# Diabetes Essentials: Building Blocks of Person-Centered Care

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Pronouns: She, her and hers
Founder - www.DiabetesEd.net

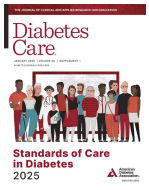
## Coach Bev has no Conflict of Interest

- She's not on any speaker's bureau
- Does not invest or have any financial relationships with diabetes related companies.
- Gathers information from reading package inserts, research and articles
- The ADA Standards of Medical Care is main resource for course content

## Diabetes Essentials: Building Blocks of Person-Centered Care

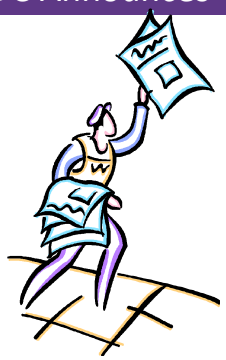
**Objectives**

- Identify the key elements of the standards that improve clinical care for people with diabetes.
- Review and discuss appropriate use of the latest medications and that address hyperglycemia and cardiorenal health.
- Describe strategies to incorporate lifestyle changes into diabetes self-management.
- Share practical approaches to assess and address diabetes distress in clinical care.



## CDC Announces



35% of Americans will have Diabetes by 2050

*Boyle, Thompson, Barker, Williamson*
*2010, Oct 22:8(1)29*
*www.pophealthmetrics.com*

## Poll Question 1

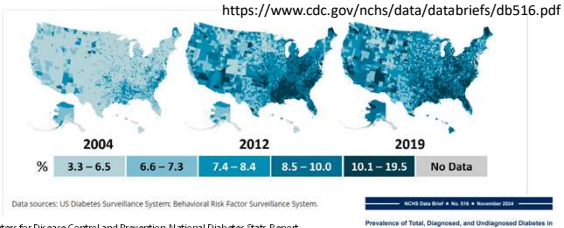
- What percent of total people in the U.S. are living with undiagnosed and diagnosed type 2 diabetes?
- A. About 30%
- B. 11.3%
- C. 16.8%
- D. 25.6%


## Type 2 Diabetes in America 2025

- 16.8% with Diabetes
  - 11% don't know they have it
- 38% with Prediabetes – 97 million adults

Figure 3. Age-adjusted, county-level prevalence of diagnosed diabetes among adults aged 20 years or older, United States, 2004, 2012, and 2019

https://www.cdc.gov/nchs/data/databriefs/db516.pdf



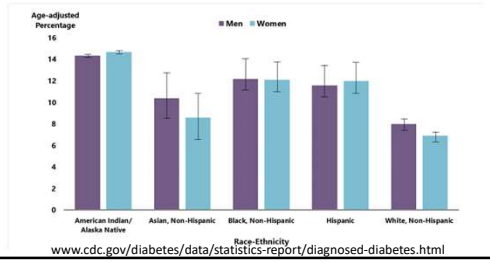

Centers for Disease Control and Prevention. National Diabetes Stats Report https://www.cdc.gov/diabetes/data/statistics-report/index.html. Accessed 1/23

## Diabetes Prevalence by Ethnic Group

- For adults, diabetes prevalence highest among:
  - American Indians and Alaska Natives (14.5%),
  - Non-Hispanic Blacks (12.1%),
  - People of Hispanic origin (11.8%),
  - Non-Hispanic Asians (9.5%)

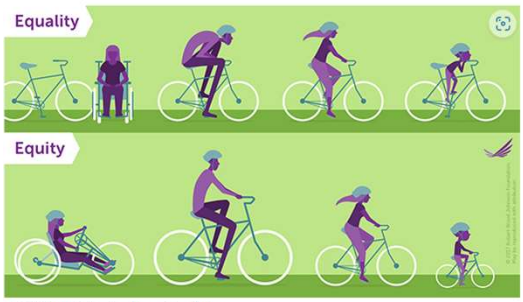
Figure 2. Age-adjusted estimated prevalence of diagnosed diabetes by race/ethnicity group and sex for adults aged 18 years or older, United States, 2018–2019




www.cdc.gov/diabetes/data/statistics-report/diagnosed-diabetes.html

## Lived Experiences & Advocacy

## Equality vs Equity



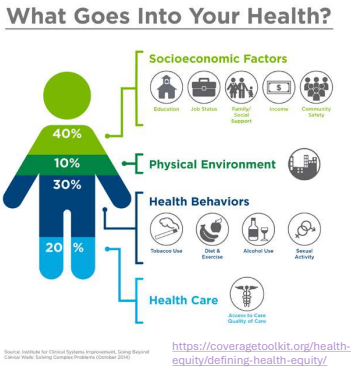

*© 2017 Robert Wood Johnson Foundation*

Design and deliver diabetes care with goal of **health equity** across all populations.

https://coveragetoolkit.org/health-equity/defining-health-equity/

## Address Barriers to Self Management

- **Barriers exist** within health system, payer, health care professional & individual.
- **Address barriers** through innovation, including community health workers, telehealth, other digital health solutions.
- **Consider social determinants of health** in the target population when designing care.




https://coveragetoolkit.org/health-equity/defining-health-equity/

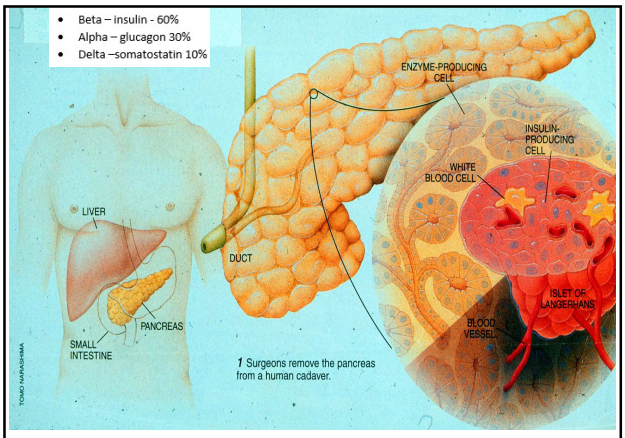
## Social Determinants of Health

- SDOH are defined as the economic, environmental, political, and social conditions in which people live and are responsible for a major part of health inequality worldwide.


Greater exposure to adverse SDOH over the life course results in poor health. Use quality data to identify inequities & take action.

## Now, let's get to the Nitty Gritty

- Beta – insulin - 60%
- Alpha – glucagon 30%
- Delta –somatostatin 10%




## Hormones Effect on Glucose

| Hormone | Effect |
|---|---|
| Glucagon (pancreas) | ↑ |
| Stress hormones (kidney) | ↑ |
| Epinephrine (kidney) | ↑ |
| Insulin (pancreas) | ↓ |
| Amylin (pancreas) | ↓ |
| Gut hormones - incretins (GLP-1) released by L cells of intestinal mucosa, beta cell has receptors) | ↓ |

## Pre Diabetes & Type 2- Screening Guidelines (ADA 2025 Clinical Practice Guidelines)

1. Start screening all people at age 35.
2. Screen at any age if BMI ≥ 25 (Asians BMI ≥ 23) plus one or > additional **risk factor**:

- First-degree relative w/ diabetes
- Member of a high-risk ethnic population
- Habitual physical inactivity
- History of heart disease
- Check more frequently if taking high risk meds; antiretrovirals, 2nd generation antipsychotics or steroids, thiazide diuretics, statins
- History of pancreatitis, prediabetes, GDM, periodontitis

## Diabetes 2 - Who is at Risk?

(ADA 2024 Clinical Practice Guidelines)

Screen using A1C, Fasting Blood Glucose or OGTT.

Repeat screening at least every 3 years if negative.

*If prediabetes or on high risk meds, recheck yearly

**Risk factors cont'd**

- HTN - BP > 130/80
- HDL < 35 or triglycerides > 250
- History of Gestational Diabetes Mellitus
- Polycystic ovary syndrome (PCOS)
- Other conditions associated w/ insulin resistance:
  - Elevated BMI, acanthosis nigricans (AN)

2. Diagnosis and Classification of Diabetes: Standards of Care in Diabetes—2025

## Diabetes Screening Guidelines

(ADA 2025 Clinical Practice Guidelines – Cheat Sheet)

**RECOMMENDATIONS FOR DIAGNOSIS AND CLASSIFICATION OF DIABETES – 2025**

**CRITERIA FOR SCREENING FOR DIABETES AND PREDIABETES IN ASYMPTOMATIC ADULTS – TABLE 1**

| DIABETES TYPE | RISK FACTORS and FREQUENCY OF SCREENING and TESTING FOR DIABETES |
|---|---|
| *Type 1* | Screen those at risk for presymptomatic type 1 diabetes, by testing autoantibodies to insulin, GAD, islet antigen 2 or ZnT8. Also test antibodies for those with type 1 phenotypic risk (younger age, weight loss, ketoacidosis , etc.) |

1. Test all adults starting at age **35** for prediabetes and diabetes using Fasting Plasma Glucose, A1C or OGTT.
2. Perform risk-based screening if BMI ≥ 25 or BMI ≥ 23 in Asian Americans 10yrs+ with 1 or more risk factors:
   - History of cardiovascular disease
   - First or second degree relative with diabetes
   - High risk ethnicity or ancestry
   - Other conditions associated with insulin resistance (PCOS, Acanthosis Nigricans, Steatosis)
   - Physical inactivity
   - HDL ≤ 35 mg/dl or triglyceride ≥ 250 mg/dl
   - Hypertension ≥ 130/80 or on therapy for HTN
3. *If results normal, repeat test* at a minimum of 3-year intervals or more frequently based on risk status.
4. **Test Yearly** if A1C ≥ 5.7% or Impaired Fasting Glucose or History of GDM ( test at least every 1- 3 years)

**Closely monitor** high-risk groups (before taking 2nd generation antipsychotics, steroids, thiazide diuretics, statins, HIV meds *and* after initiating therapy) with history of pancreatitis, or periodontal disease.

2. Diagnosis and Classification of Diabetes: Standards of Care in Diabetes—2025

DiabetesEd.net Cheat Sheets

## Poll Question 1

- Which of the following level is considered pre-diabetes range?

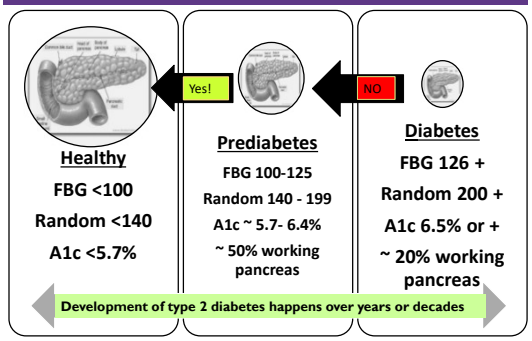
a. Fasting BG of 62

b. A1c of 5.9 %

c. After meal BG of 137

d. A1c of 7.1 %

## Natural History of Diabetes




## PreDiabetes is FREAKING ME OUT

- 96 million people in US
- 80% don't know they have it
- In 3-5 years, about 30% of predm will get diabetes
- Associated with higher rates of heart attack, stroke, neuropathy and vessel disease

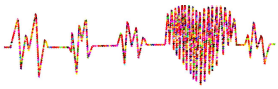
Do I look like I am freaking out?


## Poll Question 2

- What best describes prediabetes in the U.S.?
  a. Prediabetes affects 18-20% of people above the age of 20.
  b. The prevalence of prediabetes and diabetes are almost equal.
  c. Most people with BMI of 30 or greater have prediabetes.
  d. Prediabetes is associated with increased risk of CV disease

## 3. Detecting PreDiabetes Matters

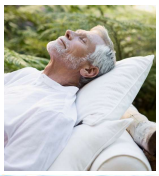
- Given the cost-effectiveness of lifestyle behavior modification programs for diabetes prevention:
  - Offer diabetes prevention programs to adults at high risk of type 2 diabetes
  - Prescribe effective eating patterns
  - Address inconsistencies in access – leverage technology
- Screening guidelines for people with Type 1



3. Prevention or Delay of Diabetes and Associated Comorbidities: Standards of Care in Diabetes—2025

## Get About 7 Hours of Quality Sleep to Prevent Diabetes

- Poor sleep quality was associated with a 40–84% increased risk of developing type 2 diabetes in a meta-analysis.
- Chronotype preference has been linked with many chronic diseases, including type 2 diabetes.
  - Night owls have 2.5 higher odds ratio for diabetes risk (i.e., going to bed late and getting up late) than early birds.
    - Independent of sleep duration and sleep sufficiency



3. Prevention or Delay of Diabetes and Associated Comorbidities: Standards of Care in Diabetes—2025

*The composition of the gut microbiome may also affect the likelihood of developing type 2 diabetes.*

## 3. Interventions for Prediabetes

- Use more intensive approach for high-risk individuals:
  - BMI of 35+
  - If A1C is ~6.0 or FPG is 110
  - History of GDM
- No FDA approved med for prevention (off label)
- Consider Metformin Therapy for Prediabetes
  - Monitor B12 level (esp with neuropathy or anemia)
- CV Risk Mitigation important.
- Statin can increase BG, stop if notice elevation
- Consider low dose pioglitazone (Actos) if history of stroke.

3. Prevention or Delay of Diabetes and Associated Comorbidities: Standards of Care in Diabetes—2025

## Common Oral Diabetes Meds

Diabetes Education Services

Download Success! Get Our Free CDCES Coach App

| Class/Main Action | Name(s) | Daily Dose Range | Considerations |
|---|---|---|---|
| **Biguanides**<br>• Decreases hepatic glucose output<br>• First line med at diagnosis of type 2 | metformin (Glucophage)<br><br>Riomet (liquid metformin) | 500 - 2550 mg (usually BID w/ meal)<br><br>500 - 2550 mg 500mg/5mL | **Side effects:** nausea, bloating, diarrhea, B12 deficiency. To minimize GI Side effects, use XR and take w/ meals.<br>**Obtain GFR before starting.**<br>• If GFR <30, do not use.<br>• If GFR <45, don't start Meformin<br>• If pt on Metformin and GFR falls to 30-45, eval risk vs. benefit; consider decreasing dose.<br>**For dye study,** if GFR <60, liver disease, alcoholism or heart failure, restart metformin after 48 hours if renal function stable.<br>**Benefits:** lowers cholesterol, no hypo or weight gain, cheap. Approved for pediatrics, 10 yrs +<br>Lowers A1c 1.0%-2.0%. |
| | Extended Release-XR (Glucophage XR) (Glumetza) (Fortamet) | (1x daily w/dinner) 500 – 2000 mg 500 – 2000 mg 500 – 2500 mg | |

Biguanide derived from:
Goat's Rue *Galega officinalis*,
French Lilac
Does NOT harm kidneys
$10 for 3-month supply from
Walmart & other pharmacies

## Indications for Insulin Sensitizers

Pioglitazone (Actos)

- **Action**: decrease insulin resistance by making muscle and adipose cells more sensitive to insulin. Decrease free fatty acids
- **Names**:
  - pioglitazone (Actos) – bladder cancer warning
    - Dosing: 15-45 mg daily
    - Consider adding low dose if history of stroke or have steatosis
  - rosiglitazone Dosing: 4-8 mg daily

| Class/Main Action | Name(s) | Daily Dose Range | Considerations |
|---|---|---|---|
| **Thiazolidinediones "TZDs"**<br>• Increases insulin sensitivity | pioglitazone (Actos)<br>rosiglitazone | 15 – 45 mg daily<br>4 – 8 mg daily | Black Box Warning: TZDs may cause or worsen CHF. Monitor for edema and weight gain. Increased peripheral fracture risk. Actos may increase risk of bladder cancer.<br>Lowers A1c 0.5% – 1.0% |

- **Efficacy/ Considerations**
  - Reduce A1C ~0.5-1.0%
  - 6 weeks for maximum effect
  - Actos $5 a month
  - Can cause fluid retention, not indicated w/ CHF

## Poll question 3

- JR is started on Metformin 500mg BID. Which of the following is true?

a. Hold metformin if blood glucose below 90 mg/dl.
b. Evaluate B12 levels before starting medication.
c. Metformin is considered weight neutral
d. Metformin can cause kidney damage, so increase fluid intake

## Medication Taking Behaviors

- Adequate medication taking is defined as 80%
- 23% of time, if A1c, B/P, lipids above target - due to med taking behavior
- Assess for barriers
- If taking meds 80% of time and goals not met, consider medication intensification

Barriers include:
Forgetting to fill Rx, forgetting to take, fear, depression, health beliefs, med complexity, cost, knowledge gap, system factors, etc.

**Work on targeted approach for specific barrier**

## Wait, What About Emotions?


## Diabetes Admit for Hyperglycemia

- JR is admitted for hyperglycemia because he stopped taking his diabetes meds.
- HCP says, "Don't you realize you are going to get complications, like kidney disease or amputation if you don't take your medications?"
- Door Closed – No Connection made

**How Does JR Feel?**

- Embarrassed
- Ashamed
- Defeated
- Angry
- Unheard

**How does HCP feel?**

- Frustrated
- Defeated
- Worried

## Diabetes Visit – Let's Go *through*

**A small adjustment can make a BIG Difference**

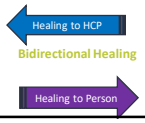
- HCP says, "JR, I am worried about you and your elevated blood glucose. Can you share what is going on in your life?"
- Door Open – Connection made

**How Does JR Feel?**

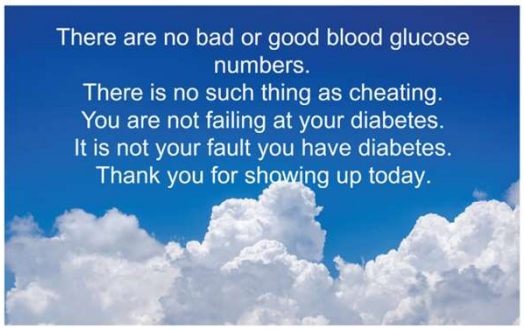
- Heard & Seen
- Recognized
- Connected
- Engaged

**How does the HCP feel?**

- Connected
- Concerned
- Collaborative

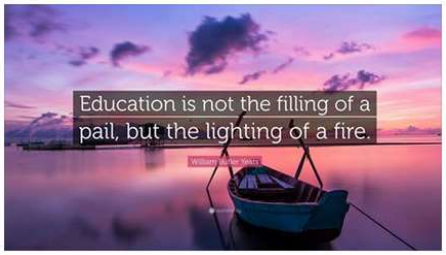



## Create a Judgement Free Zone – Roll out the Carpet of Acceptance

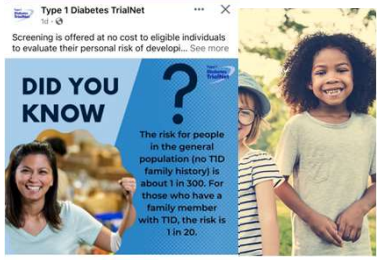



## 5 M's and Judgement Free Zone

## Let's meet people where they are at.




## Type 1 ~ Immune Mediated 5-10% of Diabetes






ADCES In Practice - March 2024
Recent Advances in Type 1 Diabetes: Teplizumab (Tzeild™)
Karen S. Fiano, PHARMD, BCACP, Devada Singh-Franco, PHARMD, CDCES, Young M. Kwon, BS, PHD

1.5 Million people have type 1 in U.S.

Prevalence increasing:

2001 – 1.48 per 1000 youths diagnosed with diabetes

2017 - 2.15 per 1000 youths diagnosed with diabetes

Incidence & Prevalence increasing

Highest incidence in Finland or Northern Europe.

## Type 1 – 10% of all Diabetes

- Auto-immune pancreatic beta cells destruction
- Most commonly expressed at age 10 - 14
- Insulin sensitive (require 0.5 - 1.0 units/kg/day)
- Expression due to a combo of genes and environment:
  - Autoimmunity tends to run in families
  - Exposure to virus or other environmental factors
- Signs can include:
  - Increased thirst and hunger
  - Frequent urination or new bed-wetting at hs
  - Unintended weight loss
  - Fatigue and irritability

## Type 1 Diabetes Features?

Misdiagnosis is common and can occur in ~40% of adults with new type 1 diabetes

- For JR, a 28 admitted to the ICU with a blood glucose of 476 mg/dl, pH of 7.1, anion gap of 15. Recently lost 13 pounds.

Type 1 Most Discriminative Features

- Younger than 35 years at diagnosis
- Lower BMI (<25 kg/m$^2$)
- Unintentional weight loss
- Ketoacidosis
- Glucose 360 mg/dl or greater.

2. Diagnosis and Classification of Diabetes: Standards of Care in Diabetes—2025

## Pharmacologic Intervention to Delay Symptomatic Type 1 (in Stage 2)

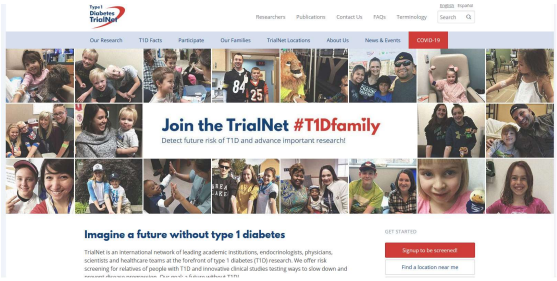
- Teplizumab-Tzield (CD3-monoclonal antibody)
- 14-day infusion can delay the onset of symptomatic type 1 diabetes (stage 3)
- An option in selected individuals aged ≥8 years with stage 2 type 1 diabetes.
- In a single trial, 44 individuals received 14-day course of teplizumab vs 32 placebo.
- The median time to stage 3 diagnosis of type 1
  - 48.4 months in tep group
  - 24.4 months placebo
- Cost: $193,000
- Provention Bio has financial assist programs.

126. Herold KC, Bundy BN, Long SA, et al.; Type 1 Diabetes TrialNet Study Group. An anti-CD3 antibody, teplizumab, in relatives at risk for type 1 diabetes. *N Engl J Med* 2019;381:603–613

3. Prevention or Delay of Diabetes and Associated Comorbidities: Standards of Care in Diabetes—2024

## Type 1 (stage 2) Delayed with Teplizumab by 2 years www.DiabetesTrialNet.org

- **How to get families linked to screening?**



## Miracle of Insulin

Patient J.L., December 15, 1922

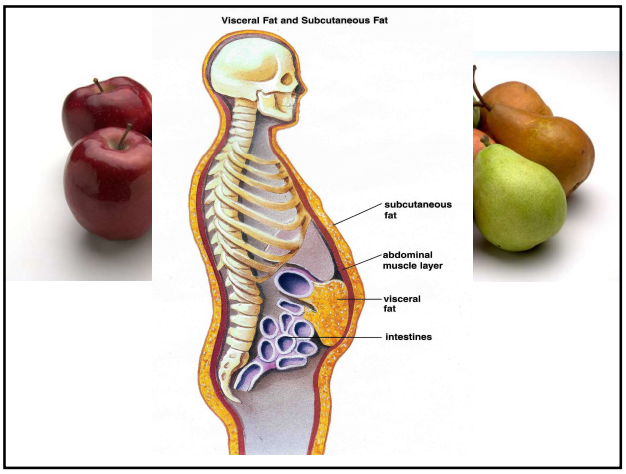
February 15, 1923

Patti Labelle
"divabetic"
"I have diabetes, it doesn't have me"


## Signs of Diabetes

- Polyuria
- Polydipsia
- Polyphasia
- Weight loss
- Fatigue
- Skin and other infections
- Blurry vision




## What is Type 2 Diabetes?

- Complex metabolic disorder ….
  (Insulin resistance and deficiency)

with social, behavioral and environmental risk factors unmasking the effects of genetic susceptibility.

New Diagnosis?
Call 800 – DIABETES to request "Getting Started Kit"
www.Diabetes.org

## Life Study – Mrs. Jones

Mrs. Jones is 62 years old, with a BMI of 36 and complains of feeling tired and urinating several times a night. She has an urinary tract infection. Her A1c is 8.3%, glucose 237.

She is hypertensive with a history of gestational diabetes. No ketones in urine.

- What are her risk factors and signs of diabetes?
- You find a few moments to teach and she asks you some questions.

## Mrs. Jones asks you
## What Do You Say?

- What is diabetes?
- They say I am a diabetic because I am obese?
- How am I going to control this?
- What is a normal blood sugar?
- Do I have to test my blood sugars?
- My doctor told me to stay away from white foods. Is that true?

## Mrs. Jones asks you
## What Do You Say?

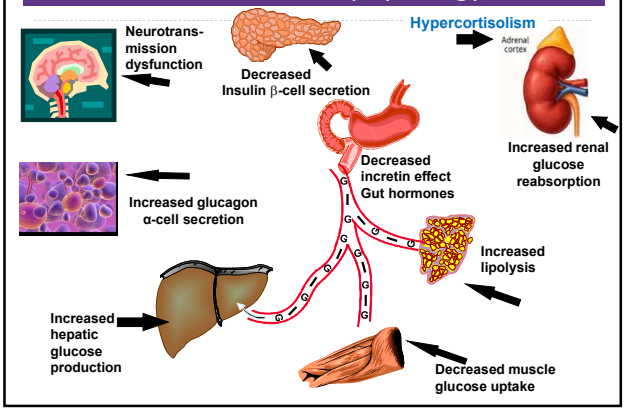
- You are wondering if your weight caused your diabetes?
- You can manage your diabetes and improve your health at the same time.
- For people without diabetes, fasting blood sugar is less than 100 and A1c is less than 5.7%
- Checking blood sugars can help you figure out if the plan in working.

## Look Beyond Diabetes


- ACE – Adverse Childhood Experiences
- Feelings around their diabetes
- Cultural traditions, family system.
- Social, religious and employment influences
- Personal factors: attitudes, cognitive factors, literacy, learning styles, health beliefs
- Social Determinants of health

## The Noxious Nine – Pathophysiology T2D




## Signs of Hypercortisolism


- **Other signs**
  - muscle weakness,
  - high blood pressure,
  - diabetes,
  - excessive hair growth,
  - acne,
  - bone loss and
  - mood changes like irritability and depression.

Hypothalamus → CRH → Pituitary → ACTH → Adrenal → Cortisol

- Cortisol effects: gluconeogenesis, insulin resistance, fat redistribution

## SGLT2 Inhibitors- "Glucoretics"

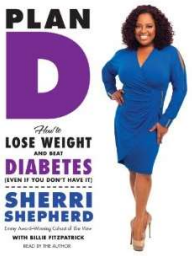
- **Action**: decreases renal reabsorption of glucose proximal tubule of kidneys (reset renal threshold)
- **Preferred** diabetes treatment for people with heart and kidney failure. Decreases BG & CV Risk.
- AWP: ~$650 a month

| Class/Main Action | Name(s) | Daily Dose Range | Considerations |
|---|---|---|---|
| **SGLT2 Inhibitors**<br>"Glucoretic"<br>• Decreases glucose reabsorption in kidneys | Canagliflozin* (Invokana)<br>Dapagliflozin*† (Farxiga)<br>Empagliflozin*† (Jardiance)<br>Ertugliflozin (Steglatro)<br>Bexagliflozin (Brenzavvy) | 100 - 300 mg 1x daily<br>5 - 10 mg 1x daily<br>10 - 25 mg 1x daily<br>5 – 15 mg 1x daily<br>20 mg 1x daily | **Side effects:** hypotension, UTIs, genital infections, increased urination, weight loss, ketoacidosis.<br>**Heart Failure, CV & Kidney Protection:** 1st line therapy for Heart Failure (HF), Kidney Disease (CKD), Cardiovascular Disease, before or with metformin<br>**Considerations:** If GFR ≥ 20, use SGLT-2 to reduce CVD, Heart Failure and Chronic Kidney Disease. Limited BG lowering effect if GFR <45. See package insert for GFR cut-offs and dosing.<br>**Benefits:** SGLT-2s* reduce BG, CV death & HF, slow CKD. †Approved for peds, 10 yrs +. Lowers A1C 0.6% to 1.5%. |

## SGLT-2i Indications Summary

| Drug | Lower BG | Reduce CV Risk? | Use to treat Heart Failure? | Slow renal disease? |
|---|---|---|---|---|
| **Dapagliflozin** (Farxiga) | Yes | Yes | Yes +/- Diabetes | Yes |
| **Empagliflozin** (Jardiance) | Yes | Yes | Yes +/- Diabetes | Yes |
| **Canagliflozin** (Invokana) | Yes | Yes | Yes w/ Diabetes | Yes |
| **Ertugliflozin** (Steglatro) | Yes | No | Yes w/ Diabetes | Yes |
| **Bexagliflozin** (Brenzavvy) | Yes | NA | NA | NA |

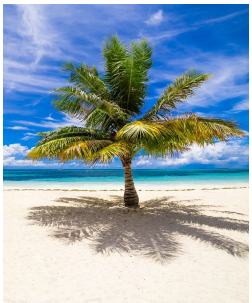
## *"Getting diabetes saved my life."* *~ Sherri Sheperd*




**Sherri Shepard decided to embrace diabetes and use it as a motivator to improve her health.**

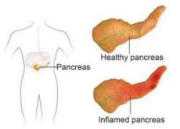
## Other Specific Types of DM

- Medications such as: steroids, protease inhibitors and Prograf®
- Secondary to Agent Orange
- Liver failure
- TPN or tube feedings
- Diabetes Type 3c
  - Cystic fibrosis, pancreatitis
  - Pancreatic cancers or removal
  - Hemochromatosis



## Pancreatitis

- People with diabetes 2xs risk of acute pancreatitis
- After episode of pancreatitis, one third of people will get prediabetes or diabetes
  - About 25% to 80% of people with chronic pancreatitis develop Type 3c diabetes.
- Pancreatitis is an exocrine dysfunction:
  - Disrupts global architecture or physiology of pancreas
  - Results in both exocrine and endocrine dysfunction.



Healthy Pancreas vs Pancreatitis

## Regardless of the cause, hyperglycemia needs to be treated.

## DiaBingo

**B** Frequent skin and yeast infections
**B** A BMI of ____ or greater indicates increased pre/diabetes risk?
**B** To reduce complications, control **A**1c, **B**lood pressure, **C**holesterol
**B** PreDiabetes – fasting glucose level of ___ to ____
**B** Erectile dysfunction indicates greater risk for ____
**B** Diabetes – fasting glucose level____ or greater
**B** Type 1 diabetes is best described as an _____ disease
**B** People with diabetes are _____ times more likely to die of heart dx
**B** Elevated triglycerides, < HDL, smaller dense LDL
**B** Each percentage point of A1C = _____ mg/dl glucose
**B** At dx of type 2, about __% of the beta cell function is lost
**B** Diabetes – random glucose ____ or greater

## Sulfonylureas - Secretagogues or "Squirters"

- Mechanism: Stimulate beta cells to release insulin
- Dosed 1-2x daily before meals
- Adverse effects
  - Hypoglycemia, Weight gain, watch renal function
- Low cost, $12 for 3 months supply
- Can help with glucose toxicity, lowers A1C 1-2%

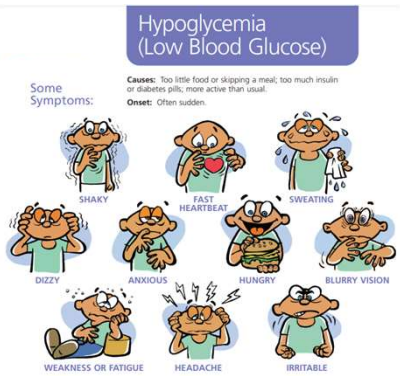
| | | | |
|---|---|---|---|
| **Sulfonylureas**<br>• Stimulates sustained insulin release | glyburide:<br>(Diabeta)<br>(Glynase PresTabs) | <br>1.25 – 20 mg<br>0.75 – 12 mg | Can take once or twice daily before meals.<br>Low cost generic.<br>**Side effects**: hypoglycemia and weight gain. Eliminated via kidney. |
| | glipizide: (Glucotrol)<br>(Glucotrol XL) | 2.5 – 40 mg<br>2.5 – 20 mg | **Caution**: Glyburide most likely to cause hypoglycemia. |
| | glimepiride (Amaryl) | 1.0 – 8 mg | Lowers A1c 1.0% – 2.0%. |

## Reducing Hypoglycemia

- Which are the only diabetes meds that directly cause hypoglycemia?


- ❑ Insulin
- ❑ Secretagogues (sulfonylureas, glitinides)

## Hypoglycemia – A Big Deal



## Hypoglycemia (Glucose) Alert Values

- **BG <70mg/dl – Level 1**
- Follow 15/15 rule and contact provider to make needed changes. At increased hypo risk.


- **BG < 54mg/dl – Level 2**
- Indicates serious hypo. Reassess BG Goals. Consider med decrease. Predictive of Level 3 Hypo. Needs Glucagon Emergency Kit

- **Severe Hypoglycemia – Level 3**
- Altered mental, physical functioning.
- Requires external assistance – no threshold

6. Glycemic Goals and Hypoglycemia: Standards of Care in Diabetes—2025

## Hypoglycemia: Identify, Treat, & Prevent

*PocketCards are updated twice yearly. Scan QR code to download or order the latest version.*

SCAN ME

**Step 1**

**Identify your signs of hypoglycemia or low blood sugar:**

- Sweaty
- Shaky
- Hungry
- Can't think straight
- Headache
- Irritated, grouchy
- Other

**Step 2**

**If have signs of hypo, treat with carbs until glucose reaches 70+, then eat usual meal.**

- Sugary drink, 4–8oz
- Piece of fruit
- Raisins, handful
- Glucose tabs, 4+
- Honey/glucose gel
- Skittles candy, 15+

**Step 3**

**Have glucagon rescue meds available.**

In case of severe hypo, identify someone (ahead of time) who can get medical help & give a glucagon rescue medication.

**Notify your provider of low blood sugar events.**

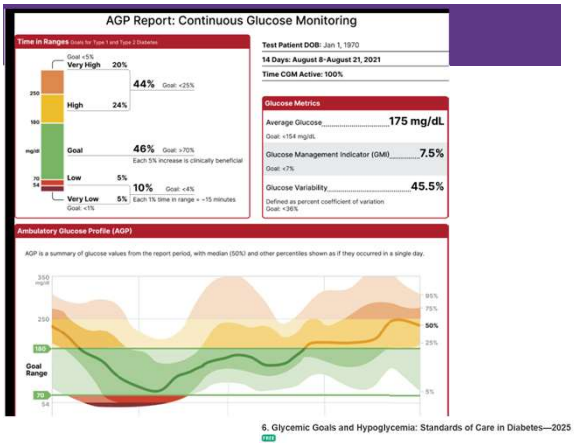
**Hypoglycemia Levels:**

Level 1 – Glucose less than 70
Level 2 – Glucose less than 54
Level 3 - Severe, needs assistance

**Identify Causes of Hypo & Problem Solve to Prevent Future Episodes**

» Low carb meal
» Extra activity
» Drinking alcohol
» Delayed, missed meal
» Too much insulin/meds
» Insulin timing

*www.DiabetesEd.net* *PocketCard content is for educational purposes only.*




6. Glycemic Goals and Hypoglycemia: Standards of Care in Diabetes—2025

## Glucagon Rescue Medications for Diabetes-Related Hypoglycemia

| Name/Delivery | Supplied | Dose Range | | Age / Route / Storage |
|---|---|---|---|---|
| | | Adult | Peds / Age WT Dosing | |
| **Glucagon Emergency Kit**<br>Injection requires mixing glucagon powder | 1mg / 1mL<br>vial + syringe | 1mg | 0.03mg/kg or<br>< 6yrs or < 25 kgs \| 0.5mg<br>≥ 6yrs or > 25kgs \| 1mg | All ages approved<br>SubQ or IM admin<br>Expires in 2 years at room temp. |
| **Baqsimi**<br>Nasal glucagon powder | 3 mg<br>intranasal device | 3 mg | < 4 yrs: not recommended<br>4 yrs or older \| 3mg dose | Approved Age 4+<br>Nasal admin<br>Expires ~ 2 years at room temp<br>(keep in shrink-wrapped tube). |
| **Gvoke**<br>Injectable liquid stable glucagon solution | 0.5mg or 1.0mg in<br>-Prefilled syringe<br>-HypoPen auto-injector<br>-Kit with vial and syringe | 1 mg | < 2yrs: not recommended<br>2- 12 yrs<br>< 45kg \| 0.5mg<br>≥ 45kg \| 1mg<br>12 yrs or older \| 1mg | Approved Age 2+<br>SubQ admin in arm, thigh, abdomen<br>Expires in 2 years at room temp<br>(keep in foil pouch). |
| **Dasiglucagon (Zegalogue)**<br>Stable liquid glucagon analog | 0.6mg/0.6mL<br>Prefilled syringe<br>Autoinjector | 0.6mg | < 6yrs: not recommended<br>6 yrs or older \| 0.6mg | Approved Age 6+<br>SubQ in abdomen, buttocks, thigh outer upper arm<br>Expires in 1 year at room temp.<br>(store in red protective case). |

*All raise BG 20+ points. Can cause nausea, vomiting. After admin, roll person on side. Seek medical help. If no response after 1st dose, give 2nd dose in 15 mins. When awake, give oral carbs ASAP when safe to swallow. Please consult package insert for detailed info.*

*All PocketCard content is for educational purposes only. Please consult prescribing information for detailed guidelines*

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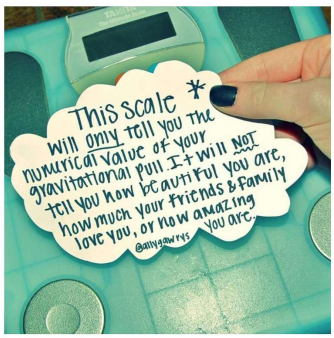
6. Glycemic Goals and Hypoglycemia: Standards of Care in Diabetes—2025

## Poll Question 4

- JL is 78 and drinks a "few cocktails" every night. Lives with partner and takes basal insulin at night and bolus insulin as needed. Has had a few low blood glucose levels in past week of 62, 49 and 51. What is the most important recommendation?

- A. Decrease alcohol intake
- B. Check BG at least 4 times a day.
- C. Double check injection sites.
- D. Get glucagon rescue medication.

## Weight is a Heavy Issue




## Health Behavior Change: Shifting Focus

**Health at Every Size (HAES) Principles**

- Weight Inclusivity
- Health Enhancement
- Eating for Well-being
- Respectful Care
- Life-Enhancing Movement

"People might think they can tell who's fit and who's not by looking at them, but in fact, it's trickier than that."

*Health at Every Size: The Surprising Truth About Your Weight*. Bacon holds a Ph.D. in physiology with a focus on nutrition and weight regulation.

"Lots of people are fat and fit—many avid dancers, runners, lifters, and sports team members are big to start with and stay that way. They tend to be far healthier than thin people who don't move around much or eat a nutritious mix of foods."

"Health at Every Size is about taking care of your body without worrying about whether you're 'too' big or small."

## Get a Tape Measure & Other Assessments

- WHO defines Obesity as: *abnormal or excessive fat accumulation that presents a risk to health*
- BMI poor indicator for "excessive fat" and health risk

Overall - assess individual's
- adipose tissue mass
- using waist circumference
  - 35" woman, 40" man
- waist-to-hip ratio
  - Waist smaller than hips
- waist-to-height ratio
  - Waist < half height
- presence of associated health or well-being consequences: metabolic, physical, or psychological well-being

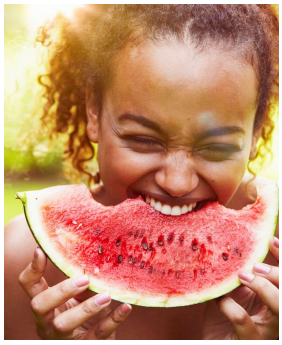
STANDARDS OF CARE | DECEMBER 09 2024

8. Obesity and Weight Management for the Prevention and Treatment of Type 2 Diabetes: Standards of Care in Diabetes–2025

American Diabetes Association Professional Practice Committee

## Medical Nutrition Therapy Works

- MNT is effective and beneficial to people with diabetes.
- When delivered by an RDN, MNT is associated with A1C absolute decreases of
  - 1.0–1.9% for people with type 1 diabetes and
  - 0.3–2.0% for people with type 2 diabetes



## Healthy Eating Patterns/Approaches

**Eating Patterns: Total Foods Consumed**

- Mediterranean Diet
- Plant based eating
- DASH (Dietary Approaches to Stop Hypertension)
- Low Carbohydrate

**Eating Approach: Tools for developing an eating pattern**

- Diabetes Plate Method
- Carbohydrate Counting
- Individualized behavioral approaches

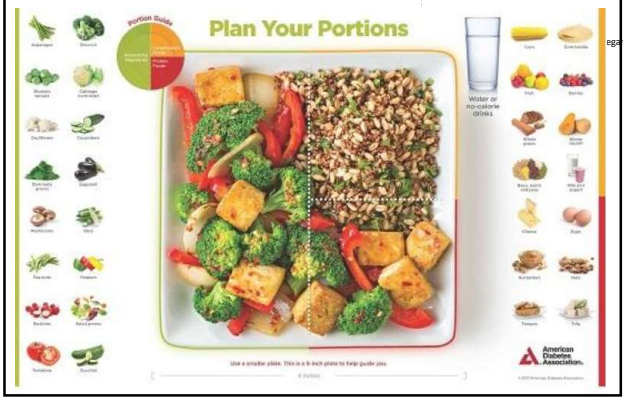
Use Integrative food-based approach. "People eat food, not nutrients".

STANDARDS OF CARE | DECEMBER 09 2024

5. Facilitating Positive Health Behaviors and Well-being to Improve Health Outcomes: Standards of Care in Diabetes—2025

American Diabetes Association Professional Practice Committee

## Plant-based, Vegetarian or Vegan Diet Patterns




## Medical Nutrition Therapy – ADA Macronutrient Distribution

- ***"No one-sized-fits-all eating pattern for individuals with diabetes"***
  - no ideal percent of calories from protein, carbohydrate and fat.
- Macronutrient distribution based on *individualized assessment*
- Consider personal preferences
  - tradition, culture, religion, health beliefs and goals, economics
  - metabolic goals and comorbidities

*Healthcare team members should complement MNT, providing guidance on healthy food choices for the individual and behavioral support*

## Limit Highly Processed Carbs and Added Sugars Eat more HIGH Fiber foods:

- Choose High fiber carbs loaded with vitamins, minerals and phytonutrients
- "Power Carbs" include:
  - Beans/Lentils
  - Veggies
  - Whole Fruits
  - Low-fat, low sugar milk/yogurt
  - Whole Grain foods
    - as culturally appropriate

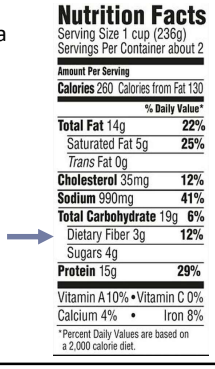

## Reading the Food Label

1. Check the **Serving size** first. All the numbers on this label are for a 2/3-cup serving.
2. **This package has 8 servings.** If you eat the whole thing, you are eating 8 times the amount of calories, carbs, fat, etc., shown on the label.
3. **Total Carbohydrate** shows you types of carbs in the food, including sugar and fiber.
4. Choose foods with **more fiber, vitamins, and minerals.**
5. Choose foods with **lower calories, saturated fat, sodium, and added sugars.** Avoid *trans* fat.


https://www.fda.gov/food/food-labeling-nutrition/changes-nutrition-facts-label

## Fiber – the New "F" Word

- Goal: minimum
  - 14 gms / 1000 calories, ~ 30 gms a day
- How?
  - Avoid highly processed foods
  - Choose > 3 gm fiber per serving
  - Foods: Whole intact grains, legumes, fruits, veggies, nuts/seeds, avocados
- Why?
  - Lower all cause mortality and reduced risk of type 2 diabetes
  - Increased microbiome diversity



## Eating Patterns: Key Nutrition Principles

Until there is more evidence:

- Emphasize non-starchy vegetables in a rainbow of colors
- "Power carbs": fruit, legumes, whole grains, nuts and seeds, lean proteins, low-fat dairy
- Minimize red meat, added sugars, sugary beverages, refined grains and ultra-processed foods


Any approach should consider:

Individual needs: "health status, personal and cultural preferences, ability to sustain recommendations, food access and nutrition security"

## Carbs and Lowering Glucose

- Reducing carb intake has significant evidence for improved glycemia
- **Low Carb Definitions**
  - Very Low = < 26% of kcals
  - Ketogenic: 20-50 gm carb, also high fat.
  - Most people consume 44-46% of Cals from carb
- **HOW:** Focus on key nutrition principles, food quality, and choose minimally processed foods and high fiber foods.

Systematic reviews and RCT found:

- Very low carbohydrate diet effectively reduced A1c at 6 months, less difference beyond 1 year.
- Ketogenic Diet increased LDL and no sig. difference in A1c compared with low-carb Mediterranean diet.

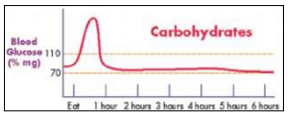
5. Facilitating Positive Health Behaviors and Well-being to Improve Health Outcomes: Standards of Care in Diabetes—2025

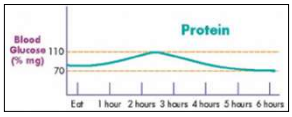
## Very Low Carb Meal Plan Not Recommended for:

- Women who are pregnant or lactating or children
- People with or at risk for disordered eating
- People who have kidney disease
- Avoid ketogenic diets if taking SGLT-2 Inhibitor due to high risk of ketoacidosis
  - Educate on prevention, signs of DKA, how to measure ketones.

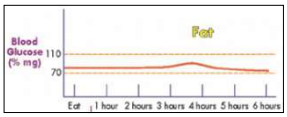
 

## How Nutrients Affect Blood Glucose




If type 1/MDI, may need additional insulin or change in dosing strategy for high fat/ protein meals




## Carbs affect Post-Meal Glucose

- Starch
- Fruit
- Milk
- Desserts


## Poll Question 4

- Based on the Food list for Diabetes: which of the following food choices equals ~ 15 gms of carbohydrate? (multiple)
  - A. ½ bagel, 4 oz
  - B. 1 ¼ cup strawberries
  - C. 1 cup of milk
  - D. ½ cup of cooked rice
  - E. 1 oz trail mix with fruit

## Estimating Carbohydrate for Meals Example (Not ADA Standard)

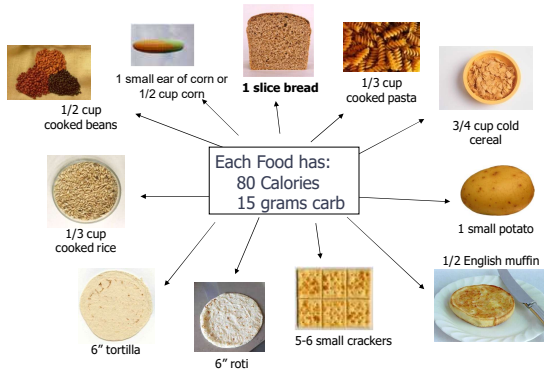
| | Grams | Servings |
|---|---|---|
| Each Meal | 45-60 gm | 3 - 4 |
| Snacks | 15-30 gm | 1- 2 |

Carbs affect Post-Meal Glucose
RDA – at least 130 grams of Carb a day
PWD get about 45% of Cals from carbs

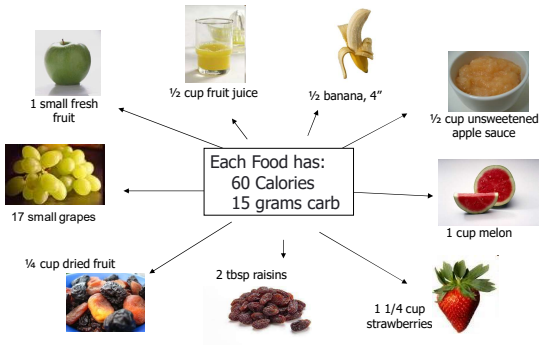
| Calories | 20% | 30% | 40% | 50% |
|---|---|---|---|---|
| **1500** | 75 g | 113 g | 150 g | 188 g |
| **2000** | 100 g | 150 g | 200 g | 250 g |

Nutrition Therapy for Adults With Diabetes or Prediabetes: A Consensus Report

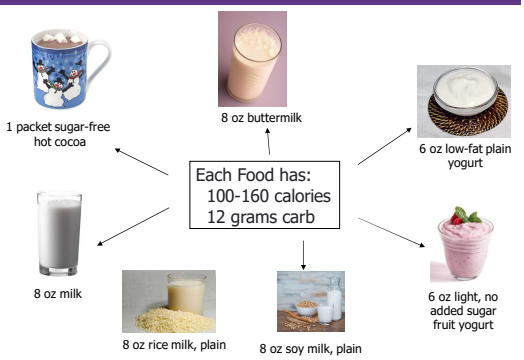
## Carb Counting - Starch



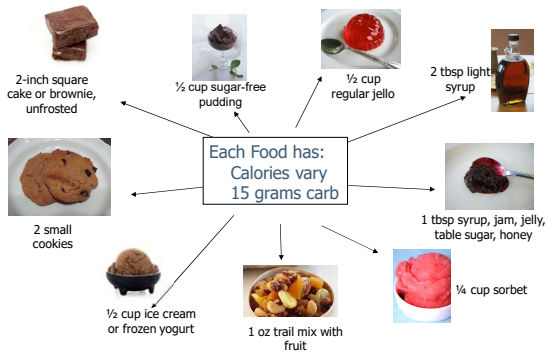

## Carb Counting- Fruit



## Carb Counting - Milk




## Carb Counting - Sweets




## Average American Consumes 17 teaspoons added sugar per day

- WHO/DGA and AHA – Goals < ~ 5 - 10 teaspoons/day
- 1 tsp = 4 gms sugar (15 Cals)
- 15 cals x 19 teaspoons a day =
  - 285 cals a day just from added sugars
- 12oz. soda = 39 gm carb/10 tsps added sugar

| | |
|---|---|
| **Total Carbohydrate** 39g | **14%** |
| Total Sugars 39g | |
| Includes 39g Added Sugars | **78%** |

https://www.cdc.gov/nutrition/php/data-research/added-sugars.html

## Reduce Refined Carbs, Added Sugars - ADA

- To manage wt, reduce CVD risk and fatty liver disease
- ADA strongly discourages consumption of:
  - Sugar sweetened beverages
  - Processed "low-fat" or "non-fat" foods with high amounts of refined grains & added sugar


*Sugary and processed foods can displace healthier, more nutrient dense food choices*

*Water is recommended*

## Non-Nutritive Sweeteners

- Use in moderation and short term to reduce overall calorie/carbohydrate.
- Encourage decrease in both sweetened and non-nutritive sweetened beverages.
- Emphasize water intake.

**How:** add lemon, lime, or cucumber slices to water, choose no calorie waters

5. Facilitating Positive Health Behaviors and Well-being to Improve Health Outcomes: Standards of Care in Diabetes—2025

https://www.fda.gov/food/food-additives-petitions/aspartame-and-other-sweeteners-food

## New Consult for Diabetes Ed

- JR, 63 y/o, BMI 32, Waist circumference: 43", A1c 9.3%, Type 2 diabetes 10+ years. On Metformin 2000mg daily + Glipizide 20mg. Low income and

**Strategies?**
What is JR doing right?
Plate method?
Increase fruit / veggie intake – canned or frozen
Add in beans, chili, soups (lower sodium)
Include, Yogurt, Nuts, oatmeal, wheat toast

Refer to RD / RDN

- Dinner – Sandwich or burger
- Evening – Snacks, nuts, crackers, boiled egg
- Beverages – Diet sodas, tea, water

## Poll Question 5

- A person with diabetes presents with unexplained weight loss, what are some possible causes?
  - A. Taking less insulin than needed
  - B. Disordered eating
  - C. Finances
  - D. Poor dentition
  - E. All the above

## Disordered Eating

- For people with type 1
  - insulin omission causing glycosuria to lose weight is the most reported disordered eating behavior.
  - Have high rates of diabetes distress and fear

- For people with type 2
  - bingeing episodes with an accompanying sense of loss of control most reported.
  - If treated with insulin, intentional omission is also frequently reported.

People with diabetes and diagnosable eating disorders have high rates of other psychiatric disorders

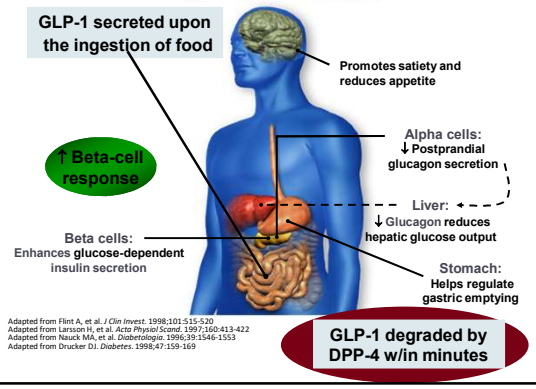
## Poll Question 6

- Which of the following is true about alcohol and diabetes based on ADA Standards?
  - A. Only white wine decreases blood sugars
  - B. Men less than 2 drinks and women less than one drink a day
  - C. Alcohol increases risk of hyperglycemia
  - D. 6 ounces of wine is considered one serving.

## Incretins: GLP & GIP Receptor Agonists

GLP-1: glucagon like peptide 1
GIP: glucose-dependent insulinotropic polypeptide

## GLP-1 Effects in Humans
## Understanding the Natural Role of Incretins




Adapted from Flint A, et al. *J Clin Invest*. 1998;101:515-520
Adapted from Larsson H, et al. *Acta Physiol Scand*. 1997;160:413-422
Adapted from Nauck MA, et al. *Diabetologia*. 1996;39:1546-1553
Adapted from Drucker DJ. *Diabetes*. 1998;47:159-169

## Pocket Card: GLP-1 & GIP RA

### GLP-1 & GIP Receptor Agonists

| Class/Main Action | Name | Dose Range | Considerations |
|---|---|---|---|
| **GLP-1 RA - Glucagon Like Peptide Receptor Agonist**<br>**"Incretin Mimetic"**<br>• Increases insulin release with food<br>• Slows gastric emptying<br>• Promotes satiety<br>• Suppresses glucagon | exenatide (Byetta) | 5 and 10 mcg BID | **Side effects:** nausea, vomiting, weight loss, injection site reaction. Report signs of acute pancreatitis or intestinal blockage (ileus) and stop med.<br>**Black box warning:** Thyroid C-cell tumor warning (avoid if family history of medullary thyroid tumor).<br>*Significantly reduces risk of CV death, heart attack, and stroke.<br>§Approved to reduce risk of CKD<br>†Approved for pediatrics 10-17 yrs<br>Lowers A1C 0.5 – 1.6%<br>Weight loss: 4-6% body weight loss. |
| | exenatide XR† (Bydureon) | 2 mg 1x a week<br>Pen injector - Bydureon BCise | |
| | liraglutide*† (Victoza) | 0.6, 1.2 and 1.8 mg daily | |
| | dulaglutide*† (Trulicity) | 0.75, 1.5, 3.0 and 4.5 mg<br>1x a week pen injector | |
| | semaglutide*§ (Ozempic) | 0.25, 0.5, 1.0 and 2.0 mg<br>1x a week pen injector | |
| | (Rybelsus) Oral tablet | 3, 7, 14 mg - Original dosing.<br>1.5, 4, 9 mg - New dosing.<br>AM dose, pre-food, w/ water sip | |
| **GLP-1 & GIP Receptor Agonist**<br>Activates receptors for GLP-1 (see above) & Glucose-dependent Insulinotropic Polypeptide (GIP). | Tirzepatide (Mounjaro) | 2.5, 5.0, 7.5, 10, 12.5 and 15 mg<br>1x a week injection<br>Single dose via prefilled pen or vial.<br>Adjust dose based on shared decision making and individual goals. | **Side effects:** nausea, diarrhea, injection site reaction. Report pancreatitis, signs of intestinal blockage.<br>**Black box warning:** Avoid if family history of medullary thyroid tumor.<br>Lowers A1C ~ 1.8 - 2.4%<br>Weight loss: 7-13% body weight loss at max dose. |

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## Counseling Points: GLP-1 RA & GLP-1/GIP

- Avoid if personal or family history of medullary thyroid cancer
- Avoid in combo with DPP-4 inhibitors
- Watch for intestinal obstruction
- Use of non-FDA *compounded* products not recommended
- Avoid with history pancreatitis
- If on tirzepitide, use back up contraception for first 4 weeks
- Ask about recent eye exam
  - Potential increase in diabetes retinopathy

Sudden discontinuation of semaglutide and tirzepitide results in regain of one-half to two-thirds of the weight loss within 1 year. Consider trying lowest effective dose, using intermittent therapy, or stopping medication followed by close weight monitoring.

Diabetes Education Services

**Indication Chart for GLP/GIP Receptor Agonists - Diabetes, Weight, CVD and Others**

| Drug | Type 2 Diabetes | Weight Loss Indication | CV Indication | Other Indication |
|---|---|---|---|---|
| Exenatide IR (Byetta) | Yes | No | No | |
| Exenatide ER (Bydureon) | Yes, 10 yrs and older | No | No | |
| Dulaglutide (Trulicity) | Yes, 10 yrs and older | No | Yes | |
| Liraglutide (Victoza) | Yes, 10 yrs and older | No | Yes | |
| Liraglutide (Saxenda) | No | Yes, 12 yrs and older | No | |
| Semaglutide (Ozempic) | Yes | No | Yes | CKD |
| Semaglutide (Wegovy) | No | Yes, 12 yrs and older | Yes | MASH |
| Oral Semaglutide (Rybelsus) | Yes | No | CV benefit, indication pending | |
| Tirzepatide (Mounjaro) | Yes | No | No | |
| Tirzepatide (Zepbound) | No | Yes | No | Sleep Apnea |

Diana Isaacs, PharmD, BCPS, BCACP, BC-ADM, CDCES  Beverly Thomassian, RN, MPH, CDES, BC-ADM

## Where are we on this continuum?

## Exercise Standards

- Adults – 150 min/wk moderate intensity
  - over 3 days a week.
  - Don't miss > 2 consecutive days w/out exercise
  - Get up every 30 mins - Reduce sedentary time
  - Flexibility and balance training 2-3 xs a week (Yoga and Tai Chi)
  - T1 and T2 – resistance training 2 -3 x's a week

## A hard truth

- Exercise alone doesn't cause weight loss
- But….
  - It helps keep weight off
  - Decreases visceral adiposity
  - Decreases CV Risk


- To combat the rise in body weight, we need to change the food environment
- "You cannot outrun an unhealthy diet".

## Good Exercise Info / Quotes

- **"Passagiata" – take an after meal stroll**
- Exercise decreases A1C 0.7%
- No change in body wt, but 48% loss in visceral fat.

"Every minute of activity lowers blood sugar one point."

"I don't have time to exercise, I MAKE time."

## 6. Glycemic Goals & Hypo

A1C

Blood Pressure

Cardiovascular risk reduction


## 6. Glycemic Targets for Non-Pregnant Adults

- **A1c < 7%** - a reasonable goal for adults.
- **A1c < 6.5%** - for those without significant risk of hypoglycemia
- **A1c < 8%** - for those with history of hypoglycemia, limited life expectancy, or those with longstanding diabetes and vascular complications.
- **A1c Check Frequency:**
  - If meeting goal - At least 2 times a year
  - If *not* meeting goal – Quarterly
- **Also review Ambulatory Glucose Profile**

## 6. Glycemic Targets
### Individualize Targets – ADA

- Pre-Prandial BG 80- 130
- 1-2 hr post prandial < than 180
  *for nonpregnant adults
- Time in Range: 70%
  - BG of 70-180 mg/dL

## A1c and Estimated Avg Glucose (eAG)

| A1c (%) | eAG |
|---|---|
| 5 | **97** (76-120) |
| 6 | **126** (100-152) |
| 7 | **154** (123-185) |
| 8 | **183** (147-217) |
| 9 | **212** (170 -249) |
| 10 | **240** (193-282) |
| 11 | **269** (217-314) |
| 12 | **298** (240-347) |

***eAG = 28.7 x A1c-46.7 ~ 29 pts per 1%***
***Translating the A1c Assay Into eAG – ADAG Study***

6. Glycemic Targets: *Standards of Medical Care in Diabetes—2020*

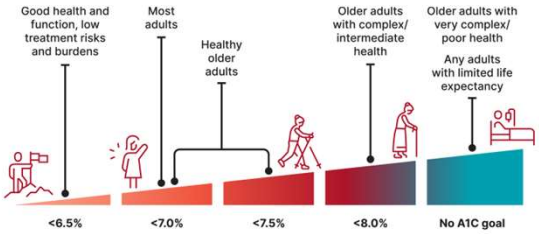
American Diabetes Association
Diabetes Care 2020 Jan; 43(Supplement 1): S66-S76.
https://doi.org/10.2337/dc20-S006

## Ambulatory Glucose Profile

- Standardized report with visual cues for those on CGM devices
  - For most with type 1 or type 2 diabetes
    - > 70% of readings within BG range of 70-180mg/dL
    - < 4% of readings < 70 mg/dL
    - < 1% of readings < 54 mg/dL
    - < 25% of readings > 180 mg/dL
    - < 5% of readings > 250 mg/dL

For those with frailty or at high risk of hypoglycemia recommend:
- Target of 50% time in range
- Less than1% time below range

6. Glycemic Goals and Hypoglycemia: Standards of Care in Diabetes—2025 FREE




Modifying Factors

| Favor more stringent goal | Favor less stringent goal |
|---|---|
| Short diabetes duration | Long diabetes duration |
| Low hypoglycemia risk | High hypoglycemia risk |
| Low treatment risks and burdens | High treatment risks and burdens |
| Pharmacotherapy with cardiovascular, kidney, weight, or other benefits | Pharmacotherapy without nonglycemic benefits |
| No cardiovascular complications | Established cardiovascular complications |
| Few or minor comorbidities | Severe, life-limiting comorbidities |

Table 6.2

6. Glycemic Goals and Hypoglycemia: Standards of Care in Diabetes—2025 FREE

## ADA 2025 Goals Summary

| A1c less than 7% (individualize) | Blood Pressure <130/80 | Cholesterol |
|---|---|---|
| • Pre-meal BG 80-130<br>• Post meal BG <180<br>• Time in Range (70-180) 70% of time |  | • Statin therapy based on age & risk status<br>• If 40+ with ASCVD Risk, decrease LDL by 50%, LDL <70<br>• If 40+ with ASCVD, decrease LDL by 50%, LDL <55 |

## Diabetes Bingo
## "DiaBingo" Shout out Right Answer


## DiaBingo- G

**G ADA goal for A1c is less than ____%**

**G People with DM need to see their provider at least every month**

**G Blood pressure goal is less than**

**G People with DM should see eye doctor (ophthalmologist) at least**

**G The goal for triglyceride level is less than**

**G Goal for LDL cholesterol for people 40+ with diabetes is _____**

**G The goal for blood sugars 1-2 hours after a meal is less than:**

**G People with DM should get this shot every year**

**G People with DM need to get urine tested yearly for _____**

**G Periodontal disease indicates increased risk for heart disease**

**G The goal for blood sugar levels before meals is:**

**G The activity goal is to do ___ minutes on most days**

## Diabetes Care Guidelines- ADA

| Test / Exam | Frequency |
|---|---|
| **A**1c | At least twice a year |
| **B**/P | Each visit |
| **C**holesterol (LDL, HDL, Tri) | Yearly or if med change |
| Vaccinations | Flu yearly, pneumonia, hep |
| Weight / BMI | Yearly |
| UACR/GFR/Creat | Yearly |
| Eye exam | Every 1-2 years |
| Dental Care | At least twice a year |
| Comprehensive Foot Exam | Yearly (more if high risk) |
| Physical Activity Plan | As needed to meet goals |
| Preconception counseling | As needed |

## Chronic Kidney Disease– 2025 Update

- Optimize glucose and BP to protect kidneys.
- Use SGLT-2 with demonstrated benefit to reduce CKD and CVD*
- To reduce CV risk and CKD, use a GLP-1* with demonstrated benefit.
- In people with CKD and albuminuria, a nonsteroidal MRA effective if GFR 25+
- Aim to reduce urinary albumin by ≥30% in people with CKD
  - *SGLT-2i's
    - Empagliflozin (Jardiance), canagliflozin (Invokana), dapagliflozin (Farxiga)
  - *GLP-1 RA's
    - Semaglutide (Ozempic), liraglutide (Victoza), dulaglutide (Trulicity)

| Albuminuria Categories | Urinary Albumin Creatine Ratio (UACR) |
|---|---|
| Normal to mildly increased – A1 | < 30 mg/g |
| Moderately increased – A2 | 30 – 299 mg/g |
| Severely increased – A3 | 300 mg/g + |

| Kidney Disease Stage | GFR |
|---|---|
| Stage 1 – Normal | 90+ |
| Stage 2 – Mild loss | 89 - 60 |
| Stage 3a – Mild to Mod | 59 - 45 |
| Stage 3b – Mod to Severe | 44 - 30 |
| Stage 4 – Severe loss | 29 -15 |
| Stage 5 – Kidney failure | 14 - 0 |

11. Chronic Kidney Disease and Risk Management: Standards of Care in Diabetes—2025

## Mr. Jones - What are Your Recommendations?

**MJ Profile**

64 yr old with type 2 for 11 yrs. Hx of CVD.

Labs:

- A1c 9.3%
- LDL 137 mg/dl
- Triglyceride 260mg/dl
- UACR 32mg/g GFR 54
- B/P 132/94

Self-Care Skills

- Walks dog around block 3 x's a week
- Bowls every Friday
- 3 beers daily
- *What meds?*
- *What referrals?*
- *My foot hurts*

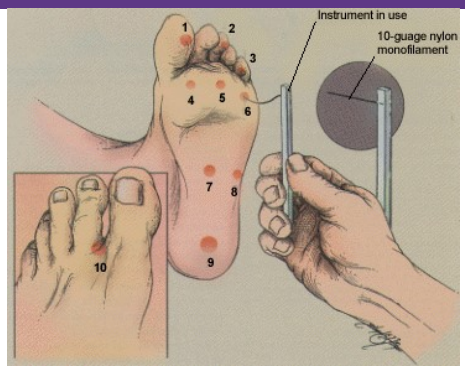
## Lower Extremities

- Lift the Sheets and Look at the Feet



## No Bathroom Surgery

## 5.07 monofilament = 10gms linear pressure




## Three Most Important Foot Care Tips

- Inspect and apply lotion to your feet every night before you go to bed.
- Do NOT go barefoot, even in your house. Always wear shoes!
- Every time you see your provider, take off your shoes and show your feet.

## Diabetes Visit – What do you think?

**A small adjustment can make a BIG Difference**

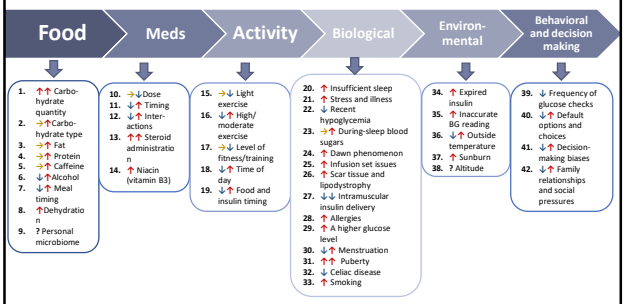
- John arrives at the clinic with a Time in Range slightly above 60%.
- HCP says "You do know that the goal for TIR is 70% " (Door shut)

**How Does John Feel?**

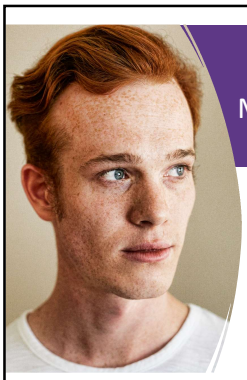
- Defeated
- Embarrassed
- Ashamed
- Angry
- Hurt

How does the HCP feel?

## At least 42 factors affect glucose!




Adapted from Brown A. DiaTribe Learn: Making sense of diabetes… diatribe.org/42factors



## Missed Appointments due to Stigma and Shame

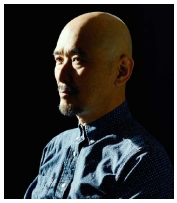
A recent survey of over 2,600 people with diabetes across eight countries revealed that nearly 40% of missed doctor's appointments are due to stigma or shame.

Abbott. (2025, February 4). Abbott's Above the Bias film reveals misconceptions can impact diabetes care. https://abbott.mediaroom.com/2025-02-04-Abbotts-Above-the-Bias-FilmReveals-Misconceptions-Can-Impact-Diabetes-Care

## Diabetes Distress Stories

Common events you will hear about:

- Scary or embarrassing lows
- Surprising highs
- Difficulty managing BG
- Eating challenges
- Managing all of the tech
- Situations with friends, family, colleagues
- Managing health care (feeling judged and misunderstood), insurance, etc.



Used with permission from ReVive 5 Program; Larry Fisher, PhD & Susan Guzman, PhD

## Diabetes Distress – Assess Annually


Type 1 Diabetes Distress Scale (T1-DDS)



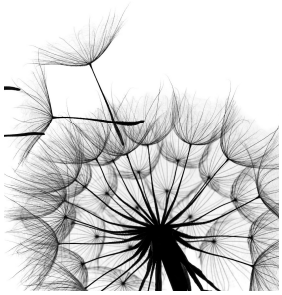


www.behavioraldiabetes.org

https://professional.diabetes.org/sites/default/files/media/ada_mental_health_toolkit_questionnaires.pdf.

## Releasing the Brake

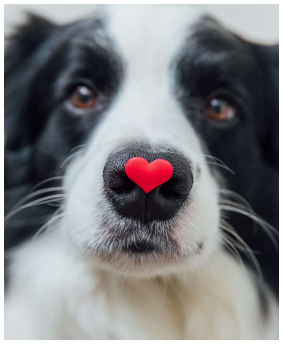
- This strategy recognizes that diabetes distress acts as a brake on the application of existing diabetes knowledge and skills.
- By releasing the diabetes distress brake through emotion-focused intervention, the negative cycle can be efficiently ended.



## Embark Trial – Emotions as Priority

**I have finally given myself permission to make addressing the emotional aspects of diabetes a priority.**

**~Coach Beverly**



## Diabetes Visit – Let's Go *through*

**A small adjustment can make a BIG Difference**

- John arrives at the clinic with a Time in Range slightly above 60%.
- HCP says "You do know that the goal for TIR is 70% " (Door closed)

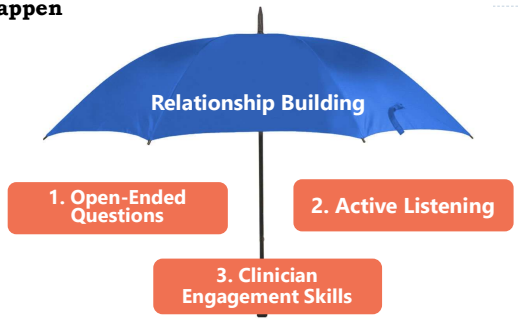
**How Does John Feel?**

- Reassured
- Heard & Seen
- Recognized
- Confident
- Connected

**How does the HCP feel?**

- HCP smiles and says, "Wow John, I can see you are making an effort to improve your time in range."
- Door Open – Connection made


## Relationship Building | Three Tools To Make It Happen

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## Commit to Listening at least Half of the Time

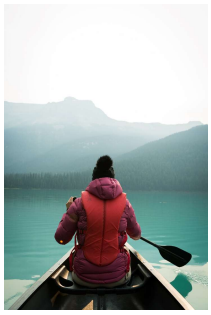
 

- Ask about their life (SDOH)
- Assess current self-management behaviors
- Assess your feelings
- Accept without judgement
- Acknowledge one thing they are doing right
- Advocate for needed resources

- Beliefs about health and diabetes
- Barriers can be confused with non-compliance
- Burnout lookout. On extended diabetes vacation due to diabetes distress?
- Bouncing back – leaning into resilience

- Having the Conversation
- Coaching that highlights *their* knowledge and resilience.
- Carrots – problem solve together and dig for solutions that are meaningful in everyday life.
- Compassion for the people in our care and ourselves.
- Connection through – opening the door.

## Thank You



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