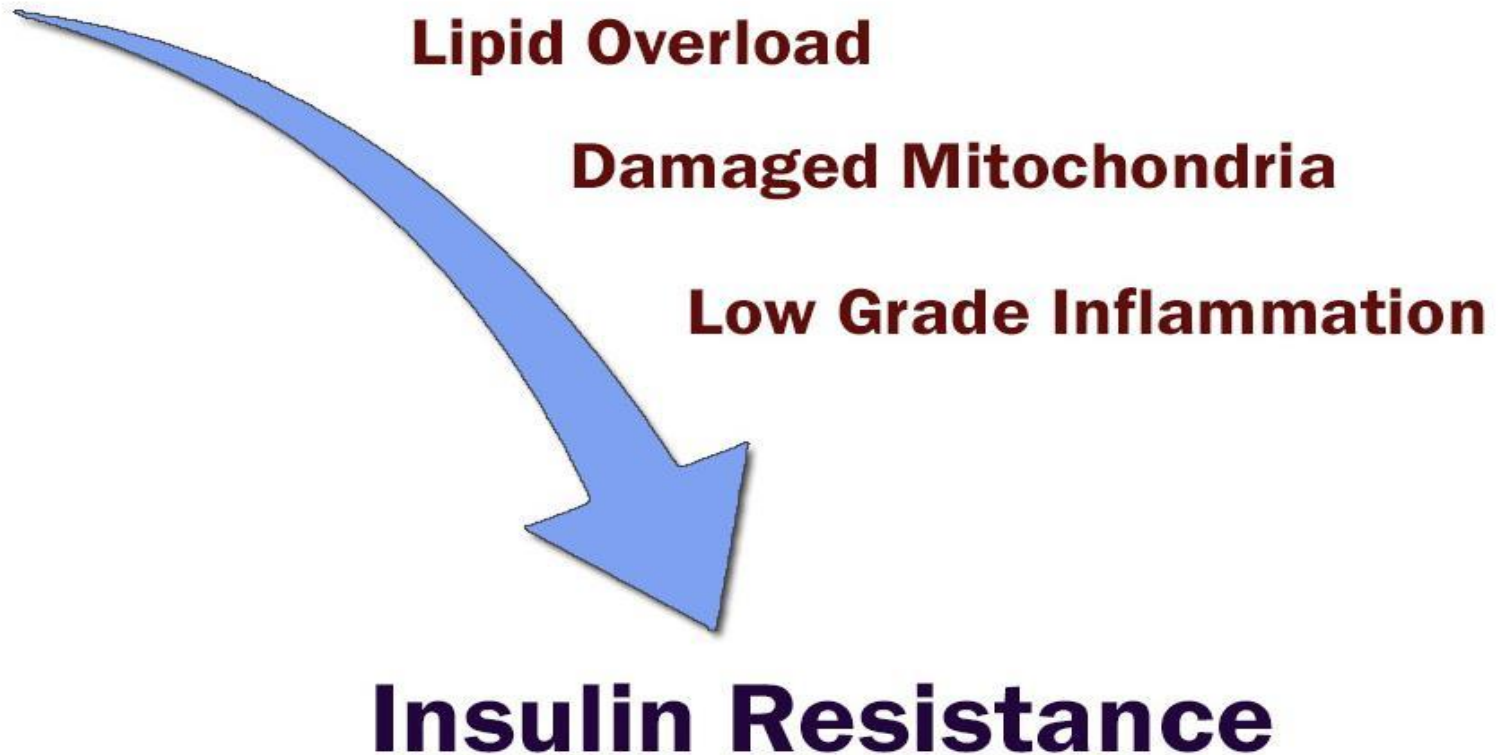
<https://www.diabetes.org/a1c/diagnosis>



- Insulin resistance is the inability of insulin, a hormone secreted by the beta-cells in the pancreas to “push” sugar (glucose) into the cell to be burned as energy
- FAT in the muscle and liver cells, adipose tissue and pancreas BLOCK INSULIN’S ability to allow sugar into the cell = INSULIN RESISTANCE
- INSULIN RESISTANCE – excess fat stored in tissues that weren’t designed for excess fat (muscle, liver & pancreas)

[Hardy OT, Czech MP, Corvera S. What causes the insulin resistance underlying obesity?. *Curr Opin Endocrinol Diabetes Obes.* 2012;19\(2\):81–87. doi:10.1097/MED.0b013e3283514e13](#)

High Fat Diet



INSULIN RESISTANCE

“REVERSIBLE” CAUSES OF TYPE 2 DIABETES



- Obesity and excess weight
- Excess calories consumption
- Diets high in fats and oils, sugars, meats, cheeses and refined grains
- Processed foods versus whole foods
- Lack of physical activity
- Environmental toxicity – reduce exposure – if GGT – glutathione need – NAC, selenium
- Abnormal bacteria – probiotics
- Nutritional deficiencies – vitamin D, etc.



- In 1927 Dr. Shirley Sweeney studied healthy medical students placed in 4 groups
 - High carbohydrate
 - High meat
 - High fat
 - Fasting
- After two days, the glucose tolerance test (GTT) showed
 - Normal blood sugar curve for high carbohydrate
 - Prediabetic response for high meat
 - Severe diabetic response for high fat
 - Diabetic response with fasting

Dietary Factors That Influence the Dextrose Tolerance Test: A Preliminary Study,
J. Arch Intern Med (Chic). 1927;40(6):818-830.

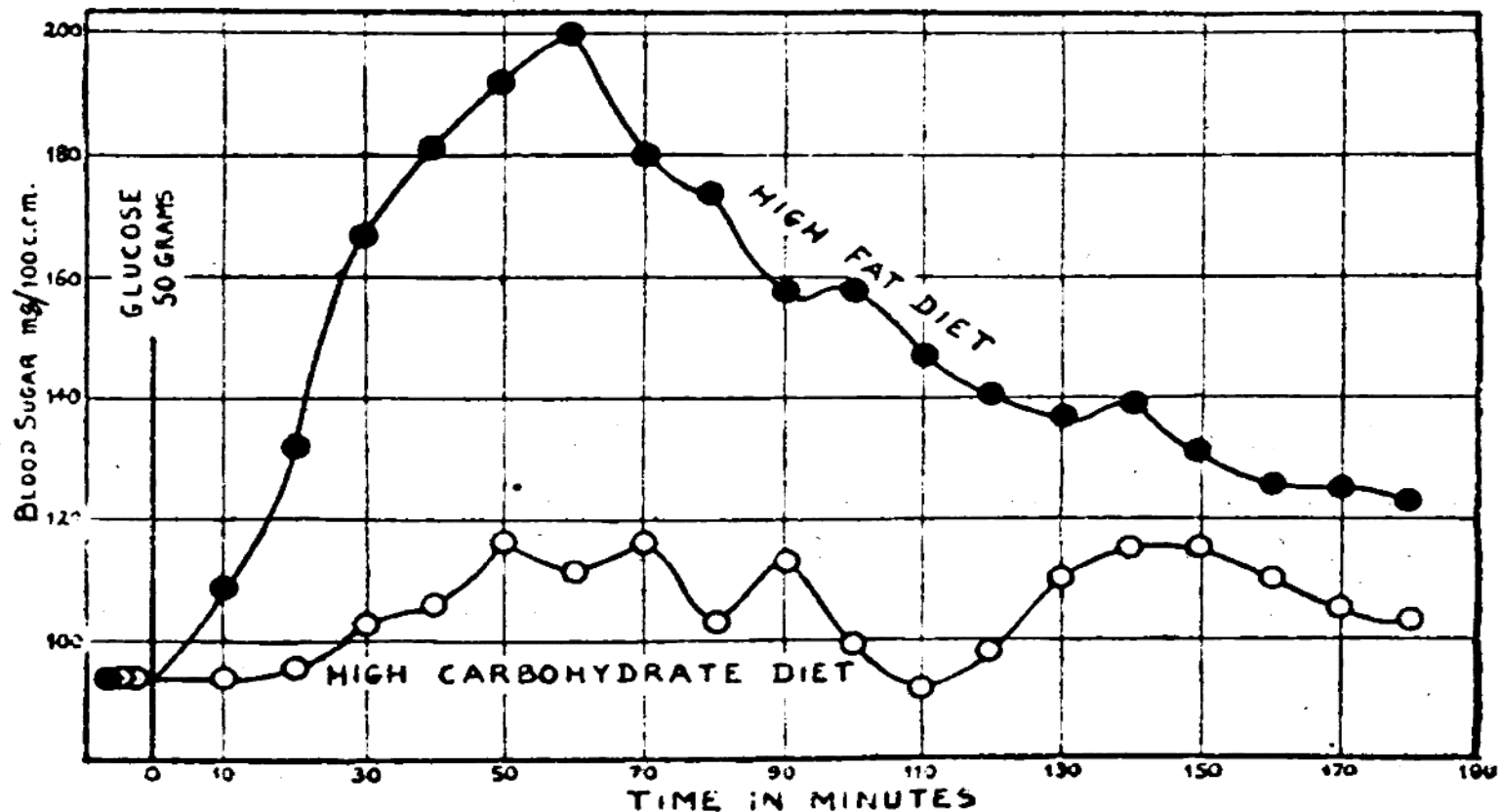


FIG. 1.—Two blood glucose-tolerance curves from the same normal subject—one when taking a low carbohydrate-high fat diet and the other when taking an equicaloric high carbohydrate-low fat diet. On the former diet the glucose tolerance is impaired, on the latter it is improved (Himsworth, 1934b).

INSULIN RESISTANCE

THE EFFECTS OF CARBS AND FATS

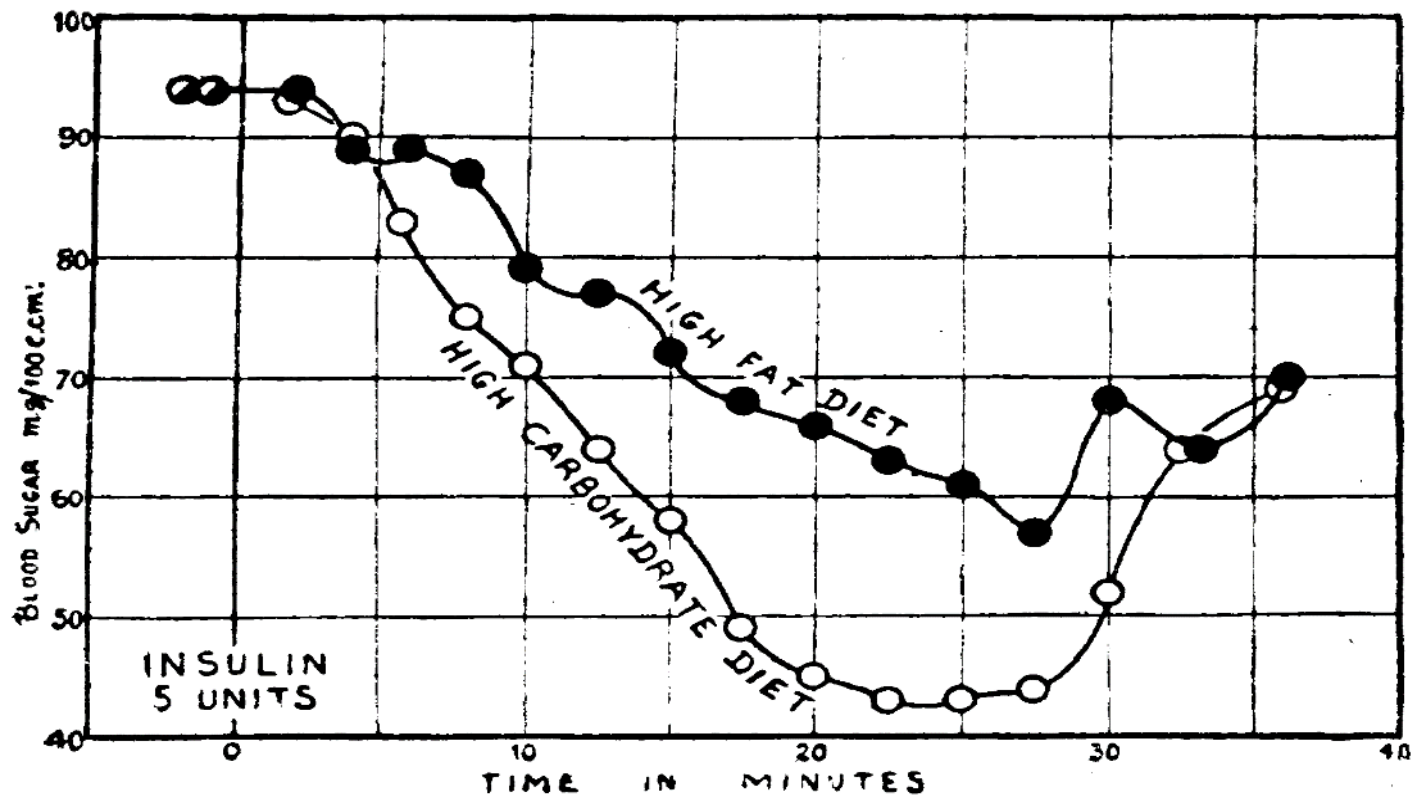


FIG. 2.—Two insulin-depression curves from the same normal subject—one when taking a low carbohydrate-high fat diet and the other when taking an equicaloric high carbohydrate-low fat diet. On the first diet the insulin injected intravenously comes into action more slowly and to less extent than when the subject takes the second diet (Himsworth, 1934b).

INSULIN RESISTANCE

HIGH “WHOLE FOOD” CARBOHYDRATE DIETS ARE GOOD!

90



- In 1971, John D. Brunzell, MD found a high carbohydrate diet (85%) compared to a baseline carbohydrate diet (45%) after a GGT had a greater and more rapid drop in blood sugar, and lower fasting insulin levels after 10 days.



[“Improved glucose tolerance with high carbohydrate feeding in mild diabetes.” NEJM, 1971;284\(10\)521-4](#)

WHAT CAUSES INSULIN RESISTANCE?

EXCESS FAT IN MUSCLE, LIVER AND PANCREATIC CELLS (4:55 MIN)



WHY ARE CARBOHYDRATES GOOD FOR DIABETES?



- Optimal fuel
- Do not directly cause diabetes or insulin resistance
- Eaten in their “whole” state come with fiber slow blood sugar absorption and reduce inflammation
- High carbohydrate high fiber diets can reverse diabetes



WHY IS SUGAR BAD FOR DIABETES?



- Sugar (a carbohydrate) does not directly cause diabetes
- Adding sugar to food increases:
 - Total calorie consumption
 - Rapid glucose rise (no fiber)
- Can lead to obesity, hormonal changes, and subsequent insulin resistance



HOW DOES FIBER AFFECT BLOOD SUGAR?



- Fiber slows the absorption of glucose into the blood stream and is usually attached to more “intact” carbohydrates which have a slow blood sugar absorption.
- Fiber is found only in plant food – beans, whole “intact” grains, root vegetables, non-starchy vegetables, whole fruit, nuts and seeds.
- Fiber creates a microbiome (gut bacteria) that reduce the risk to diabetes.



CAN DIET REDUCE INSULIN NEED AND COMPLICATIONS IN TYPE 1 DIABETES?... YES!



- Insulin is still needed for Type 1 diabetes
- Amount can be reduced by a low-fat, high complexed carbohydrate diet that can:
 - Reduce inflammation
 - Protect the body from tissue damage by lowering blood sugar and insulin levels



Diabetes Type - C-Peptide Testing & Diabetes Antibodies

C-peptide and insulin are released from the pancreas at the same time and in about equal amounts



	Low C-Peptide (<1/0 ng/mL)	Medium C-Peptide (1.0-2.0 ng/mL)	High C-Peptide (2.0 ng/mL+)
Negative Antibody Test	Type 2 diabetes with low insulin production (insulin likely)	Type 2 diabetes with impaired insulin production (insulin likely)	Type 2 diabetes with high insulin production (insulin unlikely)
Positive (1 diabetes antibody)	Type 1.5 diabetes (insulin necessary)	Type 1.5 diabetes (insulin necessary)	Type 1.5 diabetes (insulin necessary over time)
Positive (2+ diabetes Antibodies)	Type 1 diabetes (insulin necessary)	Type 1 diabetes (insulin necessary)	Type 1 diabetes (insulin necessary over time)

HOW DO YOU REVERSE DIABETES?

LOWERING INSULIN RESISTANCE



- Avoid processed sugars and eat a low fat, whole food, plant-based, high “intact” carbohydrate, high fiber diet
- Exercise to burn fat from muscle and liver cells
- Diet and exercise is the fastest way

Can Diet Reverse Type 2 Diabetes?



- A whole food, plant-based, high carbohydrate, low fat vegan diet can reverse diabetes.
- Olfert MD, Wattick RA. Vegetarian Diets and the Risk of Diabetes. *Curr Diab Rep.* 2018;18(11):101. Published 2018 Sep 18. doi:10.1007/s11892-018-1070-9
- Tonstad S, Stewart K, Oda K, Batech M, Herring RP, Fraser GE. Vegetarian diets and incidence of diabetes in the Adventist Health Study-2. *Nutr Metab Cardiovasc Dis.* 2013;23(4):292–299. doi:10.1016/j.numecd.2011.07.004
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- Barnard ND, Cohen J, Jenkins DJ, et al. A low-fat vegan diet improves glycemic control and cardiovascular risk factors in a randomized clinical trial in individuals with type 2 diabetes. *Diabetes Care.* 2006;29(8):1777–1783. doi:10.2337/dc06-0606
- Jenkins DJ, Kendall CW, Marchie A, et al. Type 2 diabetes and the vegetarian diet. *Am J Clin Nutr.* 2003;78(3 Suppl):610S–616S. doi:10.1093/ajcn/78.3.610S
- Story L, Anderson JW, Chen WJ, Karounos D, Jefferson B. Adherence to high-carbohydrate, high-fiber diets: long-term studies of non-obese diabetic men. *J Am Diet Assoc.* 1985;85(9):1105–1110.
- Barnard RJ, Massey MR, Cherny S, O'Brien LT, Pritikin N. Long-term use of a high-complex-carbohydrate, high-fiber, low-fat diet and exercise in the treatment of NIDDM patients. *Diabetes Care.* 1983;6(3):268–273. doi:10.2337/diacare.6.3.268
- Anderson JW, Ward K. High-carbohydrate, high-fiber diets for insulin-treated men with diabetes mellitus. *Am J Clin Nutr.* 1979;32(11):2312–2321. doi:10.1093/ajcn/32.11.2312
- Anderson JW, Ward K. Long-term effects of high-carbohydrate, high-fiber diets on glucose and lipid metabolism: a preliminary report on patients with diabetes. *Diabetes Care.* 1978;1(2):77–82. doi:10.2337/diacare.1.2.77

HOW DO YOU REVERSE DIABETES?

FIBER IS A SAFE AND EFFECTIVE TREATMENT



- Significantly lower blood lipids
- Reduce risk to cardiovascular disease
- Reduce fasting blood sugar
- Help maintain desirable body weight
- Reduce or eliminate insulin and oral medications
 - 70% calories as complex carbohydrates with 35g of dietary fiber reduces insulin requirements:
 - 30-40% for Type 1
 - 75-100% for type 2 (in most cases treatment discontinued after 10-21 days)
- Serum cholesterol reduced by 24-30%

HOW DO YOU REVERSE DIABETES?

A WHOLE-FOOD, LOW-FAT, FIBER-RICH PLANT-BASED DIET IS A POWERFUL TREATMENT



- Low in fat
- High in fiber
- High in unprocessed carbohydrates
- Grains eaten in their “intact” form
- Low glycemic
- Rich in protective antioxidants and phytochemicals
- No animal products
- No added oils
- Sustainable for the expanding world population
- Preserves the environment and ecosystems
- AND...

SHOP FOR AND EAT ONLY WHOLE PLANT FOODS:

All vegetables (starchy or non-starchy), especially green leafy vegetables, beans/legumes, lentils, peas, whole “intact” grains, yams, sweet potatoes, potatoes, squash and whole fruit (especially berries). Flaxseed or chia seeds 1-2 tbs/d. A palm full or less of raw nuts daily.

AVOID:

Dairy products, eggs, poultry, meat, fish, added oils, added sugar and processed/refined carbohydrates.

HERBS/SPICE:

You are encouraged to use as many different herbs and spices as you desire.

SALT:

If hypertensive don't add salt.

BREAKFAST – Cooked “intact” whole grains for breakfast with unsweetened nut milk, berries, 1-2 tbs ground flaxseed, 3-4 walnuts halves (i.e. steel cut oats, rolled oats, quinoa, brown rice, barely, etc)

LUNCH – Large vegetable salad – greens, vegetables, beans, oil-free dressing, nuts OR vegetable soup with beans, lentils, peas and/or whole grains with vegetable broth

DINNER – Half plate vegetables, mostly greens steamed or “quick” boiled; ½ plate whole grains and/or legumes and/or yam, sweet potato, potato, squash and/or cooked whole grains

SNACKS – whole fruit, oil-free bean dip, raw vegetables, ≤ palm full of raw nuts daily

DRINK – Water, green tea, black tea, unsweetened nut milks, decaffeinated or caffeinated coffee

HOW DO YOU REVERSE DIABETES?

TRIAD EXERCISE PROGRAM



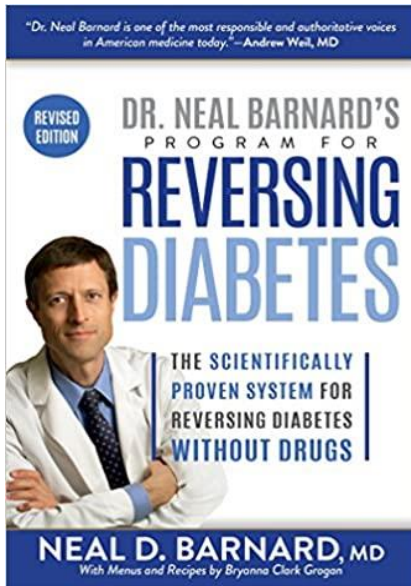
- DO a half-hour minimum of daily aerobic exercise.
- DO strength training (circuit training) 15-30 minutes 3 to 4 days per week.
- DO flexibility training (tai chi, yoga, Pilates, stretching) ten to sixty minutes daily.
- To speed up weight loss, interval training is recommended instead of aerobic exercise; circuit training is optimal.



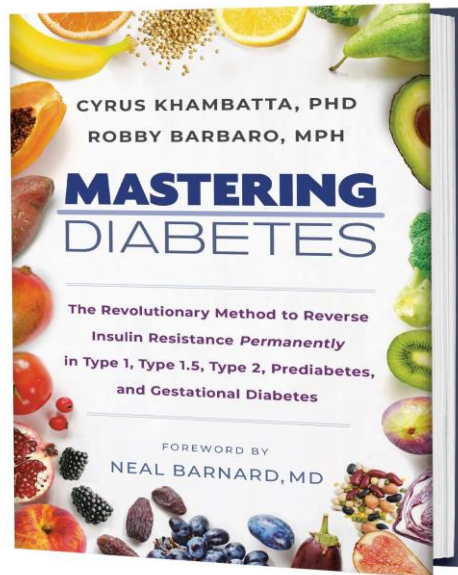
- Research
- Books
- Podcasts
- Plant-based recipes (free) online access
- Plant-based cooking courses online
- Plant-based restaurant App
- Plant-based meals shipped to your door step
- Plant-based immersion programs
- “Quick Start” for “Diabetes Reversal Today”

QUICKSTART “HELPERS”

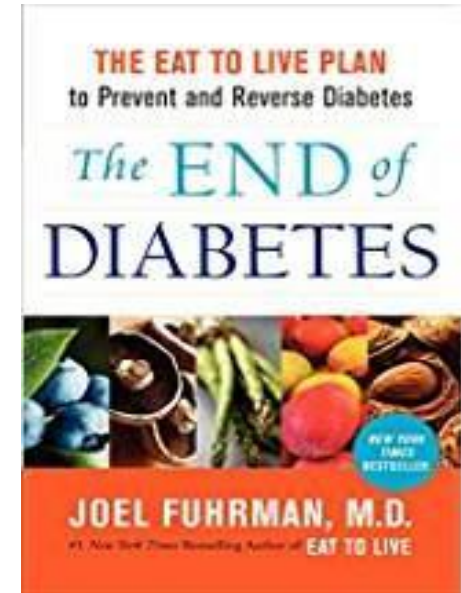
DIABETES REVERSAL BOOKS



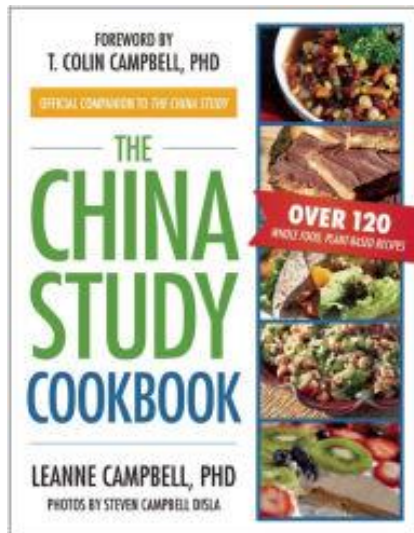
Dr. Neal Barnard's Program
for Reversing Diabetes:
The Scientifically Proven
System for Reversing
Diabetes
Without Drugs
by Neal Barnard M.D.
<https://amzn.to/2w3Kxcw>



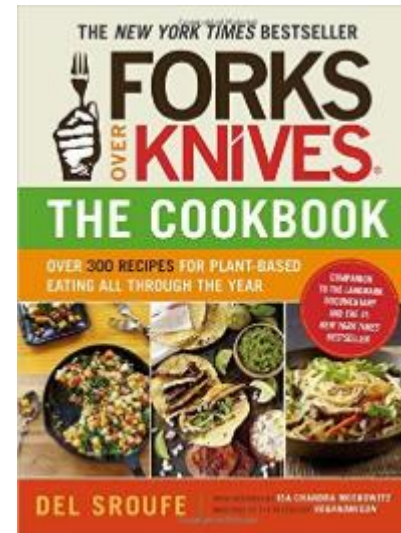
Mastering Diabetes: The
Revolutionary Method to
Reverse Insulin Resistance
Permanently in Type 1, Type
1.5, Type 2, Prediabetes, and
Gestational Diabetes by
Cyrus Khambatta, PhD and
Robby Barbaro, MPH
<https://www.masteringdiabetes.org/book/>



The End of Diabetes
The Eat to Live Plan
To Prevent and Reverse
Diabetes
by Joel Fuhrman, MD
<http://amzn.to/2mo7EE8>



The China Study Cookbook:
Over 120 Whole Food,
Plant-Based Recipes
by LeAnne Campbell, PhD
<http://amzn.to/2mnScHW>



Forks Over Knives - The Cookbook:
Over 300 Recipes for Plant-Based
Eating All Through the Year
by Del Sroufe et al.
<http://a.co/ab8yj1r>

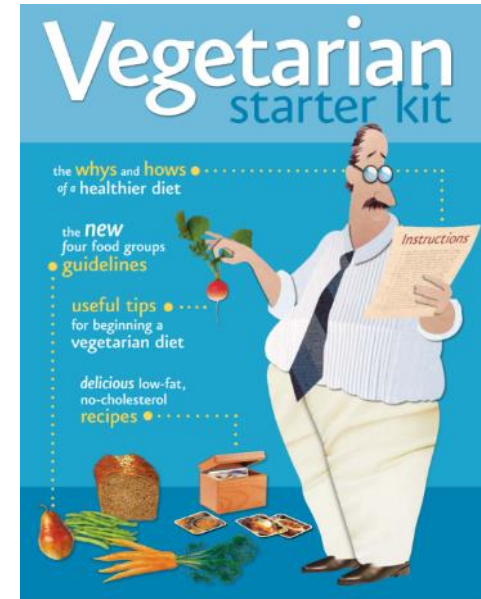


Plant Pure Jump Start

<https://www.plantpurenation.com/>

ForksOverKnives

<https://bit.ly/2Uf6ZXQ>



Vegetarian Starter Kit

<http://www.pcrm.org/sites/default/files/pdfs/health/vsk.pdf>



Plant-Based Nutrition Quick Start Guide

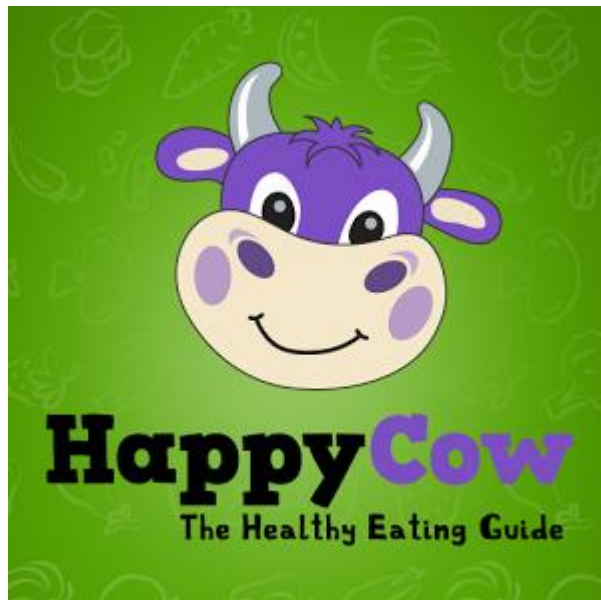
<https://plantricianproject.org/quickstartguide>

QUICKSTART “HELPERS”

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Right Now We Know...

- Type 2 diabetes is preventable & REVERSABLE by WFPBD
- Type 1 diabetes might be prevented AND slowed by WFPBD and lifestyle
- Low fat, high carbohydrate, high fiber diets have been shown to reverse Type 2 diabetes and reduce insulin need in Type 1 diabetes for more than 45 years
- A low fat, high carbohydrate diet has been shown to improve glucose tolerance since the early 1900s
- High fat and meat diets have been shown to hinder glucose utilization since the early 1900s
- **THE RIGHT “WHOLE FOOD CARBOHYDRATES” WILL REVERSE DIABETES IN THE CONTEXT OF A LOW FAT (ESPECIALLY ANIMAL FAT) DIET!**



1. Eat “intact” whole carbohydrates only
2. Eat no animal foods (or < palm full/day)
3. Don’t eat foods made with, or add free oils to the diet (get your fats and oils naturally in the food)
4. Walk or aerobic exercise ½ hour daily

REVERSING TYPE 2 DIABETES AND NEUROPATHY IN 3 MONTHS
BROOKLYN BOROUGH PRESIDENT ERIC ADAMS, FORMER
NYPD OFFICER & NEW YORK STATE SENATOR (5:48 MIN)



THANK YOU!

KIRK HAMILTON, PA-C



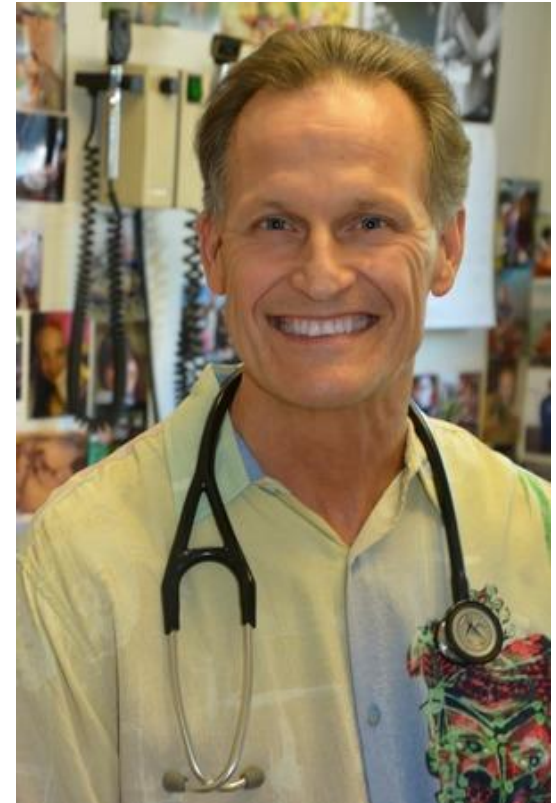
- Please visit
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 - www.StayingHealthyToday.com
 - www.KwikerMedical.com
 - Health Coaching at www.stayinghealthytoday.com/coaching
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 - Health Associates Medical Group
 - www.kwikermedical.com
 - (916) 480-4400 (Questions 8-9 a.m. PST)
 - 3301 Alta Arden #3, Sacramento, CA 95825



THANK YOU AND BE SAFE!

SIMPLE “VIRUS PROTECTION”



- Wash your hands/use sanitizer
- Cover your mouth if you sneeze or cough
- Try not to touch your face
- For now avoid crowds
- Stay home if you are sick
- Check on your elderly neighbor
- Vitamin C 1000 – 4000 mg/d or every ½ to 1 hr TO BOWEL TOLERANCE (don't get diarrhea) if you start to get a cold or flu
Vitamin D (5-10,000IU)
Zinc 50 mg
- Avoid all dairy, wheat and eggs AND processed foods.
- Eat more fruits, vegetables, whole grains, beans and whole starchy vegetables
- Get exercise whether you are housebound or go outside
- **Facial Dip Morning and Evening** – Plug sink, 2-3 tablespoons of salt, fill up with hot water, “TEST HEAT WITH YOUR CHIN” (DON'T BURN YOURSELF!), add cool water if you have to, don't burn your face, immerse face in water up to ears but eyes, nose and mouth are in the water. Hold for 5 seconds. Lift face out of water, blow nose and repeat 4 more time.