MCT2D Learning Community Event Series 2024
ADA Updates: What's New for 2024

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TEXT 71195 to 833-256-8390

(by 1:00 PM on March 15)

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Completion of this RD/DTR profession-specific or IPCE activity awards CPEUs (One IPCE credit = One CPEU).

If the activity is dietetics-related but not targeted to RDs or DTRs, CPEUs may be claimed which are commensurate with participation in contact hours (One 60 minute hour = 1 CPEU).

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- **Lauren Oshman, M.D. (Course Co-Director):** Stocks in publicly traded companies or stock options, excluding diversified mutual funds-Abbott, AbbVie, Johnson & Johnson, Merck & Co.

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ADA STANDARDS OF DIABETES CARE

– What's New in 2024?

Jonathan Gabison MD,
Dipl ABOM

Conflicts of Interest

Agenda

1. **Pharmacologic Approach to Glycemic Control**
2. Prevention of Complications
   - Blood Pressure
   - Lipids
3. Obesity and Weight Management
4. Positive Health Behaviors
5. Diabetes Technology
6. Improving Population Health

USE OF GLUCOSE-LOWERING MEDICATIONS IN THE MANAGEMENT OF TYPE 2 DIABETES

HEALTHY LIFESTYLE BEHAVIORS; DIABETES SELF-MANAGEMENT EDUCATION AND SUPPORT (DSMES); SOCIAL DETERMINANTS OF HEALTH (SDOH)

TO AVOID THERAPEUTIC INERTIA REASSESS AND MODIFY TREATMENT REGULARLY (3–6 MONTHS)

Goal: Cardiorenal Risk Reduction in High-Risk Individuals with Type 2 Diabetes (in addition to comprehensive CV risk management)*

+ASCVD†

Defined differently across CVOTs but all included individuals with established CVD (e.g., MI, stroke, any revascularization procedure). Variably included: conditions such as transient ischemic attack, unstable angina, amputation, symptomatic or asymptomatic coronary artery disease.

+Indicators of high risk

While definitions vary, most comprise ≥55 years of age with two or more additional risk factors (including obesity, hypertension, smoking, dyslipidemia, or albuminuria)

+ASCVD/Indicators of High Risk

GLP-1 RA# with proven CVD benefit **EITHER/OR** SGLT2i§ with proven CVD benefit

If A1C above target

- For patients on a GLP-1 RA, consider adding SGLT2i with proven CVD benefit or vice versa
- TZD^

+HF

Current or prior symptoms of HF with documented HFrEF or HFpEF

+HF

SGLT2i§ with proven HF benefit in this population

+CKD

eGFR <60 mL/min per 1.73 m^2 OR albuminuria (ACR ≥3.0 mg/mmol [30 mg/g]). These measurements may vary over time; thus, a repeat measure is required to document CKD.

+CKD (on maximally tolerated dose of ACEi/ARB)

PREFERABLY

SGLT2i§ with primary evidence of reducing CKD progression

Use SGLT2i in people with an eGFR ≥20 mL/min per 1.73 m^2; once initiated should be continued until initiation of dialysis or transplantation

OR

GLP-1 RA with proven CVD benefit if SGLT2i not tolerated or contraindicated

If A1C above target, for patients on SGLT2i, consider incorporating a GLP-1 RA or vice versa

If additional cardiorenal risk reduction or glycemic lowering needed

Goal: Achievement and Maintenance of Glycemic and Weight Management Goals

Glycemic Management: Choose approaches that provide the efficacy to achieve goals:

Metformin OR Agent(s) including COMBINATION therapy that provide adequate EFFICACY to achieve and maintain treatment goals

Prioritize avoidance of hypoglycemia in high-risk individuals

In general, higher efficacy approaches have greater likelihood of achieving glycemic goals

Efficacy for glucose lowering

Very High:
Dulaglutide (high dose), Semaglutide, Tirzepatide

Insulin

Combination Oral, Combination Injectable (GLP-1 RA/Insulin)

High:
GLP-1 RA (not listed above), Metformin, SGLT2i, Sulfonylurea, TZD

Intermediate:
DPP-4i

Achievement and Maintenance of Weight Management Goals:

Set individualized weight management goals

General lifestyle advice: medical nutrition therapy/eating patterns/ physical activity

Intensive evidence-based structured weight management program

Consider medication for weight loss

Consider metabolic surgery

When choosing glucose-lowering therapies:

Consider regimen with high-to-very-high dual glucose and weight efficacy

Efficacy for weight loss

Very High:
Semaglutide, Tirzepatide

High:
Dulaglutide, Liraglutide

Intermediate:
GLP-1 RA (not listed above), SGLT2i

Neutral:
DPP-4i, Metformin

If A1C above target

Identify barriers to goals:

- Consider DSMES referral to support self-efficacy in achievement of goals
- Consider technology (e.g., diagnostic CGM) to identify therapeutic gaps and tailor therapy
- Identify and address SDOH that impact achievement of goals

* In people with HF, CKD, established CVD, or multiple risk factors for CVD, the decision to use a GLP-1 RA or SGLT2i with proven benefit should be independent of background use of metformin; † A strong recommendation is warranted for people with CVD and a weaker recommendation for those with indicators of high CV risk. Moreover, a higher absolute risk reduction and thus lower numbers needed to treat are seen at higher levels of baseline risk and should be factored into the shared decision-making process. See text for details; ^ Low-dose TZD may be better tolerated and similarly effective; § For SGLT2i, CV/renal outcomes trials demonstrate their efficacy in reducing the risk of composite MACE, CV death, all-cause mortality, MI, HHF, and renal outcomes in individuals with T2D with established/high risk of CVD; # For GLP-1 RA, CVOTs demonstrate their efficacy in reducing composite MACE, CV death, all-cause mortality, MI, stroke, and renal endpoints in individuals with T2D with established/high risk of CVD.

	Efficacy[1]	Hypoglycemia	Weight change[2]	CV effects		Renal effects		Oral/SQ	Cost	Clinical considerations
				Effect on MACE	HF	Progression of DKD	Dosing/use considerations*			
Metformin	High	No	Neutral (potential for modest loss)	Potential benefit	Neutral	Neutral	• Contraindicated with eGFR <30 mL/min per 1.73 m^2	Oral	Low	• GI side effects common; to mitigate GI side effects, consider slow dose titration, extended release formulations, and administration with food • Potential for vitamin B12 deficiency; monitor at regular intervals
SGLT2 inhibitors	Intermediate to high	No	Loss (intermediate)	Benefit: canagliflozin, empagliflozin	Benefit: canagliflozin, dapagliflozin, empagliflozin, ertugliflozin	Benefit: canagliflozin, dapagliflozin, empagliflozin	• See labels for renal dose considerations of individual agents • Glucose-lowering effect is lower for SGLT2 inhibitors at lower eGFR	Oral	High	• DKA risk, rare in T2DM: discontinue, evaluate, and treat promptly if suspected; be aware of predisposing risk factors and clinical presentation (including euglycemic DKA); discontinue before scheduled surgery (e.g., 3–4 days), during critical illness, or during prolonged fasting to mitigate potential risk • Increased risk of genital mycotic infections • Necrotizing fasciitis of the perineum (Fournier gangrene), rare reports: institute prompt treatment if suspected • Attention to volume status, blood pressure; adjust other volume-contracting agents as applicable
GLP-1 RAs	High to very high	No	Loss (intermediate to very high)	Benefit: dulaglutide, liraglutide, semaglutide (SQ) Neutral: exenatide once weekly, lixisenatide	Neutral	Benefit for renal endpoints in CVOTs, driven by albuminuria outcomes: dulaglutide, liraglutide, semaglutide (SQ)	• See labels for renal dose considerations of individual agents • No dose adjustment for dulaglutide, liraglutide, semaglutide • Monitor renal function when initiating or escalating doses in patients with renal impairment reporting severe adverse GI reactions	SQ; oral (semaglutide)	High	• Risk of thyroid C-cell tumors in rodents; human relevance not determined (liraglutide, dulaglutide, exenatide extended release, semaglutide) • Counsel patients on potential for GI side effects and their typically temporary nature; provide guidance on dietary modifications to mitigate GI side effects (reduction in meal size, mindful eating practices [e.g., stop eating once full], decreasing intake of high-fat or spicy food); consider slower dose titration for patients experiencing GI challenges • Counsel patients about potential for ileus (semaglutide SQ) • Pancreatitis has been reported in clinical trials but causality has not been established. Discontinue if pancreatitis is suspected • Evaluate for gallbladder disease if cholelithiasis or cholecystitis is suspected
Dual GIP and GLP-1 RA	Very high	No	Loss (very high)	Under investigation	Under investigation	Under investigation	• See label for renal dose considerations • No dose adjustment • Monitor renal function when initiating or escalating doses in patients with renal impairment reporting severe adverse GI reactions	SQ	High	• Risk of thyroid C-cell tumors in rodents; human relevance not determined • Counsel patients on potential for GI side effects and their typically temporary nature; provide guidance on dietary modifications to mitigate GI side effects (reduction in meal size, mindful eating practices [e.g., stop eating once full], decreasing intake of high-fat or spicy food); consider slower dose titration for patients experiencing GI challenges • Not recommended for individuals with history of gastroparesis • Pancreatitis has been reported in clinical trials but causality has not been established. Discontinue if pancreatitis is suspected • Evaluate for gallbladder disease if cholelithiasis or cholecystitis is suspected
DPP-4 inhibitors	Intermediate	No	Neutral	Neutral	Neutral (potential risk, saxagliptin)	Neutral	• Renal dose adjustment required (sitagliptin, saxagliptin, alogliptin); can be used in renal impairment • No dose adjustment required for linagliptin	Oral	High	• Pancreatitis has been reported in clinical trials but causality has not been established. Discontinue if pancreatitis is suspected • Joint pain • Bullous pemphigoid (postmarketing): discontinue if suspected
Thiazolidinediones	High	No	Gain	Potential benefit: pioglitazone	Increased risk	Neutral	• No dose adjustment required • Generally not recommended in renal impairment due to potential for fluid retention	Oral	Low	• Congestive HF (pioglitazone, rosiglitazone) • Fluid retention (edema; heart failure) • Benefit in NASH • Risk of bone fractures • Weight gain: consider lower doses to mitigate weight gain and edema
Sulfonylureas (2nd generation)	High	Yes	Gain	Neutral	Neutral	Neutral	• Glyburide: generally not recommended in chronic kidney disease • Glipizide and glimepiride: initiate conservatively to avoid hypoglycemia	Oral	Low	• FDA Special Warning on increased risk of CV mortality based on studies of an older sulfonylurea (tolbutamide); glimepiride shown to be CV safe (see text) • Use with caution in persons at risk for hypoglycemia
Insulin **Human**	High to very high	Yes	Gain	Neutral	Neutral	Neutral	• Lower insulin doses required with a decrease in eGFR; titrate per clinical response	SQ; inhaled	Low (SQ)	• Injection site reactions • Higher risk of hypoglycemia with human insulin (NPH or premixed formulations) vs. analogs
Analogs								SQ	High	

Updates to GLP-1 RAs

- 9.21 In adults with T2D and advanced CKD (eGFR < 30) a GLP-1 RA is preferred for glycemic management due to lower risk of hypoglycemia and for cardiovascular risk reduction (B)
- Counsel patients about potential for ileus

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Updates to GIP/GLP-1 dual agonist

- Manufacturer specifically states Tirzepatide has “not been studied in patients with severe gastrointestinal disease, including severe gastroparesis, and are therefore not recommended in these patients”

Open Letter Regarding the Use of Mounjaro® (tirzepatide) and Zepbound™ (tirzepatide)

January 4, 2024

Dual GIP and GLP-1 RA	Very high	No	Loss (very high)	Under investigation	Under investigation	Under investigation	• See label for renal dose considerations • No dose adjustment • Monitor renal function when initiating or escalating doses in patients with renal impairment reporting severe adverse GI reactions	SQ	High	• Risk of thyroid C-cell tumors in rodents; human relevance not determined • Counsel patients on potential for GI side effects and their typically temporary nature; provide guidance on dietary modifications to mitigate GI side effects (reduction in meal size, mindful eating practices [e.g., stop eating once full], decreasing intake of high-fat or spicy food); consider slower dose titration for patients experiencing GI challenges • Not recommended for individuals with history of gastroparesis • Pancreatitis has been reported in clinical trials but causality has not been established. Discontinue if pancreatitis is suspected • Evaluate for gallbladder disease if cholelithiasis or cholecystitis is suspected

Case 1: JM (2023)

- 56 yo M with HTN, HLD and T2D diagnosed 24 years ago
- VS: 120/80, HR 77, BMI 41
- Labs: A1c 7.9%, LDL-C 107, eGFR 63, UACR 15 (nml)
- Current Medications: Metformin 1000 mg BID, Sitagliptin 100 mg QD, Glyburide 2 mg BID, Atorvastatin 10 mg QHS, Amlodipine 10 mg QD

Changes:

1. Stopped Sitagliptin and Glyburide
2. Started Semaglutide SQ and Empagliflozin after engaging in shared decision making because of cardiovascular risk and weight management goals
3. No blood pressure medication changes because his BP was well-controlled during this visit
4. LDL-C was above goal (< 70) so atorvastatin increased to 40 mg

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Indicators of high risk

While definitions vary, most comprise ≥55 years of age with two or more additional risk factors (including obesity, hypertension, smoking, dyslipidemia, or albuminuria)

+HF

Current or prior symptoms of HF with documented HFrEF or HFpEF

+CKD

eGFR <60 mL/min per 1.73 m^2 OR albuminuria (ACR ≥3.0 mg/mmol [30 mg/g]). These measurements may vary over time; thus, a repeat measure is required to document CKD.

+ASCVD/Indicators of High Risk

GLP-1 RA# with proven CVD benefit **EITHER/OR** SGLT2i§ with proven CVD benefit

If A1C above target

- For patients on a GLP-1 RA, consider adding SGLT2i with proven CVD benefit or vice versa
- TZD^

+HF

SGLT2i§ with proven HF benefit in this population

+CKD (on maximally tolerated dose of ACEi/ARB)

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Very High:
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Insulin

Combination Oral, Combination Injectable (GLP-1 RA/Insulin)

High:
GLP-1 RA (not listed above), Metformin, SGLT2i, Sulfonylurea, TZD

Intermediate:
DPP-4i

Achievement and Maintenance of Weight Management Goals:

Set individualized weight management goals

- General lifestyle advice: medical nutrition therapy/eating patterns/physical activity
- Intensive evidence-based structured weight management program
- Consider medication for weight loss
- Consider metabolic surgery

When choosing glucose-lowering therapies:

Consider regimen with high-to-very-high dual glucose and weight efficacy

Efficacy for weight loss

Very High:
Semaglutide, Tirzepatide

High:
Dulaglutide, Liraglutide

Intermediate:
GLP-1 RA (not listed above), SGLT2i

Neutral:
DPP-4i, Metformin

If A1C above target

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* In people with HF, CKD, established CVD, or multiple risk factors for CVD, the decision to use a GLP-1 RA or SGLT2i with proven benefit should be independent of background use of metformin; † A strong recommendation is warranted for people with CVD and a weaker recommendation for those with indicators of high CV risk. Moreover, a higher absolute risk reduction and thus lower numbers needed to treat are seen at higher levels of baseline risk and should be factored into the shared decision-making process. See text for details; ^ Low-dose TZD may be better tolerated and similarly effective; § For SGLT2i, CV/renal outcomes trials demonstrate their efficacy in reducing the risk of composite MACE, CV death, all-cause mortality, MI, HHF, and renal outcomes in individuals with T2D with established/high risk of CVD; # For GLP-1 RA, CVOTs demonstrate their efficacy in reducing composite MACE, CV death, all-cause mortality, MI, stroke, and renal endpoints in individuals with T2D with established/high risk of CVD.

Case 1: JM (early 2024)

- 56 yo M with pmh of HTN, HLD for follow-up diabetes
- VS: 139/85, HR 77, BMI 36
- Labs: A1c – 7.3%, LDL-C - 155, eGFR: 55
- UACR: 35
- Current Medications: Metformin 1000 mg BID, Semaglutide SQ 2.0 mg, Empagliflozin 25 mg daily, Atorvastatin **80** mg, Amlodipine 10 mg

UPDATES: After increasing atorvastatin he noticed muscle aches; you stopped atorvastatin, myalgia resolved but then recurred on low dose pravastatin.

Updates in Complication Prevention: Blood Pressure

- 10.7: On-treatment target blood pressure goal is < 130/80 if it can be safely attained (A)
- 10.6: Lifestyle Approaches: DASH – including reducing sodium and increasing potassium intake, moderation of alcohol, smoking cessation, and increased physical activity (A)
- 10.11: Medications: Should include ACEi or ARB as first line for individuals with hypertension in diabetes and CVD in nonpregnant people with moderately increased albuminuria (UACR > 300 mg/g (A), UACR 30-300 mg/g creatinine (B) and/or eGFR < 60) to prevent progression of kidney disease and reduce CV events **(A)**

UPDATE: 10.12: Check serum creatinine and potassium 7-14 days after adding ACEi or ARB, mineralocorticoid receptor agonist (MRA), or diuretic

Lipid Management for JM

Step 1: Alternative Statin therapy

High-intensity statin therapy (lowers LDL cholesterol by ≥50%)	**Moderate-intensity statin therapy (lowers LDL cholesterol by 30–49%)**
Atorvastatin 40–80 mg	Atorvastatin 10–20 mg
Rosuvastatin 20–40 mg	Rosuvastatin 5–10 mg
	Simvastatin 20–40 mg
	Pravastatin 40–80 mg
	Lovastatin 40 mg
	Fluvastatin XL 80 mg
	Pitavastatin 1–4 mg

Updates in Complication Prevention: Lipids

Lipid Goals: 10.20 High intensity statin therapy to reduce LDL-C 50% of baseline with goal LDL-C < 70. (A)

10.21 Adding Ezetimibe or PCSK9 inhibitor for high-risk individuals if not < 70 (B)

UPDATE: In people with diabetes intolerant to statin therapy, treatment with bempedoic acid (Nexletol) is recommended to reduce cardiovascular event rates as an alternative cholesterol lowering agent (A)

Lipid Management: Bempedoic Acid

- Pooled analysis demonstrates that bempedoic acid therapy lowers LDL cholesterol levels by about 23% compared with placebo
- Among statin-intolerant patients,
  - Composite MACE (CV death, nonfatal MI, nonfatal stroke, or coronary revascularization) 13.3% v. 11.7% (HR 0.87, 95% CI 0.79-0.96)
  - Consider serum uric acid measurement in gout prior to initiation
  - Caution with generalizability to lower starting LDL levels

Nissen SE, Menon V, Nicholls SJ, Brennan D, Laffin L, Ridker P, Ray KK, Mason D, Kastelein JJP, Cho L, Libby P, Li N, Foody J, Louie MJ, Lincoff AM. Bempedoic Acid for Primary Prevention of Cardiovascular Events in Statin-Intolerant Patients. JAMA. 2023 Jul 11;330(2):131-140. doi: 10.1001/jama.2023.9696. PMID: 37354546; PMCID: PMC10336623.

Lipid Management: Bempedoic Acid

Dosing: 180 mg daily

Formulation: Bempedoic Acid-ezetimibe (Nexlizet 180-10) or Bempedoic Acid (Nexleteol)

MOA: Reduces cholesterol synthesis in the liver by down regulation of ATP-citrate lyase and upregulation of AMP-activated protein kinase (AMPK). Not associated with unwanted muscle effects.

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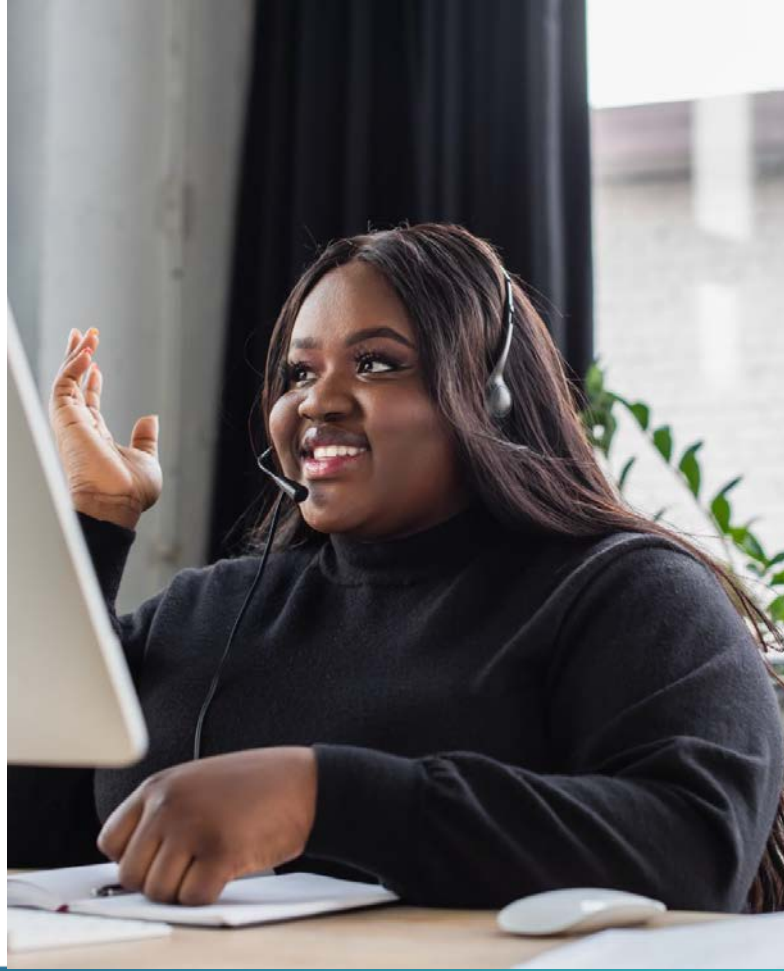
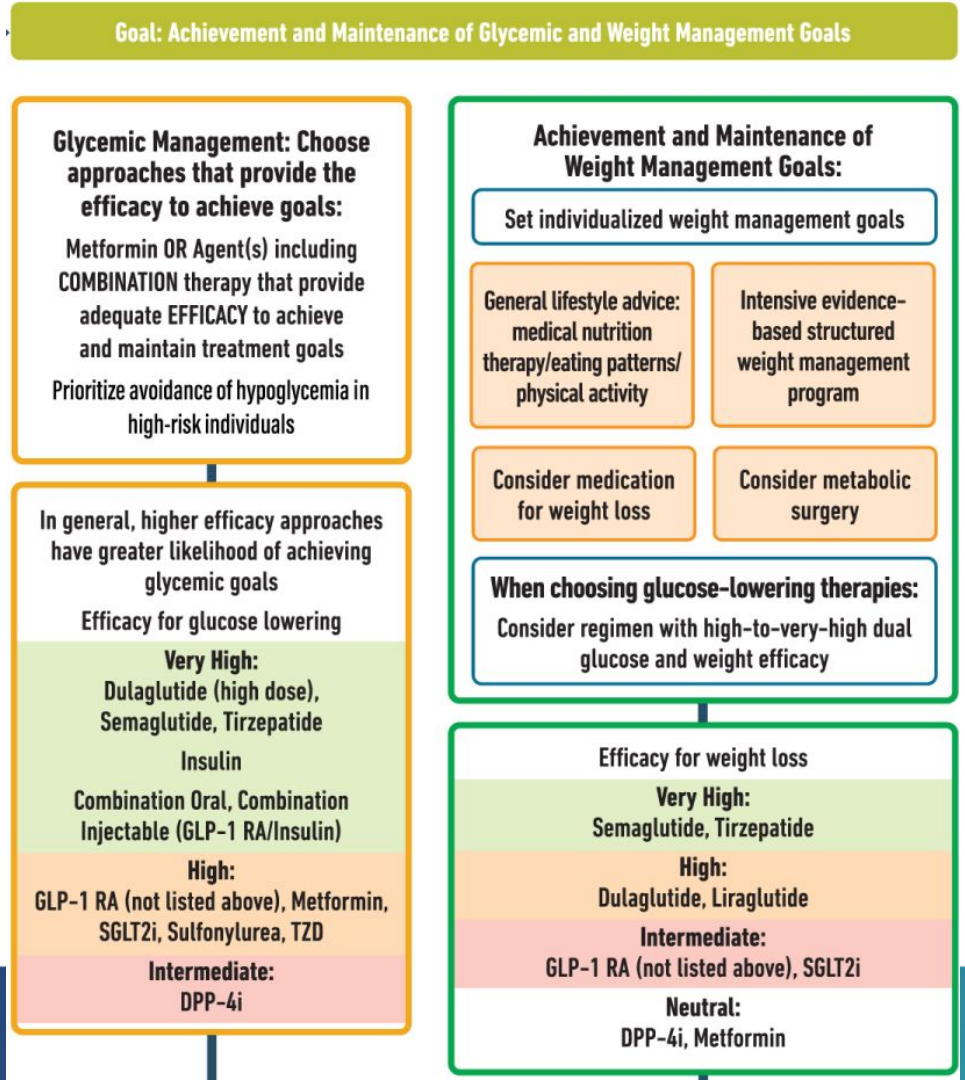
Case 2: LK

- 33yo F with past medical history of recently diagnosed T2D, **BMI 37**, PCOS presents to discuss new diagnosis of T2D
- VS: BP 125/75
- Labs: A1c 6.9%, LDL-C 131, HDL 38, ALT 71, AST 39, eGFR > 100
- No history of smoking, alcohol use
- Not currently taking any medications

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Neutral:
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Updates in Obesity and Weight Management

Importance of what **language we use** and **how we approach our patients**

8.1 Use person-centered, nonjudgmental language that fosters collaboration between individuals and health care professionals, including person-first language (e.g., "person with obesity" rather than "obese person" and "person with diabetes" rather than "diabetic person"). **E**

American Diabetes Association Professional Practice Committee; 8. Obesity and Weight Management for the Prevention and Treatment of Type 2 Diabetes: *Standards of Care in Diabetes–2024*. *Diabetes Care* 1 January 2024; 47 (Supplement_1): S145–S157. https://doi.org/10.2337/dc24-S008

Consequences of Stigma and Bias

Weight stigma has been shown to increase eating, decrease self-regulation, increase resistance to exercise, and raise cortisol levels.

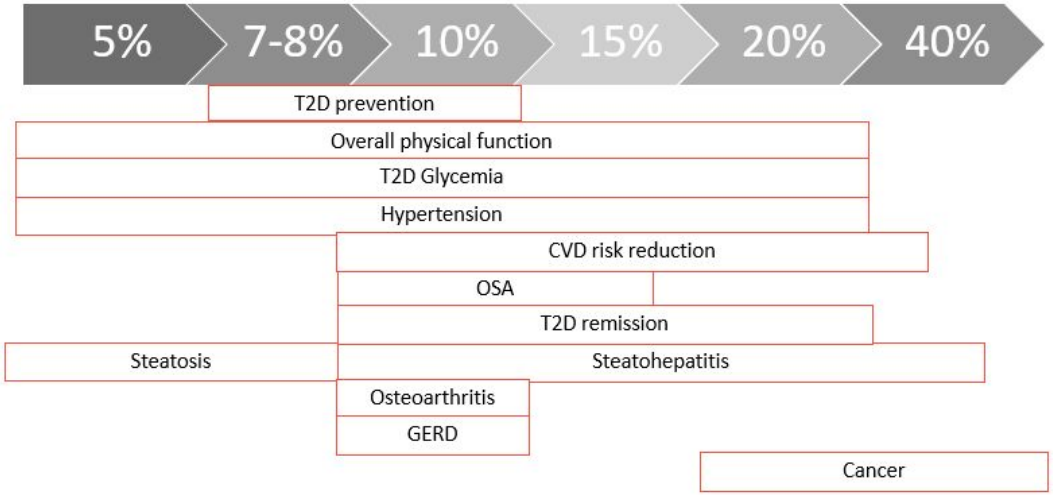
Provider's negative attitudes towards patients with obesity may result in

1. Avoidance of medical care
2. Mistrust of medical care provider
3. Decreased adherence to recommendations
4. Poor communication between patient and provider

"Believing that obesity is caused by factors outside a person's control was positively correlated with proficiency in obesity counseling skills"

Hollman BMC Medical Education (2019) 19:16
Puhl, et al Obesity (Silver Spring). 2014
Phelan et al. Obes Rev. 2015
Fang V et al BMC Obes. 2019

Treatment Goals



Adapted from AACE Guidelines for Obesity

Weight Loss Goals

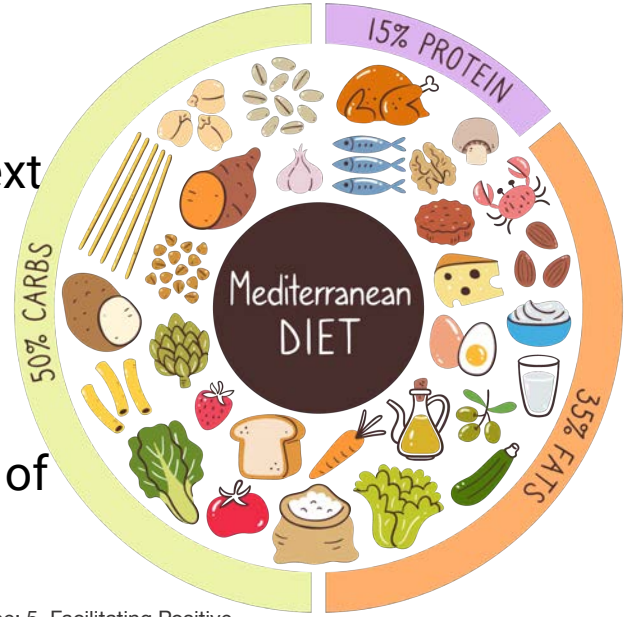
- 3-7% Improves glycemia and CV risk factors
- >10% sustained has a disease modifying effect, including remission, and improves long-term cardiovascular outcomes and mortality

Emphasis on **INDIVIDUAL** treatment approach with considerations to medical history, life circumstances, preferences and motivations

Nutrition Management Updates

- "No one-size-fits-all eating pattern for individuals with diabetes, and meal planning should be individualized" with emphasis to include healthy fats within the context of "Mediterranean style of Eating"

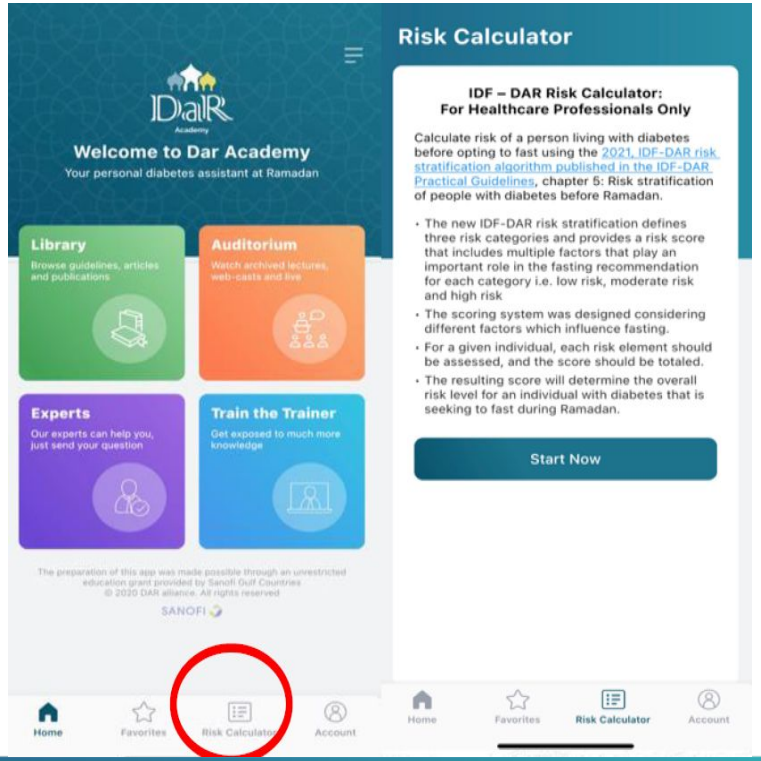
- Chrononutrition: Preliminary studies show cardiometabolic benefits when food is consumed earlier, and similarly shift workers have increased risk of type 2 diabetes



American Diabetes Association Professional Practice Committee; 5. Facilitating Positive Health Behaviors and Well-being to Improve Health Outcomes: *Standards of Care in Diabetes—2024*. *Diabetes Care* 1 January 2024; 47 (Supplement_1): S77–S110. https://doi.org/10.2337/dc24-S005

Nutrition Updates: Religious Fasting

- Health care professionals should inquire about any religious fasting for people with diabetes and provide education and support to accommodate their choice



Obesity Medication Treatment Updates

- 8.17: GLP-1 RA (Semaglutide) and GIP /GLP1-RA (Tirzepatide) are the PREFERRED pharmacotherapy treatments for people with obesity

- Multiple modalities including nutritional and behavioral intervention, **metabolic surgery**, and anti-obesity medications can all be helpful

American Diabetes Association Professional Practice Committee; 8. Obesity and Weight Management for the Prevention and Treatment of Type 2 Diabetes: *Standards of Care in Diabetes–2024*. *Diabetes Care* 1 January 2024; 47 (Supplement_1): S145–S157. https://doi.org/10.2337/dc24-S008

Metabolic Surgery Updates

- “Metabolic Surgery” to help prevent and address therapeutic inertia pertaining to weight management goals in people with obesity and T2D
- Mounting long-term evidence in those with T2D and Obesity (8.19)
- Importance of monitoring weight loss progress of individuals who have undergone metabolic surgery (8.25)
    - In the case of inadequate progress, potential barriers and additional weight loss interventions should be considered

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Case 3: LA

- 49M T2D, CKD4, BMI > 40 with history of kidney transplant, chronic pain with recent vertebral fracture presents for T2D follow up
- Medications: Insulin Glargine BID 42 units, Semaglutide SQ 2.0 mg weekly, atorvastatin 80 mg
- A1c 8.0% 6 months ago 12.5%

“Doc I am just tired of these medications, I am in pain all the time. I am exhausted”

Facilitating Positive Health Behaviors: Psychosocial Care

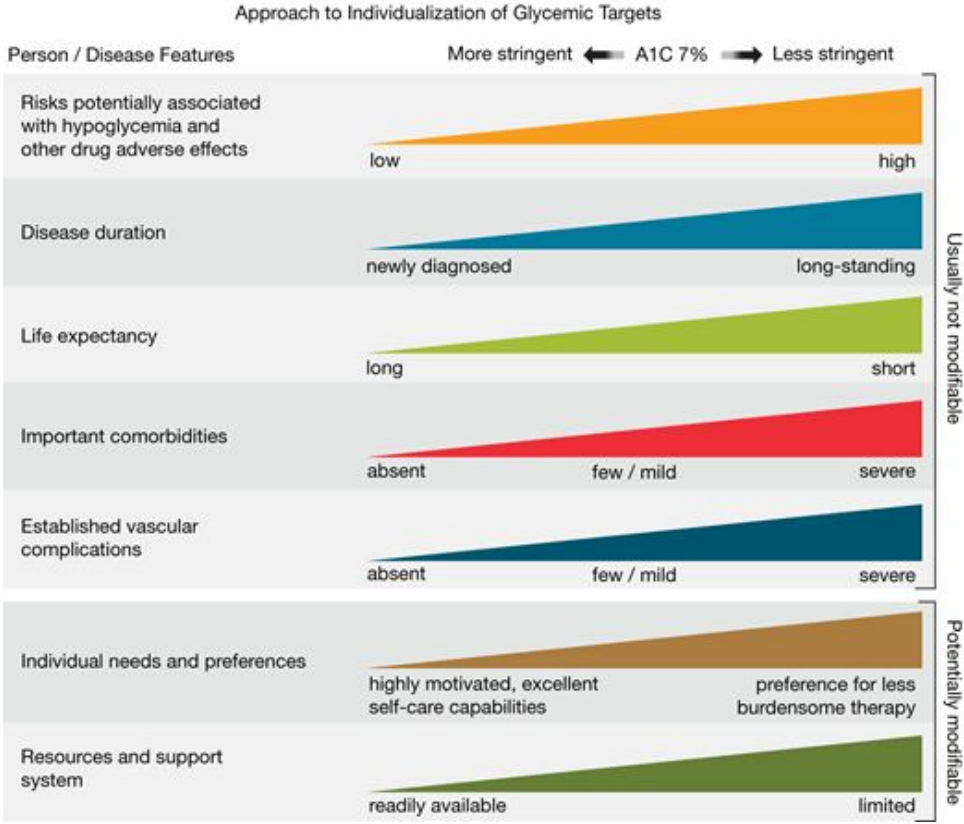
- Annual screening for diabetes distress for individuals with diabetes and their caregivers
- Annual depression screening (more frequently if known history)

Psychosocial Interventions significantly improved A1c and behavioral health outcomes!

Harkness E, Macdonald W, Valderas J, Coventry P, Gask L, Bower P. Identifying psychosocial interventions that improve both physical and mental health in patients with diabetes: a systematic review and meta-analysis. Diabetes Care. 2010 Apr;33(4):926-30. doi: 10.2337/dc09-1519. PMID: 20351228; PMCID: PMC2845054.

Individualized Care

- Routinely assess all people with DM for financial challenges (9.28)
- Patient preferences
- Annual assessment of diabetes distress
- CGM goals for older adults



Phase of living with diabetes		Continuum of psychosocial issues and behavioral health disorders in people with diabetes	
		Nonclinical (normative) symptoms/behaviors	Clinical symptoms/diagnosis
	Behavioral health disorder prior to diabetes diagnosis	None	• Mood and anxiety disorders • Psychotic disorders • Intellectual disabilities
	Diabetes diagnosis	Normal course of adjustment reactions, including distress, fear, grief, anger, initial changes in activities, conduct, or personality	• Adjustment disorders*
	Learning diabetes self-management	Issues of autonomy, independence, and empowerment. Initial challenges with self-management demonstrate improvement with further training and support	• Adjustment disorders* • Psychological factors affecting medical condition**
	Maintenance of self-management and coping skills	Periods of waning self-management behaviors, responsive to booster educational or supportive interventions	• Maladaptive eating behaviors • Psychological factors** affecting medical condition
	Life transitions impacting disease self-management	Distress and/or changes in self-management during times of life transition***	• Adjustment disorders* • Psychological factors ** affecting medical condition
	Disease progression and onset of complications	Distress, coping difficulties with progression of diabetes/onset of diabetes complications impacting function, quality of life, sense of self, roles, interpersonal relationships	• Adjustment disorders* • Psychological factors ** affecting medical condition
	Aging and its impact on disease and self-management	Normal, age-related forgetfulness, slowed information processing and physical skills potentially impacting diabetes self-management and coping	• Mild cognitive impairment • Alzheimer or vascular dementia
		All health care team members (e.g., physicians, nurses, diabetes educators, dieticians) as well as behavioral providers	Behavioral or mental health providers (e.g., psychologists, psychiatrists, clinical social workers, certified counselors or therapists)
		Providers for psychosocial and behavioral health intervention	

Deborah Young-Hyman, Mary de Groot, Felicia Hill-Briggs, Jeffrey S. Gonzalez, Korey Hood, Mark Peyrot; Psychosocial Care for People With Diabetes: A Position Statement of the American Diabetes Association. *Diabetes Care* 1 December 2016; 39 (12): 2126–2140.

After further investigation…

- LA is tired of frequent finger pokes
- He is worried about hypoglycemia events

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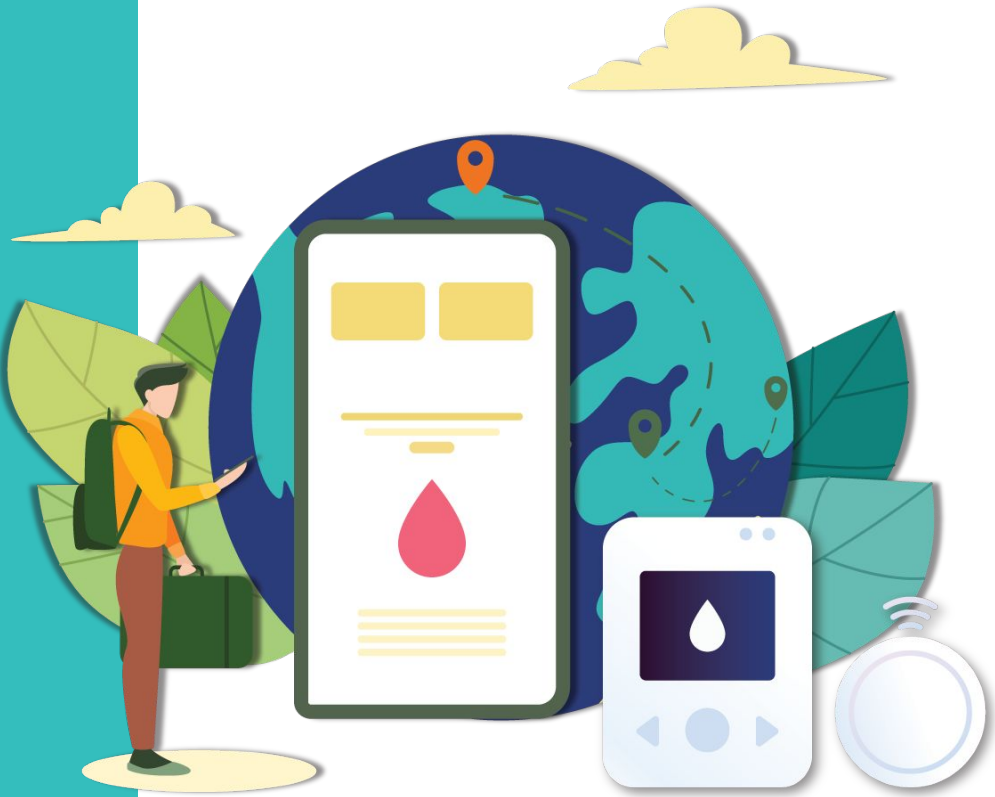

Diabetes Technology: CGM

- 7.1 Diabetes devices should be offered to people with diabetes. **A**
- 7.14 Real-time CGM (rtCGM) **A** or intermittently scanned CGM (isCGM) **B** should be offered for diabetes management in adults with diabetes on **multiple daily injections** (MDI) or CSII who are capable of using the devices safely.
- 7.15 rtCGM **A** or isCGM **B** should be offered for diabetes management in adults with diabetes on basal insulin who are capable of using the devices.
- " In addition, rtCGM benefits were reported in a mixed population (including people not using insulin) of adults with type 2 diabetes with reduction in A1C levels, increase in TIR, and reduction of time in hyperglycemia."

Grace T, Salyer J. Use of real-time continuous glucose monitoring improves glycemic control and other clinical outcomes in type 2 diabetes patients treated with less intensive therapy. *Diabetes Technol Ther* 2022;24:26–31

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Heart Failure - Screening

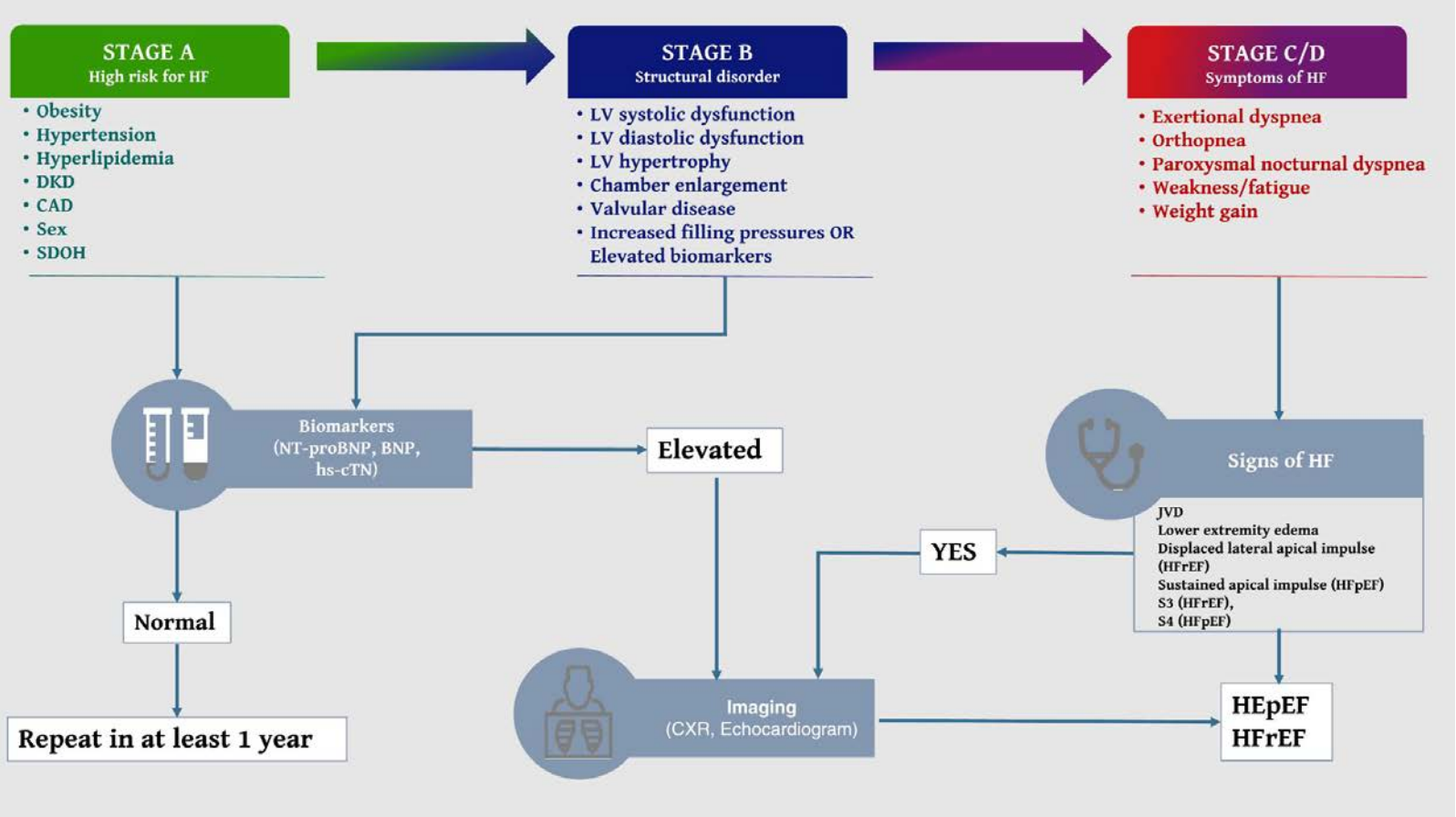
- **ADA recommends to consider screening for people with diabetes (t1 and t2) for heart failure with a b-natriuretic peptide**

WHY?

- All people with diabetes (t1 and t2) increased risk of developing heart failure, 2-4x more likely in those with diabetes[1]
- Heart failure (HF) has been recognized as a common complication of diabetes with a prevalence of up to 22% in individuals with diabetes and increasing incidence rates[2]

[1]Rodica Pop-Busui, James L. Januzzi, Dennis Bruemmer, Sonia Butalia, Jennifer B. Green, William B. Horton, Colette Knight, Moshe Levi, Neda Rasouli, Caroline R. Richardson; Heart Failure: An Underappreciated Complication of Diabetes. A Consensus Report of the American Diabetes Association. *Diabetes Care* 7 July 2022; 45 (7): 1670–1690. https://doi-org.proxy.lib.umich.edu/10.2337/dci22-0014

[2]Birkeland KI, Bodegard J, Eriksson JW, Norhammar A, Haller H, Linssen GCM, Banerjee A, Thuresson M, Okami S, Garal-Pantaler E, Overbeek J, Mamza JB, Zhang R, Yajima T, Komuro I, Kadowaki T. Heart failure and chronic kidney disease manifestation and mortality risk associations in type 2 diabetes: A large multinational cohort study. Diabetes Obes Metab. 2020 Sep;22(9):1607-1618. doi: 10.1111/dom.14074. Epub 2020 Jun 3. PMID: 32363737; PMCID: PMC7496468.



Pop-Busui R, Januzzi JL, Bruemmer D, Butalia S, Green JB, Horton WB, Knight C, Levi M, Rasouli N, Richardson CR. Heart Failure: An Underappreciated Complication of Diabetes. A Consensus Report of the American Diabetes Association. Diabetes Care. 2022 Jul 7;45(7):1670-1690. doi: 10.2337/dci22-0014. PMID: 35796765; PMCID: PMC9726978.

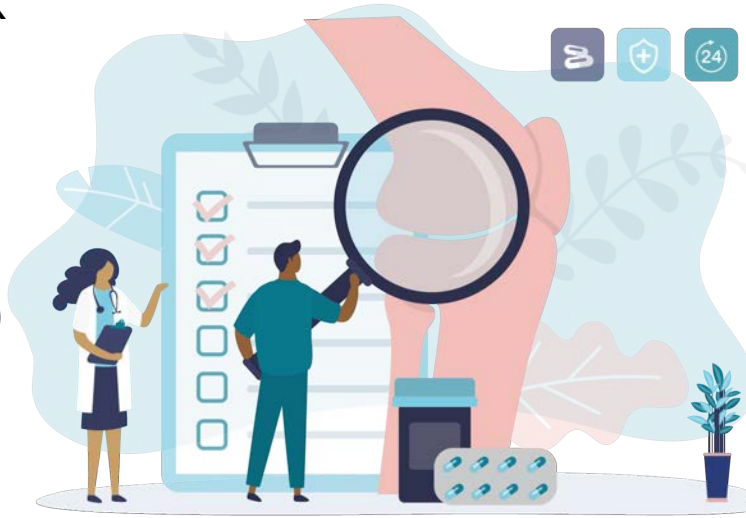
HF – Value of Early Detection

- Initiation of SGLT2i is recommended to reduce progression, reduce HF hospitalizations, and cardiovascular death.

10.45b	In individuals with diabetes and asymptomatic stage B heart failure, ACE inhibitors/ARBs and b-blockers are recommended to reduce the risk for progression to symptomatic (stage C) heart failure. **A**
10.45c	In individuals with type 2 diabetes and asymptomatic stage B heart failure or with high risk of or heart failure or with high risk of or established cardiovascular disease, treatment with an SGLT inhibitor (including SGLT2 or SGLT1/2 inhibitors) is recommended to reduce the risk of hospitalization for heart failure. **A**

Bone Health

- 1.79x risk of hip fracture, 8% increase fracture risk per 1% rise in A1c
- Individuals with diabetes on TZDs, insulin, sulfonylureas have increased fracture risk
- Metformin, GLP-1 RA, DPP4i, while tirzepatide is thought to have benefit (but not enough evidence)
- Canagliflozin with increased fracture risk in one study (CANVAS) and neutral in another study
- Use of insulin double the risk of hip fractures



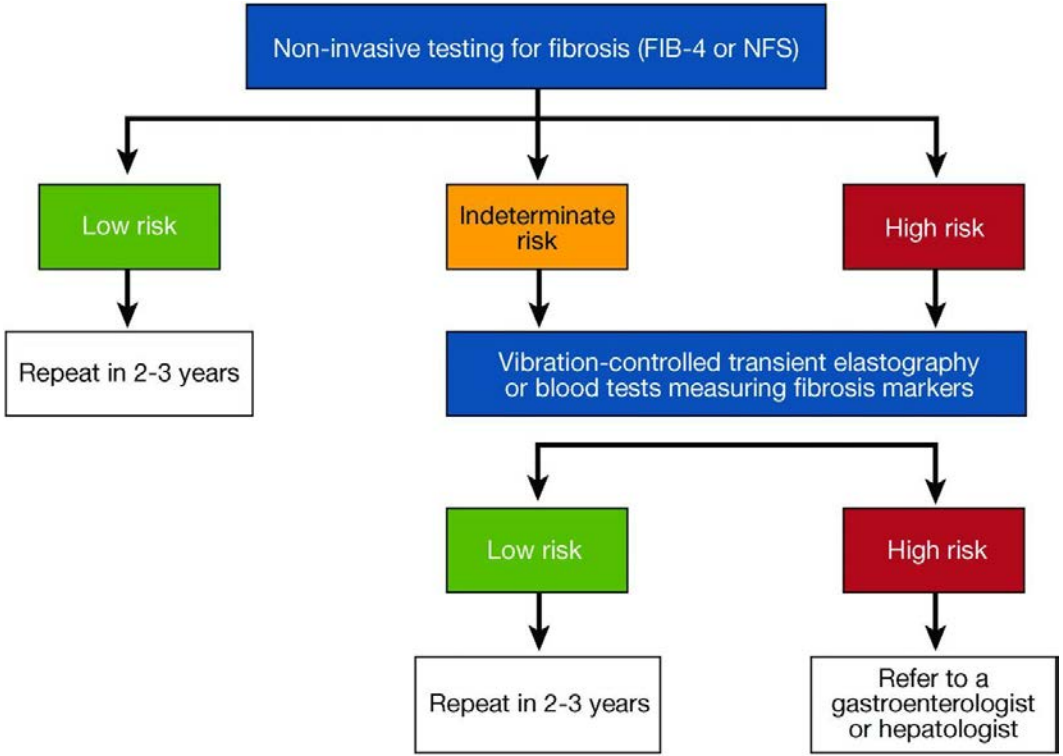
Recommendations on Bone Health

- 4.9 Monitor bone density of those > 65 adults with diabetes and younger individuals with diabetes and multiple risk factors every 2-3 years (A)
- Prioritize diabetes treatment with medications with neutral profile
  - Metformin, GLPs, DPP4, Tirzepatide, empagliflozin/dapagliflozin over ones with fracture risk like TZDs, insulin, SU, canagliflozin)
- 4.14 Antiresorptive medications and osteoanabolic agents should be considered for people with diabetes who have low bone mineral density with a T-score ≤−2.0 or have experienced fragility fractures.

American Diabetes Association Professional Practice Committee; 4. Comprehensive Medical Evaluation and Assessment of Comorbidities: *Standards of Care in Diabetes—2024*. *Diabetes Care* 1 January 2024; 47 (Supplement_1): S52–S76. https://doi.org/10.2337/dc24-S004

Liver Disease (NAFLD = MASLD)

- Metabolic Associated Steatotic Liver Disease
- Screening for liver fibrosis with FIB 4 (age, ALT, AST, and Platelets) even if normal liver enzymes (B)
- If FIB 4 indeterminate should be further risk stratified by liver stiffness measurement (B)



Fasiha Kanwal, Jay H. Shubrook, Zobair Younossi, Yamini Natarajan, Elisabetta Bugianesi, Mary E. Rinella, Stephen A. Harrison, Christos Mantzoros, Kim Pfotenhauer, Samuel Klein, Robert H. Eckel, Davida Kruger, Hashem El-Serag, Kenneth Cusi; Preparing for the NASH Epidemic: A Call to Action. *Diabetes Care* 1 September 2021; 44 (9): 2162–2172.

Questions?