All Voices Matter – Providing Collaborative Diabetes Care

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Founder - www.DiabetesEd.net

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All Voices Matter – Providing Collaborative Care

Objectives:

- Review the changes & updates to the annual ADA *Standards of Medical Care in Diabetes.*
- Identify the key elements of the standards that improve clinical care for people with diabetes.
- Review and discuss appropriate use of the latest medications that address hyperglycemia and cardiorenal health.
- Describe how diabetes distress affects self-management.
- Share practical approaches to promote person centered care.

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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

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17. Diabetes Advocacy

- People living with diabetes deserve to be free from the burden of discrimination.
- We need to all be a part of advocating to ensure a healthy and productive life for people living with diabetes.
- Decrease barriers to diabetes self-management.

Diabetes Care needs to meet outlined standards in all settings.
- In school setting
- Young children in childcare
- For Drivers
- In work settings
- In Detention Facilities
- Insulin Access & Affordability

17. Diabetes Advocacy: Standards of Care in Diabetes—2025

American Diabetes Association Professional Practice Committee

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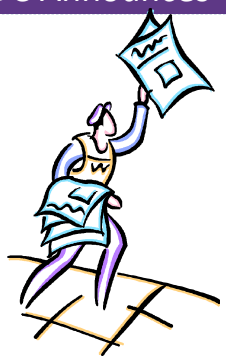
CDC Announces



35% of Americans will have Diabetes by 2050

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

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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%

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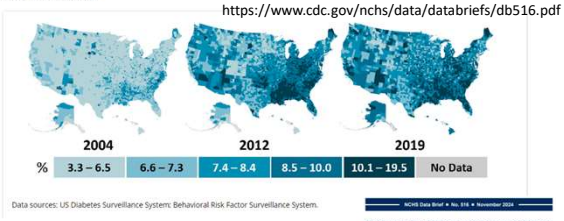
Type 2 Diabetes in America 2025

- 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



Data sources: US Diabetes Surveillance System; Behavioral Risk Factor Surveillance System.

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

NCHS Data Brief • No. 516 • November 2024

Prevalence of Total, Diagnosed, and Undiagnosed Diabetes in Adults: United States, August 2021–August 2023

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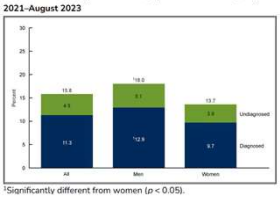
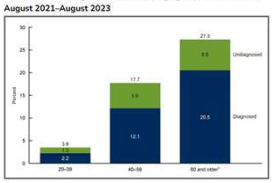
National Center for Health Statistics CDC | Data Brief No. 516, November 2024

Figure 1. Prevalence of total, diagnosed, and undiagnosed diabetes in adults age 20 and older, by sex: United States, August 2021–August 2023



[1]Significantly different from women ($p < 0.05$).

Figure 2. Prevalence of total, diagnosed, and undiagnosed diabetes in adults age 20 and older, by age group: United States, August 2021–August 2023



https://www.cdc.gov/nchs/products/databriefs/db516.htm

Figure 3. Prevalence of total, diagnosed, and undiagnosed diabetes in adults age 20 and older, by weight status: United States, August 2021–August 2023

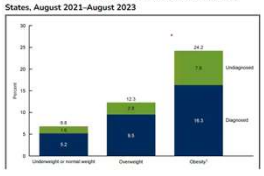
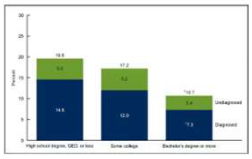


Figure 4. Prevalence of total, diagnosed, and undiagnosed diabetes in adults age 20 and older, by educational attainment: United States, August 2021–August 2023



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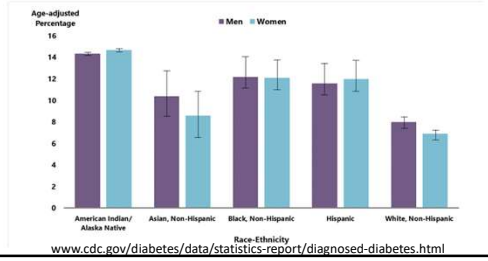
Diabetes Prevalence by Ethnic Group

- 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

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Lived Experiences & Advocacy

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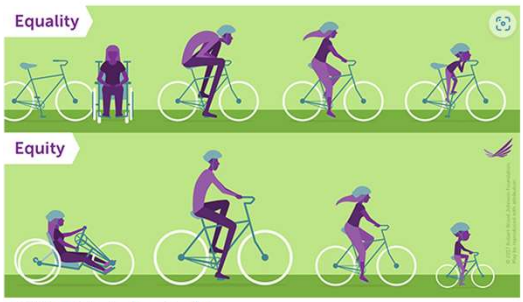
Equality vs Equity



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

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

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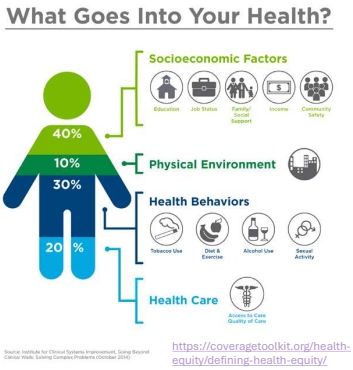
Address Barriers to Self Management

- **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/

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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.

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Tailoring Treatment for Social Context

- "Social determinants of health (SDOH)—*often out of direct control of the individual* and potentially representing lifelong risk—contribute to health care and psychosocial outcomes and must be addressed to improve all health outcomes"

The ADA recognizes this relationship and is taking action.

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Now, let's get to the Nitty Gritty

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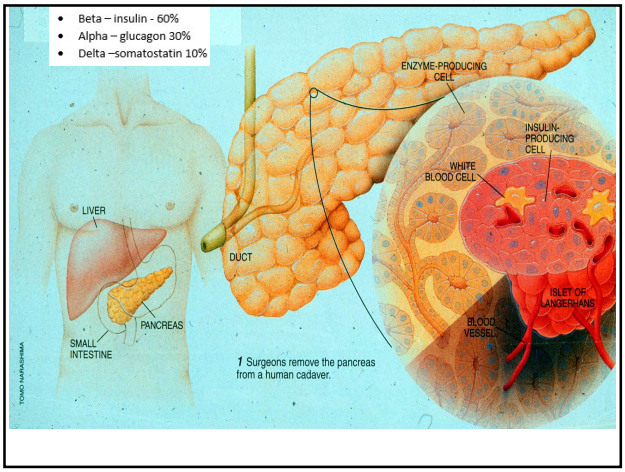

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Hormones Effect on Glucose

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)	↓

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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

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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

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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

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Poll Question 2

- 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 %

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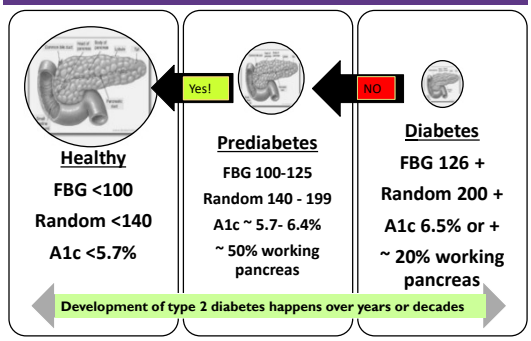
Natural History of Diabetes



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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?

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Poll Question 3

- 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

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3. Prevent or Delay Diabetes for those with Prediabetes

- Prediabetes defined as:
  - A1c 5.7 – 6.4% or fasting BG 100 -125mg/dl
- Action:
  - Screen yearly for diabetes
  - For adults with BMI 23/25
    - Refer to DPP approved programs
    - Includes intensive behavioral lifestyle interventions with 7% wt reduction goal + 150 min exercise week
    - Provide in person or certified assisted programs

American Diabetes Association.

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

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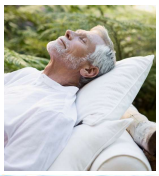
Get About 7 Hours of Quality Sleep to Prevent Diabetes

- 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.
  - For those with a preference for evenings (i.e., going to bed late and getting up late)
    - 2.5-fold higher odds ratio for type 2 diabetes than for those with a preference for mornings (i.e., going to bed early and getting up early),
    - 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.

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3. Pharmacologic Interventions

- 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)

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

- CV Risk Mitigation important.
- Statin can increase BG, stop if notice elevation
- Consider low dose pioglitazone (Actos) if history of stroke.

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Cost Related Barriers

- Among people with chronic illnesses, 2/3 of those who reported not taking medications as prescribed due to CRB never shared this with their physician.
- Especially associated with diabetes medications and

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Indications for Insulin Sensitizers
Rosiglitazone, 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" • Increases insulin sensitivity	pioglitazone (Actos) rosiglitazone	15 – 45 mg daily 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. Lowers A1c 0.5% – 1.0%

- **Efficacy/ Considerations**
  - Reduce A1C ~0.5-1.0%
  - 6 weeks for maximum effect
  - Actos $5 a month, Avandia $300 a month
  - Can cause fluid retention, not indicated w/ CHF

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Poll question 4

- 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

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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 • Decreases hepatic glucose output • First line med at diagnosis of type 2	metformin (Glucophage) Riomet (liquid metformin)	500 - 2550 mg (usually BID w/ meal) 500 - 2550 mg 500mg/5mL	**Side effects:** nausea, bloating, diarrhea, B12 deficiency. To minimize GI Side effects, use XR and take w/ meals. **Obtain GFR before starting.** • If GFR <30, do not use. • If GFR <45, don't start Meformin • If pt on Metformin and GFR falls to 30-45, eval risk vs. benefit; consider decreasing dose. **For dye study,** if GFR <60, liver disease, alcoholism or heart failure, restart metformin after 48 hours if renal function stable. **Benefits:** lowers cholesterol, no hypo or weight gain, cheap. Approved for pediatrics, 10 yrs + 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

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Type 1 ~ Immune Mediated 5-10% of Diabetes

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.

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

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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

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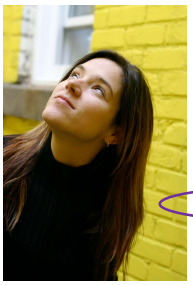
Poll 5. What Kind of Diabetes?



AJ, a 29 year old female admitted to the ICU with a blood glucose of 476 mg/dl and a pH of 7.1. (normal pH 7.35-7.45). Lost 13 pounds, BMI 23. What further testing is needed to determine if person has type 1 or type 2 diabetes?

A. Glutamic acid decarboxylase
B. Beta cells auto antibodies
C. Langerhan's antibody
D. Endogenous insulin titer

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Antibody Testing for Type 1

- Glutamic acid decarboxylase (GAD) primary antibody measured
- If negative, test islet tyrosine phosphatase 2 (IA-2) and/or zinc transporter 8 (ZnT8) where these tests are available.
- In individuals who have not been treated with insulin, antibodies against insulin may also be useful.
- 5–10% of people with type 1 diabetes do not have antibodies.
  - In those diagnosed at <35 years of age who have no clinical features of type 2 diabetes or monogenic diabetes, a negative result does not change the diagnosis of type 1 diabetes,
- Rate of type 1 progression depends on:
  - age at first detection of autoantibody,
  - number of autoantibodies,
  - autoantibody specificity, and autoantibody titer.
  - Glucose and A1C levels may rise well before the clinical onset of diabetes

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

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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.)

	Stage 1	Stage 2	Stage 3
Characteristics	• Autoimmunity • Normoglycemia • Presymptomatic	• Autoimmunity • Dysglycemia • Presymptomatic	• Autoimmunity • Overt hyperglycemia • Symptomatic
Diagnostic criteria	• Multiple islet autoantibodies - GAD, glutamic acid decarboxylase (primary) - islet antigen 2, or - Zinc transporter 8 (ZnT8)	• Islet autoantibodies Dysglycemia: Elevated IFG and/or IGT • FPG 100–125 mg/dL • 2-h PG 140–199 mg/dL • A1C 5.7–6.4% or ≥10% increase in A1C	• Autoantibodies may disappear over time (5-10% may not express antibodies) • Diabetes diagnosed by standard criteria

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

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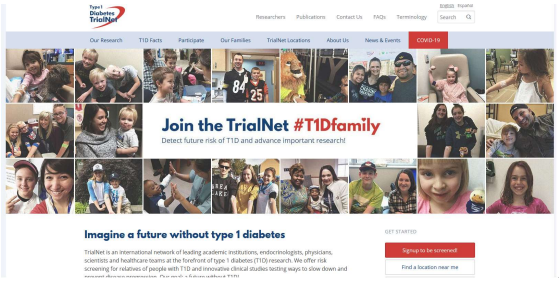
Type 1 (stage 2) Delayed with Teplizumab by 2 years www.DiabetesTrialNet.org

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



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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

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Beta-Cell Mass Loss

- In both type 1 and type 2 diabetes,
- *genetic and environmental factors can result in the progressive loss of ß-cell mass and/or function*
- that manifests clinically as hyperglycemia.
- Once hyperglycemia occurs, people with all forms of diabetes are at risk for developing the same chronic complications, although rates of progression may differ.

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

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Patti Labelle
"divabetic"
“I have diabetes, it doesn’t have me”

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Signs of Diabetes

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

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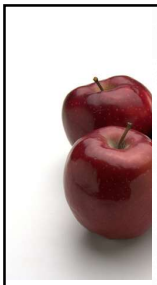

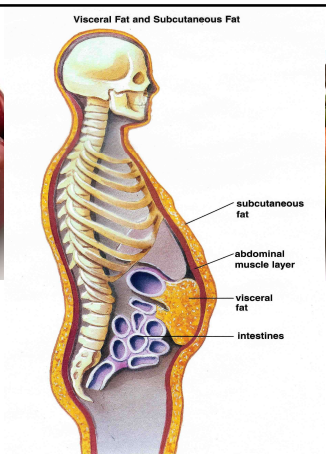

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What is Type 2 Diabetes?

- 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

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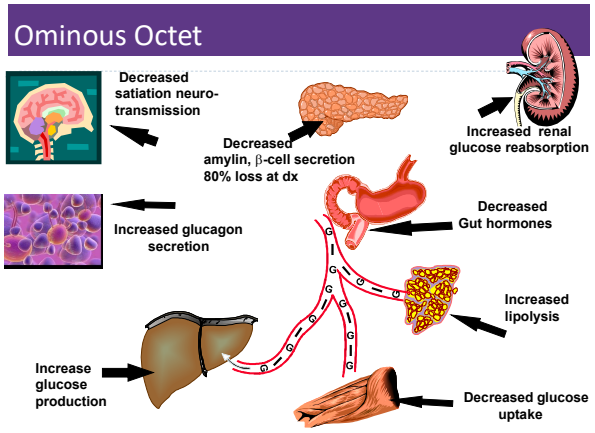
Ominous Octet



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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

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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 "Glucoretic" • Decreases glucose reabsorption in kidneys	Canagliflozin* (Invokana) Dapagliflozin*† (Farxiga) Empagliflozin*† (Jardiance) Ertugliflozin (Steglatro) Bexagliflozin (Brenzavvy)	100 - 300 mg 1x daily 5 - 10 mg 1x daily 10 - 25 mg 1x daily 5 – 15 mg 1x daily 20 mg 1x daily	**Side effects:** hypotension, UTIs, genital infections, increased urination, weight loss, ketoacidosis. **Heart Failure, CV & Kidney Protection:** 1st line therapy for Heart Failure (HF), Kidney Disease (CKD), Cardiovascular Disease, before or with metformin **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. **Benefits:** SGLT-2s* reduce BG, CV death & HF, slow CKD. †Approved for peds, 10 yrs +. Lowers A1C 0.6% to 1.5%.

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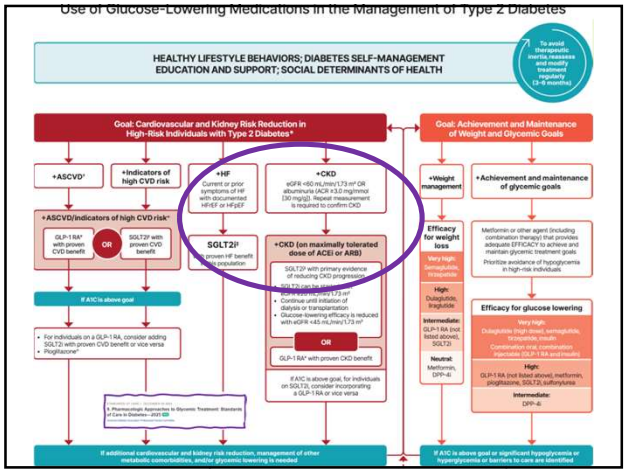

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SGLT-2i Indications Summary

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

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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

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Standard 11 – Protect Kidneys

- Diabetes with CKD - GFR ≥20
- Start SGLT2 to reduce chronic kidney disease progression and cardiovascular events.
- Also consider GLP-1 RA – (ie semaglutide)
- If type 2 diabetes and established Chronic Kidney Disease (CKD)
  - Start nonsteroidal mineralocorticoid receptor antagonist (finerenone) and/or GLP-1 RA recommended for cardiovascular risk reduction.

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

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Poll Question 5

- FZ is older and lives alone and has CHF. Very concerned about avoiding hypoglycemia, since brother almost died from a hypoglycemic incident. Which medication class would you recommend?

a. Meglitinides
b. SGLT-2 Inhibitors
c. Sulfonylureas
d. Analog insulins

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6. Glycemic Goals

A1C

Blood Pressure

Cardiovascular risk reduction

52

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**

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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

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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

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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

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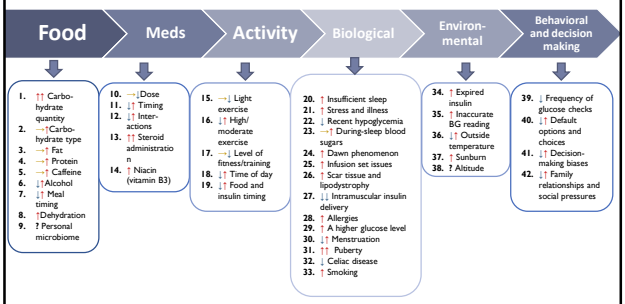
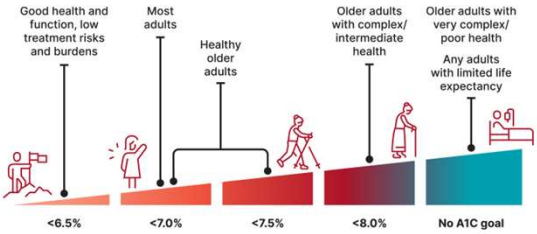
At least 42 factors affect glucose!



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

57



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

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ADA 2025 Goal Summary

A1c less than 7% (individualize)

- Pre-meal BG 80-130
- Post meal BG <180
- Time in Range (70-180) 70% of time

Blood Pressure <130/80

Cholesterol

- Statin therapy based on age & risk status
- If 40+ with ASCVD Risk, decrease LDL by 50%, LDL <70
- If 40+ with ASCVD, decrease LDL by 50%, LDL <55

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"The highest form of wisdom is kindness."
The Talmud

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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

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Case Study - JR

- 38 yr old male, BMI 28, arrives in clinic for physical. Says he has been feeling tired lately, but attributes that to his job. In office fingerstick reads 228 mg/dl.
- 1. What lab tests are needed?
- 2. What would you include in your physical exam?
- What vaccinations?
- What referrals?
- What tools?

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Lab Eval at Initial & Annual Visit

- A1c (each 3-6 mo's)
- Each year
  - Lipids, CBC with platelets
  - Liver function
  - Spot urinary albumin-to-creat ratio (UACR))
  - Serum creat and GFR
  - TSH, celiac (type 1)
  - B12 if on metformin >5yrs
  - Calcium, Vita D, and phosphorus if appropriate
- Serum K
  - If on ACE, ARBs or diuretics

4. Comprehensive Medical Evaluation and Assessment of Comorbidities: Standards of Care in Diabetes—2025

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Case Study - JR

- 38 yr old male, BMI 28, arrives in clinic for physical. Says he has been feeling tired lately, but attributes that to his job. In office fingerstick reads 228 mg/dl.
- 1. What lab tests are needed?
- 2. What would you include in your initial exam?
- What vaccinations?
- What referrals?
- What tools?

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Physical Exam

- Height, weight, BMI, pubertal development
- Blood pressure
- Fundoscopic exam, thyroid
- Skin exam –insertion sites, acanthosis, fungus, sores, feet
- Bone health, Hypo
- Depression, Distress Anxiety
- Functional and cognitive issues
- Comprehensive foot exam
  - Visual eval
  - Screen for Peripheral Arterial Disease
  - Monofilament and vibration assessment

4. Comprehensive Medical Evaluation and Assessment of Comorbidities: Standards of Care in Diabetes—2025

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Table 4.1—Components of the comprehensive diabetes medical evaluation at initial, follow-up, and annual visits

	Visit		
	Initial	Every follow-up	Annual
• Vitamin B12 if taking metformin for >5 years	✓		✓
• CBC with platelets	✓		✓
• Serum potassium levels in people with diabetes on ACE inhibitors, ARBs, or diuretics§	✓		✓
• Calcium, vitamin D, and phosphorous for appropriate people with diabetes	✓		✓
Physical examination			
• Height, weight, and BMI; growth and pubertal development in children and adolescents	✓	✓	✓
• Blood pressure determination	✓	✓	✓
• Orthostatic blood pressure measures (when indicated)	✓		✓
• Fundoscopic examination (refer to eye specialist)	✓		✓
• Thyroid palpation	✓		✓
• Skin examination (e.g., acanthosis nigricans, insulin injection or insertion sites, and lipodystrophy)	✓	✓	✓
• Comprehensive foot examination	✓		✓
• Visual inspection (e.g., skin integrity, callous formation, foot deformity or ulcer, and toenails)*	✓	✓	✓
• Check pedal pulses and screen for PAD with ABI testing if a PAD diagnosis would change management	✓		✓
• Determination of temperature, vibration or pinprick sensation, and 10-g monofilament exam	✓		✓
• Screen for depression, anxiety, diabetes distress, fear of hypoglycemia, and disordered eating	✓		✓
• Assessment for cognitive performance if indicated†	✓		✓
• Assessment for functional performance if indicated†	✓		✓
• Consider assessment for bone health (e.g., loss of height and kyphosis)	✓		✓

Standard 4 – Diabetes Medical Evaluation

4. Comprehensive Medical Evaluation and Assessment of Comorbidities: Standards of Care in Diabetes—2025

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Assessment and Treatment Plan

4. Comprehensive Medical Evaluation and Assessment of Comorbidities: Standards of Care in Diabetes—2025 FREE

Therapeutic treatment plans

- Lifestyle management
- Pharmacologic therapy: glucose lowering
- Pharmacologic therapy: cardiovascular and kidney disease risk factors
- Weight management with pharmacotherapy or metabolic surgery, as appropriate
- Use of glucose monitoring and insulin delivery devices
- Referral to diabetes education, behavioral health, and medical specialists

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Assessment and Treatment of Disabilities

- Diabetes associated with increased risks of disability due to neuropathy, visual impairment and lower limb complications
- Refer to specialist
- Take preventive action to maximize quality of life.

4. Comprehensive Medical Evaluation and Assessment of Comorbidities: Standards of Care in Diabetes—2025 FREE

Assess for disability at the initial visit and for decline in function at each subsequent. If a disability is impacting functional ability or capacity to manage their diabetes, refer to appropriate specialist.

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Lab Test, BP, Family History

- A1C – 9.8%
- Cholesterol - 216
- LDL – 164 mg/dL
- HDL – 46
- Triglycerides – 276
- TSH – 1.43
- GFR - >60
- UACR - <30 mg/gm
- ALT, AST 90 & 85
- Platelets 217
- K+ 3.8

- Family history
  - Dad with type 2, history of stroke
- B/P
  - 156/88 then 148/82
- BMI 31
- Skin – some acanthosis nigricans visible on neck
- Lower extremities calluses
- Mouth - gingivitis

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Acanthosis Nigricans

- A skin disorder characterized by darkening (hyperpigmentation) and thickening (hyperkeratosis)of the skin
  - mainly in the folds of the skin in the armpit (axilla), groin and back of the neck.
- Acanthosis nigricans is not a skin disease per se but a cutaneous sign of an underlying condition or disease.
  - Associated with extra weight and insulin resistance

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10. Cardiovascular Disease and Risk Management

- Higher risk of Atherosclerotic cardiovascular disease (ASCVD):
  - history of acute coronary syndrome,
  - myocardial infarction (MI),
  - stable or unstable angina,
  - coronary or other arterial revascularization,
  - stroke, transient ischemic attack,
  - or peripheral artery disease (PAD) including aortic aneurysm.
- Plus 2x's risk of Heart Failure
- Leading cause of morbidity and mortality in people with diabetes

Large benefits are seen when multiple CV risk factors are addressed simultaneously

With more aggressive goals, rates of CVD have decreased.
CV Risks predicted to increase in future.

10. Cardiovascular Disease and Risk Management: Standards of Care in Diabetes—2025

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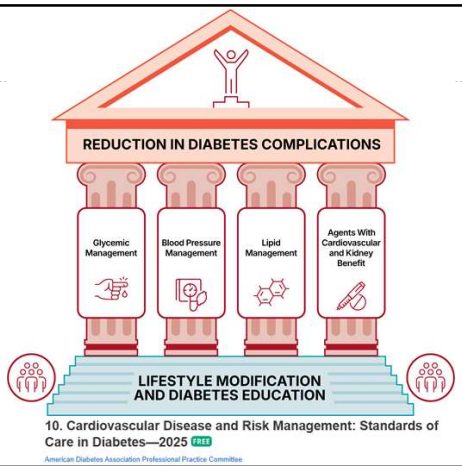

10. Cardiovascular Disease and Risk Management: Standards of Care in Diabetes—2025 FREE

American Diabetes Association Professional Practice Committee

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Assess ASCVD and Heart Failure Risk Yearly

- Duration of diabetes & 55+
- BMI
- Hypertension
- Dyslipidemia
- Smoking
- Family history of premature coronary disease
- Chronic kidney disease – presence of albuminuria

Treat modifiable risk factors as described in ADA guidelines.

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BP Treatment in addition to Lifestyle

- **First Line B/P Drugs if 130/80 +**
  - With albuminuria or ASCVD
    - Start either ACE or ARB*
  - No albuminuria - Any of the 4 classes of BP meds can be used:
    - *ACE Inhibitors, *ARBs, *thiazide-like diuretics or calcium channel blockers.
    - *Monitor K+ 7-14 days after start/annually
  - Avoid ACE and ARB at same time
  - Multiple Drug Therapy often required
- **If B/P ≥ 150 /90 start 2 drug combo**

*Albuminuria = Urinary albumin creatinine ratio of 30+

10. Cardiovascular Disease and Risk Management: Standards of Care in Diabetes—2025

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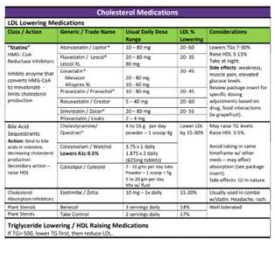
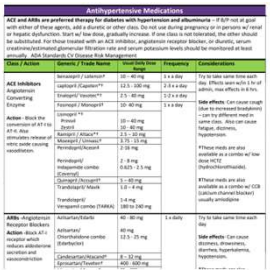
Lipid and HTN Meds Cheat Sheets





Website: https://diabetesed.net/coach-bevs-diabetes-cheat-sheets/
On CDCES Coach App too

For exam, know major classes, when used, side effects and considerations.

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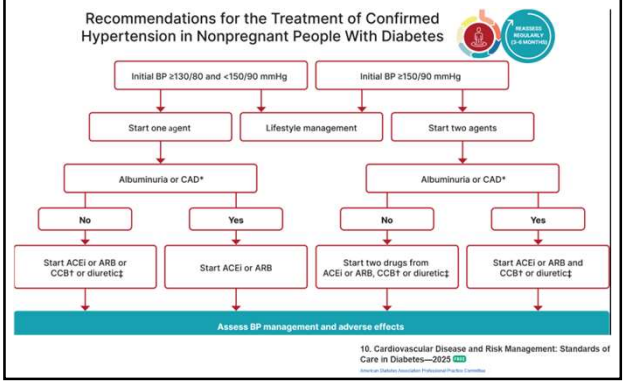
Hypertension Management



10. Cardiovascular Disease and Risk Management: Standards of Care in Diabetes—2025

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Poll Question 6

RZ is 47 years old with type 2 diabetes and hypertension. RZ takes metformin 1000 mg BID, plus lisinopril 20mg daily. RZs LDL is 130 mg/dL. Based on the most recent ADA Standards, what is the LDL Cholesterol target for RZ?

A. LDL less than 100 mg/dL.
B. Lower LDL by 30%.
C. LDL target of 65 mg/dL or less.
D. Determine LDL target based on ASCVD risk.

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Lipid Goals – Primary Prevention

- For people with diabetes aged 40–75:
- No ACSVD Risk – Start Moderate intensity statin
- Higher cardiovascular risk*
  - (*HTN, Smoke, CKD, BMI 30+ albuminuria, family hx ACSVD)
  - **High-intensity statin** therapy is recommended
- **Reduce LDL cholesterol by at least 50% of baseline**
  AND
- **Target LDL cholesterol <70 mg/dL.**

- **If LDL cholesterol 70 +**
- it may be reasonable to add ezetimibe or a PCSK9 inhibitor to maximum tolerated statin therapy.

10. Cardiovascular Disease and Risk Management: Standards of Care in Diabetes—2025

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Statin Dosing

High Intensity: Lowers LDL ≥50%

- Lipitor (atorvastatin)
  - 40-80mg
- Crestor (rosuvastatin)
  - 20-40mg

*****If person can't tolerate intended statin dose, use maximally tolerated dose**

Moderate Intensity: Lower LDL 30-<50%

- Lipitor (atorvastatin)
  - 10-20mg
- Crestor (rosuvastatin)
  - 5-10mg
- Zocor (Simvastatin)
  - 20-40mg
- Pravachol (pravastatin)
  - 40 – 80mg
- Mevacor (lovastatin) 40 mg
- Lescol (fluvastatin) XL 80mg
- Livalo (pitavastatin) 2-4mg

10. Cardiovascular Disease and Risk Management: Standards of Care in Diabetes—2025

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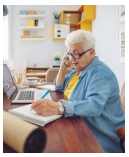
Lipid Goals for People *with* ASCVD

- For people of all ages with diabetes and atherosclerotic cardiovascular disease:
  - Add high-intensity statin to lifestyle therapy.
  - **Reduce LDL cholesterol by 50% or greater from baseline with LDL cholesterol goal of <55.**
  - Addition of ezetimibe or a PCSK9 inhibitor with proven benefit in recommended if goal is not achieved on maximum tolerated statin therapy.



Lipid Management for Secondary Prevention of Atherosclerotic Cardiovascular Disease Events in People With Diabetes

Use lifestyle and high-intensity statin therapy to reduce LDL cholesterol by ≥50% from baseline to a goal of <55 mg/dL (<1.4 mmol/L).	Add ezetimibe or a PCSK9-directed therapy with demonstrated benefit if LDL cholesterol goals are not met on maximum tolerated statin therapy.	Use an alternative lipid-lowering treatment for those who are statin intolerant: • PCSK9 inhibitor with monoclonal antibody treatment • Bempedoic acid • PCSK9 inhibitor with siRNA inclisiran

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New Lipid Lowering Medications

Contributor: Diana Isaacs, PharmD, BCPS, BCACP, BC-ADM, CDCES, FADCES, FCCP 2022

PCSK9 Inhibitors Lipid Medications
Proprotein convertase subtilisin/kexin type 9

	Alirocumab (Praluent)	Evolocumab (Repatha)
FDA-approved indications	• Primary hyperlipidemia (HLD) • Homozygous familial hypercholesterolemia (HoFH) • Secondary prevention of cardiac events	
Dosing	• **HoFH**: 150 mg SC q2 weeks • **HLD or secondary cardiac prevention**: 75 mg SC q2 weeks or 300 mg SC q4 weeks; if adequate LDL response not achieved, may increase to max of 150 mg q2 weeks	• **HoFH**: 420 mg SC q4 weeks; may increase to 420 mg q2 weeks if meaningful response not achieved in 12 weeks • **HLD or secondary cardiac prevention**: 140 mg q2 weeks or 420 mg q4 weeks
Dosage forms	• Auto-injector 75 mg/mL or 150 mg/mL	• Repatha Sure Click (auto-injector) 140 mg/mL • Repatha Pushtronex System (single use infusor with pre-filled cartridge) 420 mg/3.5 mL – administered over 9 minutes
Storage	• Store in refrigerator in outer carton until used • Once used, keep at room temperature, use within 30 days	
Injection clinical pearls	• Do not shake or warm with water • Administer by SC injection into thigh, abdomen, or upper arm • Rotate injection site with each injection	
Drug interactions	• No known significant interactions	
Monitoring parameters	• Lipid panel before initiating therapy, 4-12 weeks after initiating, and q3-12 months thereafter	
Side effects	• Injection site reaction (4-17%) • Hypersensitivity reaction (9%) • Influenza (6%) • Myalgia (4-6%) • Diarrhea (5%)	• Nasopharyngitis (6-11%) • Upper respiratory tract infection (9%) • Diabetes mellitus (9%) • Influenza (8-9%) • Injection site reaction (6%) • Myalgia (4%)

From Meds Cheat Sheet Page

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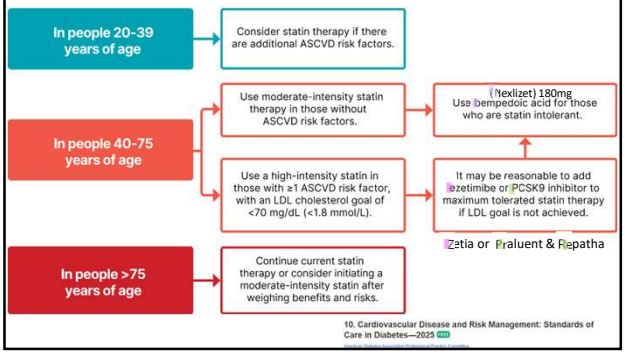
*Bempedoic acid, a novel LDL cholesterol–lowering agent acting in the same pathway as statin but without activity in skeletal muscle, which limits the muscle-related adverse effects, lowers LDL cholesterol levels by 15% for those on statins and 24% for those not taking statins (140). Use of this agent with ezetimibe results in an additional 19% reduction in LDL cholesterol



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Coronary Vessel Disease Meds

- In those with CVD or at higher risk:
  - Get blood glucose to goal
  - Statin therapy with addition of ezetimibe or a PCSK9 inhibitor recommended if goals not achieved on maximum tolerated statin therapy.
  - B/P Med (ACE or ARB)
  - Beta blocker after MI or CHF
  - Aspirin (or another agent)
  - Diabetes Meds that significantly decrease CV events:
    - *SGLT-2i's
      - Empagliflozin (Jardiance), canagliflozin (Invokana), dapagliflozin (Farxiga)
    - *GLP-1 RA's
      - Semaglutide (Ozempic), liraglut

10. Cardiovascular Disease and Risk Management: *Standards of Care in Diabetes—2024*

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JR Started on These Medications

- Meds started:
  - Metformin 1000 mg
  - Glipizide 10 mg BID (sulfonylurea)
  - Lovastatin 40 mg
  - Lisinopril 20mg (ACE Inhibitor)
  - Pioglitazone (Actos) 15mg

- B/P 142/94 Pulse 86
- A1C – 9.8%
- Cholesterol - 216
- LDL – 164 mg/dL
- HDL – 46
- Triglycerides – 276
- TSH – 1.43
- GFR - >60
- UACR - <30 mg/gm
- ALT, AST 90 & 85
- Platelets 217
- K+ 3.8

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Case Study - JR

- 38 yr old male, BMI 28, arrives in clinic for physical. Says he has been feeling tired lately, but attributes that to his job. In office fingerstick reads 228 mg/dl.
- 1. What lab tests are needed?
- 2. What would you include in your initial exam?
- What vaccinations?
- What referrals?
- What tools?

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Lower Extremities

- Lift the Sheets and Look at the Feet



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No Bathroom Surgery

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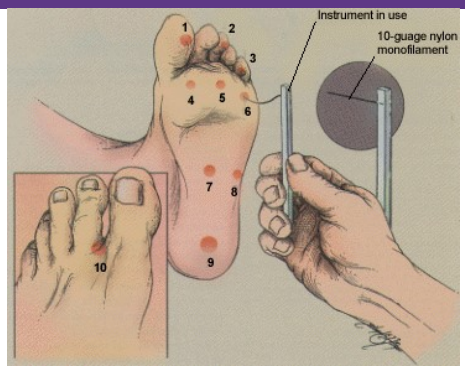
5.07 monofilament = 10gms linear pressure



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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.

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Immunization Schedule for Diabetes 2025

Vaccine	Who by Age	Series and Frequency
Hepatitis B Vaccine	Less than 60 years*	2-3 dose series
RSV	Adults ≥ 60 years	Single dose
Influenza (avoid live attenuated vaccine)	All	Annually
Tetanus, diphtheria, pertussis (TDAP)	All adults; extra dose during pregnancy	Booster every 10 years.
Zoster	50+	2 dose Shingrix
COVID-19	Starting at age 6 mo's	Initial vaccination and boosters
Pneumonia (PPSV23) Pneumovax	Adults19-64*	See Standards for schedule and details and for those 65 or older.
*Pneumococcal Conjugate Vaccine (PCV15, PCV20)	19-64 with underlying risk factors or no previous vaccination*.	May need PPSV23 follow-up vaccine ≥1 year.* If 65+, discuss with provider.

2025 ADA Standards, Vol.48, S66-S67
*See Table 4.3 for detailed info/considerations

4. Comprehensive Medical Evaluation and Assessment of Comorbidities: Standards of Care in Diabetes—2025

For a comprehensive list of vaccines, refer CDC & Prevention at cdc.gov/vaccines

For educational purposes only. www.DiabetesEd.net

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Referrals for Initial Care Mgmt

- Eye professional – annual check
- Family planning
- RD for nutrition therapy
- DSMES - Diabetes Self-Management Education Support
- Dentist for comprehensive dental examination
- Behavioral health professional & audiology, if indicated
- Social worker/community resources
- Rehab medicine for cog/disability eval

4. Comprehensive Medical Evaluation and Assessment of Comorbidities: Standards of Care in Diabetes—2025

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Critical times to provide and modify DSMES

- At diagnosis
- Annually and/or when not meeting treatment goals
- When complicating factors develop (medical, physical, psychosocial) develop
- When transitions in life and care occur.

Powers MA, Bardsley JK, et al. DSMES Consensus Report, The Diabetes Educator, 2020
ADCES. AADE7 Self-Care Behaviors, The Diabetes Educator, 2020

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

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Case Study - JR

- 38 yr old male, BMI 28, arrives in clinic for physical. Says he has been feeling tired lately, but attributes that to his job. In office fingerstick reads 228 mg/dl.
- 1. What lab tests are needed?
- 2. What would you include in your initial exam?
- What vaccinations?
- What referrals?
- What tools?

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Diabetes Toolkit - Individualize

- Meter
  - Strips that aren't expired?
- List of Meds
- Plan for Lows
- Emergency Plan
- Power back-up

- BG Checks and logging results
- Diabetes ID
  - Phone, medic alert, on person
- Carbohydrate source
  - Granola bar, glucose tabs, GU, gummy bears
- Rescue Meds

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JR Returns in 1 month

- Blood glucose improved
- B/P 142/94 Pulse 86
- Meds started include:
  - Metformin 1000 mg
  - Glipizide 10 mg BID (sulfonylurea)
  - Lovastatin 40 mg
  - Lisinopril 20mg (ACE Inhibitor)
  - Pioglitazone (Actos) 15mg

Provider increases metformin/glipizide and adds SGLT-2 Empagliflozin 10 mg

- JR checks BG 4-7 x's a week.
  - Lowest 152, Highest 289
- What other issues do we need to evaluate?
  - Activity – mostly sedentary
  - Sleep: 6-7 hrs a night
  - Pain issues – knees
  - Brushing – once daily
  - Alcohol and other drug use
    - Drinks a few beers on weekends
  - Coping - okay
  - Steatosis – elevated LFTs
  - Affordability
  - Met with CDCES and RD

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Diabetes is Complex

- Goal – achieve well being and negotiated outcomes
- Psychological factors:
  - Environmental
  - Social
  - Behavioral
  - Emotional
- Keep it person centered while integrating care into daily life
  - Consider the individual

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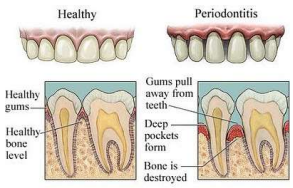
Periodontal Disease

- More severe and prevalent with diabetes and elevated A1C levels.
  - periodontal treatment associated with better glycemic control (A1C 8.3% vs. 7.8%)
  - Benefits lasted for 12 mo's
- People with periodontal disease have higher rates of diabetes.
- Bidirectional



Oral Care Matters
- See dentist at least yearly
- Dental hygienist twice yearly
- Brush twice daily
- Floss daily

4. Comprehensive Medical Evaluation and Assessment of Comorbidities: Standards of Care in Diabetes—2025

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8. Obesity and Weight Management for Prevention & Treatment of Type 2 Diabetes

- Use person centered language that fosters collaboration
- *Once a year, monitor obesity-related anthropometric measurements to inform treatment considerations*
  - *BMI, waist circumference, waist-to-hip-ratio and waist to-height-ratio*
- Be sensitive and allow for privacy when weighing

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

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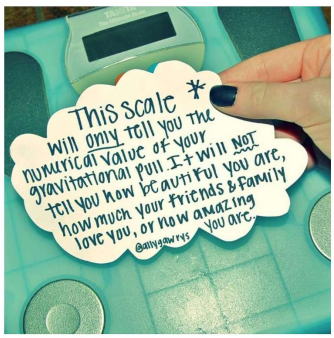
Weight is a Heavy Issue



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Behavioral Factors and Med Taking

- Eating Patterns & weight history, carb counting
- Sleep behaviors – goal 7 hrs
- Tobacco, alcohol, substance use, physical activity
- Social supports and coping skills, daily routine
- Medication taking behaviors
  - How many times a day/week are you taking this medication?
  - Complimentary meds
  - Evaluate for hyper and hypo glycemia

4. Comprehensive Medical Evaluation and Assessment of Comorbidities: Standards of Care in Diabetes—2025

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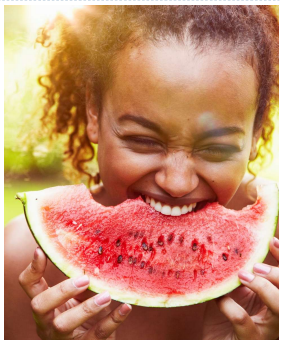
Medical Nutrition Therapy Works

- 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



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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".

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

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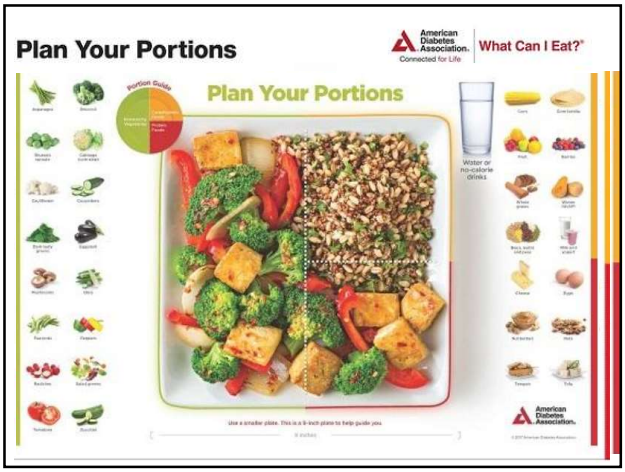

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Exercise Standards

- 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

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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".

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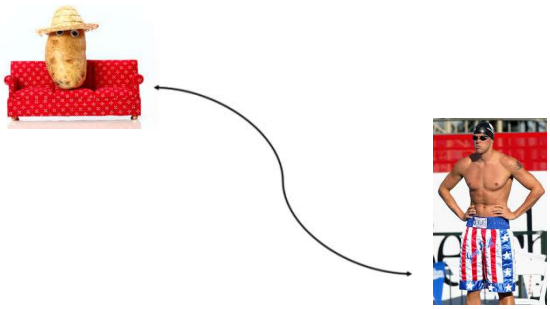
Where are we on this continuum?



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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."

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JR Return Visit 3 months

- A1c 8.6% (was 9.8)
- TSH 1.9 mIU/L
- B/P 136/84 Pulse 76
- Has gained about 4 pounds

- Meds include:
  - Metformin 2000 mg
  - Empagliflozin 10 mg
  - Glipizide 20 mg BID
  - Lovastatin 40 mg
  - Lisinopril 20mg (increase to 40)

Provider increases lisinopril & empagliflozin to 25mg and adds 10 units basal insulin

Would you suggest a different approach?

- JR checks BG each morning and sometimes at hs
  - Lowest 68 after taking meds (usually around 140ish)
  - Highest 249
- Has started walking after dinner.
- Is trying to eat healthier, but upset he gained wt.
- Says the meds are affordable so far.
- Made dental appt and is trying to brush 2x day

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

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Hypoglycemia (Glucose) Alert Values

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

- **BG < 54mg/dl – Level 2**
- Indicates serious hypo. Contact provider for med change. Glucagon Emergency Kit

- **Severe Hypoglycemia – Level 3**
- Requires external assistance – no threshold

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Hypoglycemia: Identify, Treat, & Prevent

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

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

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Glucagon Rescue Medications for Diabetes-Related Hypoglycemia

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

- A1c 7.3% (was 8.6)
- TSH 1.9 mIU/L
- B/P 132/82 Pulse 76
- Denies any low blood sugar
- Lost 2 pounds

- Meds include:
  - Metformin 2000 mg
  - Empagliflozin 25 mg
  - Glipizide 20 mg BID
  - Lovastatin 40 mg
  - Lisinopril 40mg
  - 10 units basal insulin

Ask if he can try the medication that helps people lose weight?

- JR checks BG each morning and sometimes at hs
  - Lowest 112 (usually around 130ish)
  - Highest 230
- Still walking after dinner.
- Hasn't seen dentist
- Sometimes forgets to take meds at night
- Sleeping better
- Worried if meds are causing harm
- Started taking cinnamon capsules

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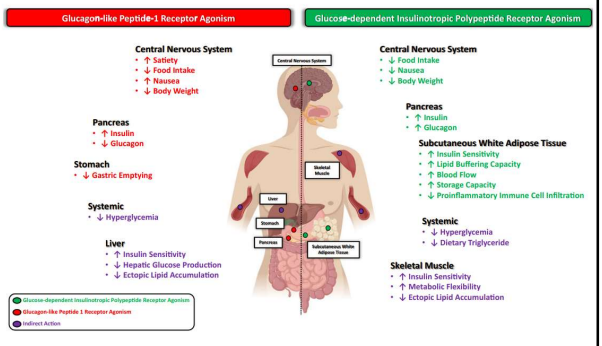
Actions of GLP-1 and GIP



Samms RJ, Coghlan MP, Sloop KW. How May GIP Enhance the Therapeutic Efficacy of GLP-1? Trends Endocrinol Metab. 2020 Jun;31(6):410-421.

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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 **"Incretin Mimetic"** • Increases insulin release with food • Slows gastric emptying • Promotes satiety • 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. **Black box warning:** Thyroid C-cell tumor warning (avoid if family history of medullary thyroid tumor). *Significantly reduces risk of CV death, heart attack, and stroke. §Approved to reduce risk of CKD †Approved for pediatrics 10-17 yrs Lowers A1C 0.5 – 1.6% Weight loss: 4-6% body weight loss.
	exenatide XR† (Bydureon)	2 mg 1x a week 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 1x a week pen injector	
	semaglutide*§ (Ozempic)	0.25, 0.5, 1.0 and 2.0 mg 1x a week pen injector	
	(Rybelsus) Oral tablet	3, 7, and 14 mg daily in a.m. Take on empty stomach with sip of water	
GLP-1 & GIP Receptor Agonist 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 1x a week prefilled single dose pen Increase dose by 2.5 mg once monthly to reach targets.	**Side effects:** nausea, diarrhea, injection site reaction. Report pancreatitis, signs of intestinal blockage. **Black box warning:** Avoid if family history of medullary thyroid tumor. Lowers A1C ~ 1.8 - 2.4% 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.

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Poll Question 7

AR is 36 years old with type 2 diabetes and a BMI of 41kg/m^2. Current diabetes medications include: metformin, sitagliptin (Januvia) and empagliflozin (Jardiance) at maximum doses. AR is prescribed tirzepatide (Mounjaro). Based on this information, what action do you recommend to the provider?

A. Verify kidney function first.
B. Stop the sitagliptin when initiating tirzepatide.
C. Decrease the dose of metformin to prevent hypoglycemia.
D. Evaluate thyroid function before starting tirzepatide.

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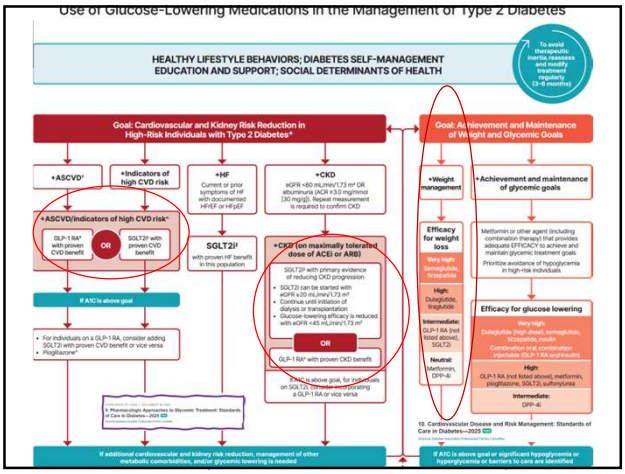

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GLP-1/GIP Receptor Agonist Indications

"Recent clinical trial suggests that the GLP-1 RA semaglutide has beneficial effect on CVD, mortality, and kidney outcomes among people with CKD - recommend that semaglutide be used as another first-line agent for people with CKD".

Exenatide IR **(Byetta)** Lixisenatide **(Adlyxin)** Semaglutide **(Rybelsus)**	Yes		
Exenatide ER **(Bydureon)**	Yes for 10 yrs and older		
Dulaglutide **(Trulicity)**	Yes for 10 yrs and older	Yes	
Semaglutide **(Ozempic)**	Yes	Yes Kidney protective	Yes Wegovy 2.4mg
Liraglutide **(Victoza)**	Yes for 10 yrs and older	Yes	Yes Saxenda 3mg
Tirzepatide **(Mounjaro)**	Yes	?	Yes, Zepbound up to 15 mg

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GLP-1 /GIPs Approved for Weight Loss

- Liraglutide:
  - Victoza 1.8 mg (diabetes)
  - Saxenda 3 mg (wt loss)
  - 6% wt loss, $1349 a mo
- Semaglutide:
- Ozempic 2mg (diabetes)
  - Wegovy 2.4mg (wt loss)
  - 6% wt loss, $1349 a mo
- Tirzepatide
  - Mounjaro 15mg (diabetes)
  - Zepbound (wt loss)
  - 13% wt loss - $1056 a mo

All 3 Approved for use in adults with a:

- BMI of ≥ 30 or
- BMI of ≥ 27 or greater who have hypertension, type 2 diabetes, or dyslipidemia.

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Metabolic Surgery Stats

- Surgical Treatment and Medications Potentially Eradicate Diabetes Efficiently (STAMPEDE) trial, randomized 150 participants with diabetes to receive [illegible]
- Metabolic surgery, which results in an average >20% body weight loss, greatly improving glycemia and often leading to remission of diabetes, improved quality of life, improved cardiovascular outcomes, and reduced mortality
- [illegible] have remission eventually [illegible] recurrence.
  - Median disease-free period among such individuals following RYGB is 8.3 years
  - Majority of those who undergo surgery maintain substantial improvement of glycemia from baseline for at least 5–15 yrs

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

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Assessing Malnutrition

- At Risks Groups:
  - Individuals on GLP-1 or GIP RA or after metabolic surgery
  - Individuals with multiple chronic conditions
  - Older age groups
  - Food insecurity and poverty
- Screen:
  - For malnutrition and sarcopenia
- Recommend:
  - Whole- food-based eating pattern
  - Adequate protein
  - Resistance training

Malnutrition is defined by the World Health Organization as "deficiencies, excesses, or imbalances in a person's intake of energy and/or nutrients."

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

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Medical Evaluation Goal

- Prioritize components based on time and resources.
- Assess:
  - Diabetes self-management, nutrition, psychosocial health, risk of acute and chronic complications
  - Immunizations
  - Sleep habits
  - Cancer screenings
  - Bone Health
  - Liver Health
  - Cardiovascular disease
  - Smoking cessation
  - Ophthalmological, dental and podiatric referrals

4. Comprehensive Medical Evaluation and Assessment of Comorbidities: Standards of Care in Diabetes—2025

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Liver Nomenclature Update

Old Terms	New Terms
Fatty Liver Disease	Steatotic Liver Disease
Non-Alcoholic Steatohepatitis (NASH)	Metabolic Dysfunction-Associated Steatohepatitis (MASH)
Non-Alcoholic Fatty Liver Disease (NAFLD)	Metabolic Dysfunction-Associated Steatotic Liver Disease (MASLD)

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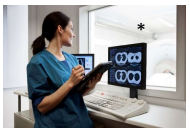
Metabolic Sydrome & Steatohepatitis

Adults with type 2 diabetes.

- >70% have MASLD
  - Of those 50% have MASH*
  - 12-20% have fibrosis
- Adults with type 1
  - 20% have MASLD
- **Associated with :**
  - Increased BMI (30+)
  - Cardiometabolic risk factors
  - Over 50 yrs
  - *ALT & AST 30 units/L +



***ALT & AST**
(Eval if more if 30+ for 6 mo's - ADA)

4. Comprehensive Medical Evaluation and Assessment of Comorbidities: Standards of Care in Diabetes—2025

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Metabolic Associated Steatohepatitis

MASH is when fat reaches 5% of the liver's weight

Without consumption of significant amounts of alcohol defined as:

- Ingestion of less than 21 standard drinks per week in men and
- Less than 14 standard drinks per week in women

over a 2-year period preceding evaluation) or the presence of other secondary causes of Steatosis disease.

Metabolic dysfunction–associated steatotic liver disease (MASLD)

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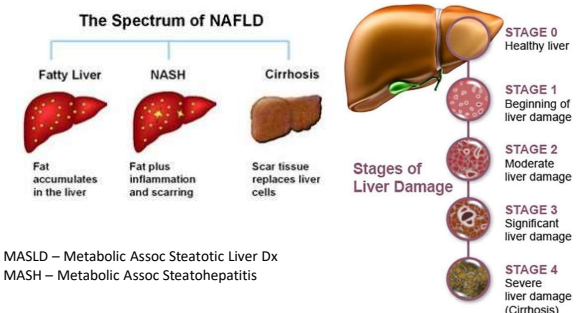
Natural History of MASLD to MASH



MASLD – Metabolic Assoc Steatotic Liver Dx
MASH – Metabolic Assoc Steatohepatitis

https://liverfoundation.org/wp-content/uploads/2020/11/StagesFibrosis.jpg

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Symptoms of Steatosis

If symptoms do appear, they may include:

- A feeling of fullness in the middle or upper right side of the abdomen
- Abdominal pain, nausea
- Loss of appetite or weight loss
- Weakness
- Jaundice
- Swelling of the abdomen and legs
- Mental confusion
- Extreme fatigue or tiredness
- Signs of advanced disease include:
  - Portal hypertension, spider angiomas, reddening of palms, declining platelet counts

Mayo Clinic

https://dermcollective.com/palmar-erythema/

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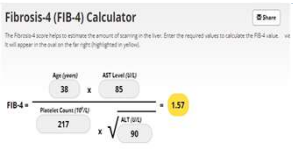
Screening for MASH – FIB-4



- The American College of Gastroenterology considers Upper limit of normal ALT levels:
- 29–33 units/L for males
- 19–25 units/L for female individuals

(mdcalc.com/calc/2200/fibrosis-4-fib-4-index-liver-fibrosis).

FIB-4 estimates risk of hepatic cirrhosis (age 35+):

- Calculated by imputing:
  - Age
  - plasma aminotransferases (AST and ALT)
  - and platelet count
- FIB-4 Risk Levels
  - Lower risk is <1.3
  - Intermediate 1.3 to 2.67
  - High risk >2.67
    - considered as having a high probability of advanced fibrosis (F3–F4).

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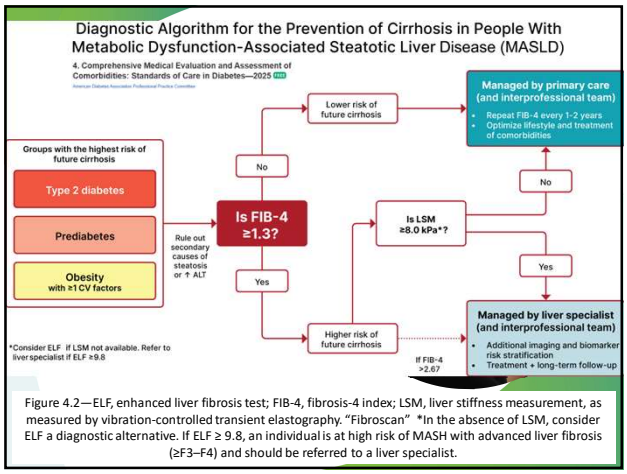

Figure 4.2—ELF, enhanced liver fibrosis test; FIB-4, fibrosis-4 index; LSM, liver stiffness measurement, as measured by vibration-controlled transient elastography. "Fibroscan" *In the absence of LSM, consider ELF a diagnostic alternative. If ELF ≥ 9.8, an individual is at high risk of MASH with advanced liver fibrosis (≥F3–F4) and should be referred to a liver specialist.

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Other Treatments for MASLD and MASH

- Meds that lower glucose, cholesterol and weight
- Bariatric surgery
- Pioglitazone (Actos)
  - Improves lipid and glucose metabolism
  - Reverses steatohepatitis in prediabetes/diabetes
  - Causes 1-2% wt gain at 15 mg
  - 3-5% wt gain at 45 mg
- GLP-1 Receptor Agonists

Support lifestyle changes

4. Comprehensive Medical Evaluation and Assessment of Comorbidities: Standards of Care in Diabetes—2025

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Actions To Decrease Steatosis

- Increase activity
  - Strength training
  - Yoga or Thai Chi
  - Walking & aerobics
- Thoughtful eating
  - More fiber
  - Less processed foods & less added sugar
  - Avoid alcohol
- Treatment
  - Actos
  - GLP-1
  - Statin
- Prevention
  - Cancer Screenings
  - Decrease inflammation

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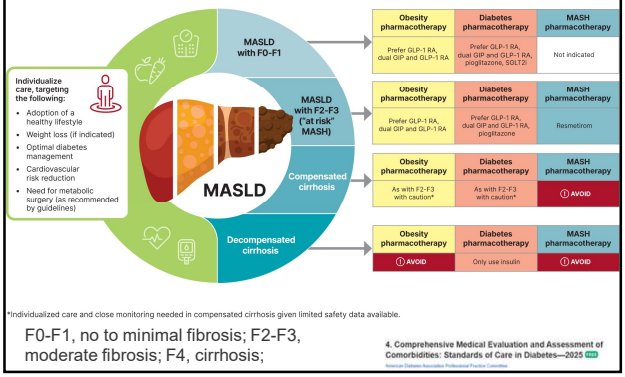
Metabolic Dysfunction–Associated Steatotic Liver Disease (MASLD) Treatment Algorithm



*Individualized care and close monitoring needed in compensated cirrhosis given limited safety data available.

F0-F1, no to minimal fibrosis; F2-F3, moderate fibrosis; F4, cirrhosis;

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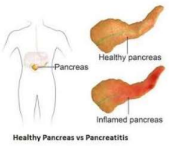
Pancreatitis

- People with diabetes 2xs risk of acute pancreatitis
- After episode of pancreatitis, one third of people will get prediabetes or diabetes
- Pancreatitis is an exocrine dysfunction:
  - Disrupts global architecture or physiology of pancreas
  - Results in both exocrine and endocrine dysfunction



Healthy Pancreas vs Pancreatitis

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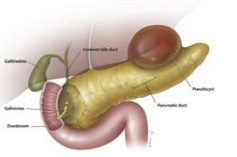
Pancreatitis

- Pancreatitis caused by digestion of the organ from pancreatic enzymes normally carried to the SI through pancreatic duct.
- Detected through elevated Amylase levels & pain
- Causes:
  - HIV meds and other meds
  - Alcohol ingestion
  - Gallstones blocking pancreatic enzyme flow to SI
  - Elevated triglycerides
  - Cancer, injury and other



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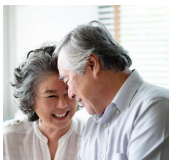
Cancer and Diabetes

- Diabetes is associated with increased risk of cancers of:
  - liver, pancreas, endometrium, colon and rectum, breast, and bladder.
- Association may result from shared risk factors between type 2 diabetes and cancer
  - Older age, obesity, and physical inactivity
  - May also be due to diabetes-related factors such as underlying disease physiology
  - Encourage people with diabetes to undergo recommended age-and sex-appropriate cancer screenings



4. Comprehensive Medical Evaluation and Assessment of Comorbidities: Standards of Care in Diabetes—2025

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The American Cancer Society's estimates for pancreatic cancer in U.S. for 2023 are:
• About 64,050 people will be diagnosed with pancreatic cancer.
• About 50,550 people will die of pancreatic cancer.
• Pancreatic cancer accounts for about 3% of all cancers in the US and about 7% of all cancer deaths.

https://pancan.org/

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Other Diabetes Co-Conditions to Be on the Lookout for

Let's Stretch

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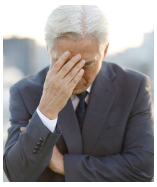
Cognitive Impairment

- Meta-analysis showed individuals with diabetes had
  - 43% higher risk of all types of dementia,
  - 43% higher risk of Alzheimer dementia
  - 91% higher risk of vascular dementia
  - compared with individuals without diabetes

- People with Alzheimer dementia are more likely to develop diabetes than people without Alzheimer dementia.



4. Comprehensive Medical Evaluation and Assessment of Comorbidities: Standards of Care in Diabetes—2025

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Assess Sexual Health

- In men with diabetes or prediabetes:
  - 52.5% in men with diabetes have ED.
  - Inquire about sexual health (e.g., low libido and erectile dysfunction [ED].
  - If symptoms and/or signs of hypogonadism are detected (e.g., low libido, ED, and depression), screen with a morning serum total testosterone level.
  - Best predictors of ED are age (>40 years), CVD, diabetes, hypertension, obesity, dyslipidemia, metabolic syndrome, hypogonadism, smoking, depression, and use of medications such as antidepressants and opioids.
  - ED is also a predicator of heart disease.
  - Assess, treat and refer

4. Comprehensive Medical Evaluation and Assessment of Comorbidities: Standards of Care in Diabetes—2025

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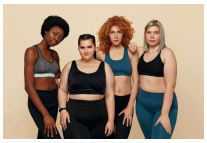
Assess Sexual Health

- In women with diabetes or prediabetes, assess sexual health:
- 33% reported female sexual dysfunction (FSD)
- Screen for desire (libido), arousal, orgasm difficulties, particularly in those with depression and/or anxiety and those with recurrent urinary tract infections.
- In postmenopausal women - screen for symptoms and/or signs of genitourinary syndrome of menopause, including vaginal dryness and dyspareunia.



4. Comprehensive Medical Evaluation and Assessment of Comorbidities: Standards of Care in Diabetes—2025

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JR Return Visit 1 Year – Big Strides

- A1c 6.6%
- LDL 104 (was 164), Trig 169
- B/P 128/76
- UACR < 30, GFR >60
- Liver enzymes below 30
- Saw dentist
- Exercising regularly

- Meds include:
  - Metformin 2000 mg
  - Empagliflozin 25 mg
  - Pioglitazone 15mg (for liver)
  - ~~Glipizide 20 mg BID~~
  - ~~Basal insulin 15 units~~
  - Lovastatin 40 mg (increase?)
  - Lisinopril 40 mg

- JR checks BG 7 -10 times a week.
  - Experiencing 2-3 lows a week
  - Lowest BG was 54
  - Highest 198

Decide to hold insulin and stop glipizide. If BG levels increase, add GLP-1 to plan. Return in 3 mo's

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DiaBingo - N

N DPP demonstrated that exercise and diet reduced risk of DM by__%

N Average A1c of 7% = Avg BG of ____

N The goal is to eat 14 gms per 1000 cals of this nutrient a day

N Rebound hyperglycemia

N Scare tactics are effective at motivating behavior change

N Get LDL less than ____for most people with diabetes 40 years+

N Drugs that can cause hyperglycemia

N 2/3 cups of rice equals _____ serving carbohydrate

N 1% A1c = how many points of blood sugar _____

N 1 gm of fat equal _____kilo/calories

N Metabolic syndrome = hyperinsulinemia, hyperlipidemia, hypertension

N Average American consumes 15 teaspoons of sugar a day.

N Medication derived from the saliva of the Gila Monster

143

Wait, What About Emotions?

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Self Reflective Question

- A individual is admitted and tells you they are only taking their daily insulin injection about 4 times a week.
- What feelings would that evoke?
  - Patient doesn't care
  - Non-compliant
  - Lazy
  - Better scare them
  - Exasperation
  - Other feeling

curiosity

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Language of Diabetes Education

Old Way	New Way
Control diabetes	Manage
Test BG	Check
Patient	Participant
Normal BG	BG in target range
Non-adherent, compliant	Focus on what they are accomplishing
Refuse	Decided, chose

American Diabetes Association, Diabetes Care
The Use of Language in Diabetes Care and Education, 2017

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Language of Diabetes Education

Old Way	New Way
Can't, shouldn't, don't, have to	Have you tried…" What about…" May I make a suggestion…"
Regimen	Plan, choices
Refused	Declined, Chose not to
Victim, suffer, stricken	..lives with diabetes …has diabetes

American Diabetes Association, Diabetes Care
The Use of Language in Diabetes Care and Education, 2017

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What does a collaborative practice look like?

CDCES,

Starts with the simple act of LISTENING.

148

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

There are no bad or good blood glucose numbers.
There is no cheating.
You are not failing at your diabetes.
It is not your fault you have diabetes.
Thank you for showing up today.

149

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.

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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?

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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.

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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

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Impact of Embark Trial

- The year I spent coaching study participants in the Embark Trial significantly changed my approach to diabetes self-management coaching.

~ Coach Beverly

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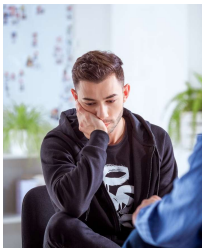
Embark Trial Takeaways

- Currently, diabetes education and management focuses on fostering self-management change.
  - This strategy assumes that people will become less distressed as they engage more effectively with their management.
- **Need a Shift - Make emotional considerations our priority.**
- The key to improving glycemic outcomes is to directly address the feelings, beliefs, and expectations that underlie diabetes distress and serve as barriers to management change.



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Embark Trial – Emotions as Priority

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

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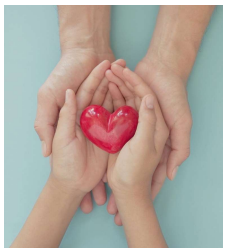
Trusting our Intuition

- As healthcare professionals, we tend to focus on problem-solving around lifestyle, medications, and glucose levels.
- The results of the Embark study confirm our intuition to prioritize addressing emotions to support individuals living with diabetes.
- **Let's reprioritize our checklist by assessing and addressing distress and move into the heart of providing effective diabetes care.**



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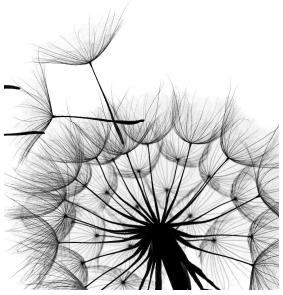
Releasing the Brake

- 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.



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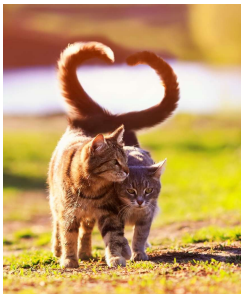
Embark Trial Takeaways

- **Better outcomes when using an integrated approach that combines an education and management with a diabetes distress emotion-centered approach.**
- **Creating a Judgment Free Zone**



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List of typical "Problem Causers."

Knowing the DD Story helps you anticipate the causes of BG problems

- Basal insulin dose or rates may need adjusting.
- Carb count accurate?
- Right meal carb ratio?
- Right correction bolus insulin?
- Timing of insulin dosing may need adjustment- insulin taken early or late.
- Type of food consumed affected glucose response (fats, protein, fiber).
- Effects of exercise and physical activity.
- 'Stacking' insulin boluses.
- Response to concerns about hypoglycemia.
- Stress: family, work, financial, etc.

161

FIVE M'S
FOR DIABETES SELF-MANAGEMENT

Based on 5 M Framework Tool by Funnell et al. www.DiabetesEd.net

162

Informed vs Wise Decisions

- Informed:
  - I know that tomatoes are a fruit.

- Wise
  - I know not to put tomatoes in my fruit salad.

163

Making the Wise Choice

- Wise choices consider and recognize the individual's values, preferences, needs, and wants.
- For example, if a person tells you, "I am going to cut out carbs to get my blood sugars under target," we would acknowledge that this might be an informed choice.
- "Yes, cutting out carbs will likely lower your blood sugars, but is it a "WISE" choice?"
- Does it match their values, preferences, needs, and wants? Or would cutting out carbs significantly decrease their life's pleasure and joy?

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Avoid and Lean Into

- **AVOID: Pressure, fix, or control.**
- We are careful to avoid forced solutions or controlling language. Our job is to help the person with diabetes find their own answers and solutions.
- **Let's stop "Shoulding" on people**.
- It's time to let go of terms like "You must, you should, you have to, it's better, it's important, do it for me" since they fall under the category of "controlling motivation"—which can be hurtful and lead to the individual becoming defensive or shutting down.
- **Ditch the scare tactics too!**

- Lean into - A person-centered approach energizes individuals to take the lead in managing their condition, in step with their providers and supporters.

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ReVive 5 Program – Fresh Perspective

- To help look at things differently.
- To gain a new perspective.
- To get out of a blood glucose rut.

With this new perspective, we partner with the person with diabetes, who is the expert in their lives, to figure out next steps.

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Thank You

- Questions?
- Email: info@diabetesed.net
- Web: www.diabetesed.net
- Phone 530-893-8635

Diabetes Education SERVICES

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