DREAM TEAM
TOURO UNIVERSITY
CALIFORNIA

The Patient With Newly Diagnosed Diabetes: What Now?

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Disclosures

No relevant commercial disclosures

No compensation volunteer for:

- Primary Care Advisory board to the American Diabetes Association
- *Clinical Diabetes* Editorial Board

Learning Objectives

At the conclusion of this session, participants should be able to:

- Prescribe pharmacological treatment for patients with type 2 diabetes mellitus
- Implement psychosocial interventions for patients with newly diagnosed type 2 diabetes mellitus.
- Recommend diabetes self-management and education for diabetes self-care

I am not a

DIABETIC

Routine screening, A1c = 7.4%.... Now what?

Visit1: Comprehensive Medical Eval

- Confirm your diagnosis + perform a physical exam
- Evaluate for complications and comorbidities
- Review risk factors for developing DM
- Immunizations
- Physical activity assessment
- Smoking cessation
- Survival skills
- Referral for
  - comprehensive eye exam at time of diagnosis
  - Diabetes self-management education (DSME)
  - Medical nutrition therapy
- Check for diabetic peripheral neuropathy at diagnosis and at least yearly

Dia-BEAT-it ABCDEFG Checklist

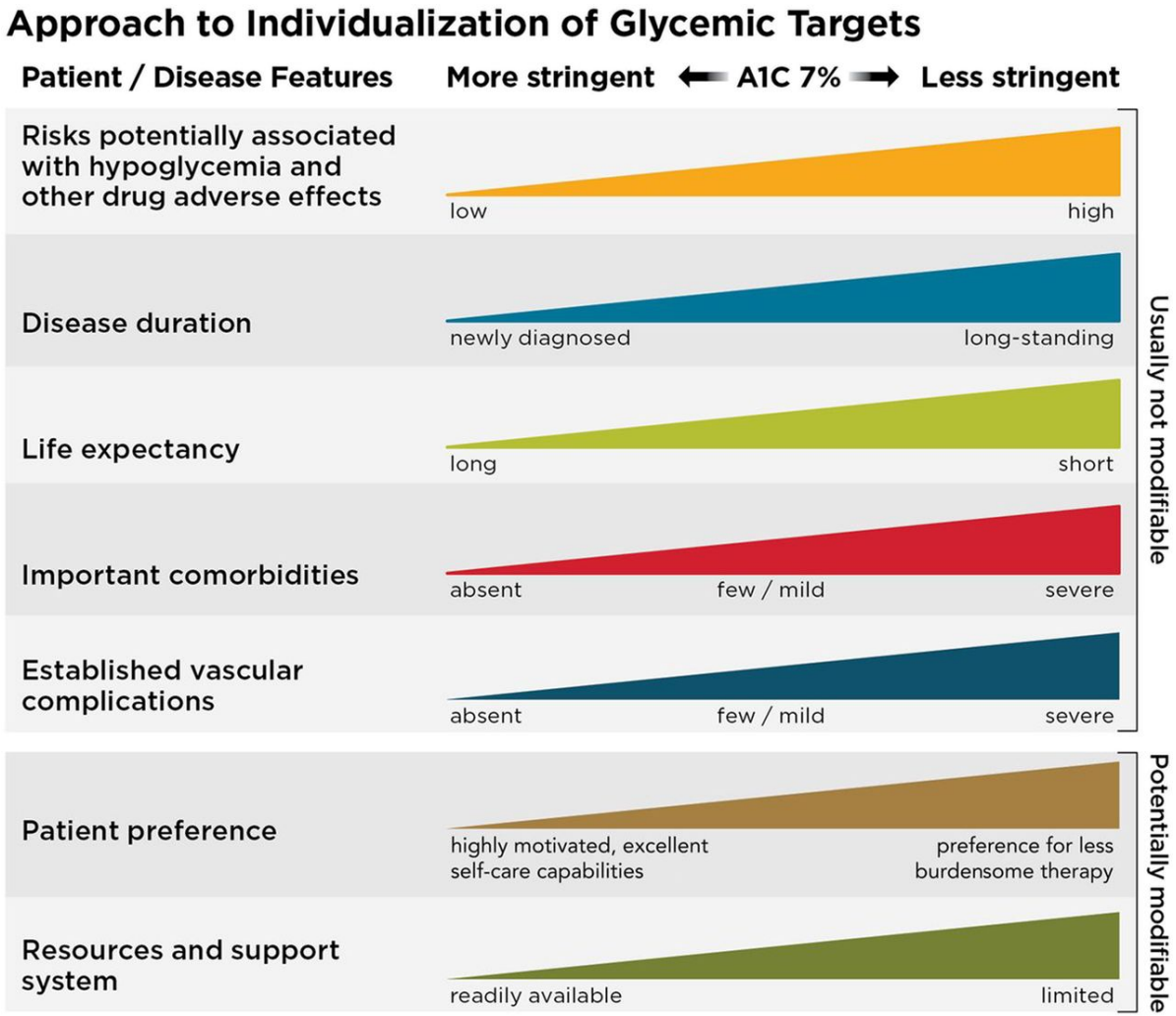
A. A1c
B. BMI
C. Cardiovascular & Complications
D. Diabetes Self-Management Education (DSME), Drugs, & Depression/Psychosocial
E. Exercises & Eyes
F. Family/Friends., Feet, & Follow-Up
G. Goals

Dia-BEAT-it Checklist: A1c & Avoid Hypoglycemia

Define your patient's individual parameters

- HgA1c
- Preprandial/fasting glucose levels
- Postprandial/non-fasting
- Avoid Hypoglycemia
- Teach what "HI" means

Depicted are patient and disease factors used to determine optimal A1C targets.



American Diabetes Association Clin Diabetes 2020;38:10-38

American Diabetes Association.

ADA Table 6.3: Summary of glycemic recommendations for many nonpregnant adults with diabetes

A1c	<7.0%
Preprandial capillary plasma glucose	80-130 mg/dL
Peak postprandial capillary plasma glucose	<180 mg/dL

More or less stringent glycemic goals for individual patients:
"individualized based on duration of diabetes, age/life expectancy, comorbid conditions, known CVD or advanced microvascular complications, hypoglycemia unawareness, and individual patient considerations."

Dia-BEAT-it Checklist: A1c & Avoid Hypoglycemia

- 15-15 rule
- "Glucose (15–20 g) is the preferred treatment for the conscious individual with blood glucose <70 mg/dL), although any form of carbohydrate that contains glucose may be used. Fifteen minutes after treatment, if SMBG shows continued hypoglycemia, the treatment should be repeated. Once SMBG returns to normal, the individual should consume a meal or snack to prevent recurrence of hypoglycemia." [B]

Standards of Medical Care in Diabetes -2020 Abridged for Primary Care Providers. Clinical Diabetes 2020; 38(1): 10-38. https://clinical.diabetesjournals.org/content/38/1/10

Sample Ambulatory Glucose Profile (AGP) Report.

AGP Report

Name

MRN

GLUCOSE STATISTICS AND TARGETS

26 Feb 2019–10 Mar 2019	**13 days**
% Time CGM is Active	**99.9%**

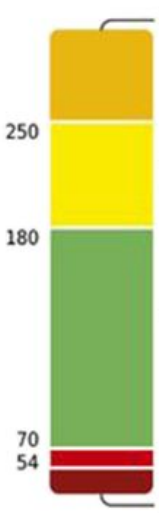
Glucose Ranges	**Targets** [% of Readings (Time/Day)]
Target Range 70–180 mg/dL	Greater than 70% (16h 48min)
Below 70 mg/dL	Less than 4% (58min)
Below 54 mg/dL	Less than 1% (14min)
Above 180 mg/dL	Less than 25% (6h)
Above 250 mg/dL	Less than 5% (1h 12min)

Each 5% increase in time in range (70–180 mg/dL) is clinically beneficial.

Average Glucose	**173 mg/dL**
Glucose Management Indicator (GMI)	**7.6%**
Glucose Variability	**49.5%**

Defined as percent coefficient of variation (%CV); target ≤36%

TIME IN RANGES



Very High (>250 mg/dL) **20%** (4h 48min)

High (181–250 mg/dL) **23%** (5h 31min)

Target Range (70–180 mg/dL) **47%** (11h 17min)

Low (54–69 mg/dL) **4%** (58min)

Very Low (<54 mg/dL) **6%** (1h 26min)

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Dia-BEAT-it Checklist: BMI

- Minimize medications for comorbidities that cause weight gain
- Set realistic weight loss goals:
  - 500-750 kcal/day energy deficit
  - You cannot outrun a bad diet.
- Consider risk : benefit of weight-loss medications if BMI ≥27 kg/m2. [A].
- Metabolic surgery should be recommended as an option to treat T2DM in adults with BMI 35.0–39.9 kg/m2 (32.5–37.4 kg/m2 in Asian Americans) who do not achieve durable weight loss and improvement in comorbidities (including hyperglycemia) with nonsurgical methods. [A]

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Dia-BEAT-it Checklist: Cardiovascular, CKD, & Complications

Assess ASCVD Risk!

- Hyperlipidemia
- Hypertension
- Heart Failure
- Heart Attack
- Chronic Kidney Disease
- Other Complications

Assess ASCVD Risk!
Hyperlipidemia
Hypertension
Heart Failure
Heart Attack

ASCVD Risk

- What is ASCVD?
  - CAD
  - CVA
  - PAD
- Assess ASCVD at diagnosis and at least annually
- 10-year ASCVD risk (http://tools.acc.org/ASCVD-Risk-Estimator-Plus)

Hyperlipidemia

Assess ASCVD Risk!
Hyperlipidemia
Hypertension
Heart Failure
Heart Attack

- Obtain a lipid profile at diagnosis and annually if over 40 years old, q5 years if under 40.
- 4-12 weeks after initiation of statin to monitor adherence

ASCVD

- 20-39 years with ASCVD, may be reasonable to initiate statin therapy + LIFESTYLE
- T2DM + multiple ASCVD risk factors, prescribe high-intensity statin therapy with the aim to reduce LDL-C levels by 50% or more.
- If ASCVD risk >20%, add ezetimibe to maximally tolerated statin to ↓LDL by >50%

No ASCVD

- 40-75 years, use a moderate-intensity statin + LIFESTYLE
- >75 years already on statin, reasonable to continue statin, if deciding to initiate, discuss potential benefits and risks.

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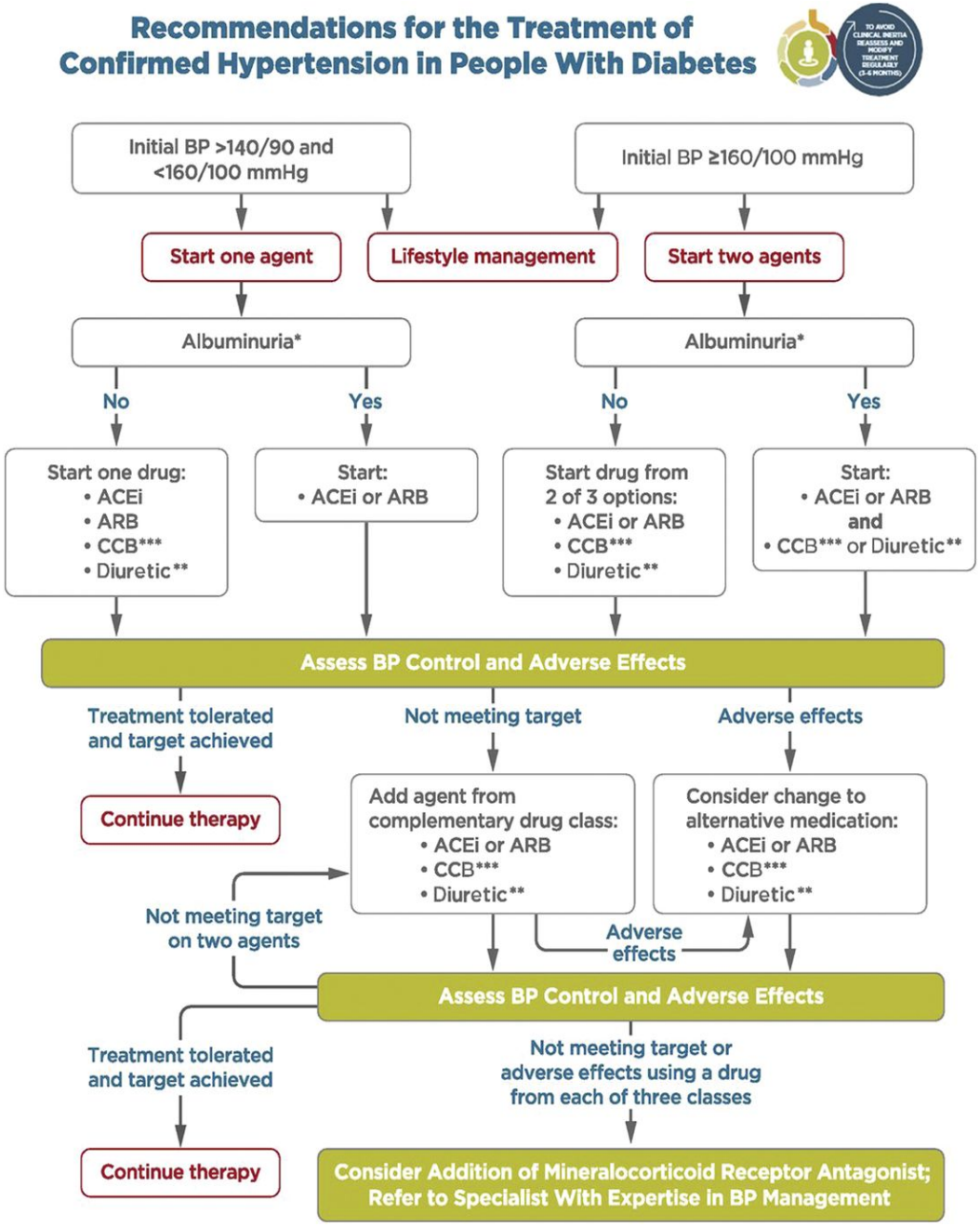

Assess ASCVD Risk!
Hyperlipidemia
Hypertension
Heart Failure
Heart Attack

"Blood pressure should be measured at every routine clinical visit. Patients found to have elevated blood pressure (≥140/90 mmHg) should have blood pressure confirmed using multiple readings, including measurements on a separate day, to diagnose hypertension." [B]

American Diabetes Association Clin Diabetes 2020;38:10-38

American Diabetes Association.

ASCVD Risk & Blood Pressure

- For individuals with DM and HTN at higher CV risk (existing ASCVD or 10-year ASCVD risk ≥15%), a blood pressure target of <130/80 mmHg may be appropriate, if it can be safely attained. [C]

- For individuals with diabetes and hypertension at lower risk for CVD (10-year ASCVD risk <15%), treat to a blood pressure target of <140/90 mmHg. [A]

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Aspirin?

- USPSTF Recommendation currently being updated.
- Benefit : Harm
- Secondary prevention aspirin strongly recommended.
  - Aspirin effective in reducing CV morbidity and mortality in high-risk patients with previous myocardial infarction or stroke.
- In primary prevention, for patients with no previous CV events, its net benefit is more controversial.

Aspirin (75 to 100 mg) compared with no aspirin in the primary prevention of cardiovascular disease and cancer

Outcomes	Number of participants (studies), follow-up	Certainty of the evidence (GRADE)	Relative effect (95% CI)	Anticipated absolute effects over 10 years	
				Risk with placebo	Risk difference with aspirin*
Total mortality Follow-up: range 3.8 to 10 years[1-4]	161,660 (13 RCTs)	⨁⨁⨁ **MODERATE** due to imprecision¶	**RR 0.97** (0.93 to 1.02)	**60-year-old person**Δ	
				83 per 1000Δ	2 fewer per 1000 (6 fewer to 2 more)
Myocardial infarction (MI) Nonfatal events Follow-up: range 3.8 to 10 years[1,2,4]	142,566 (12 RCTs)	⨁⨁⨁⨁ **HIGH**	**RR 0.83** (0.76 to 0.90)	**Low cardiovascular risk population**◇	
				27 per 1000§	5 fewer per 1000 (6 fewer to 3 fewer)
				Moderate cardiovascular risk population◇	
				83 per 1000§	14 fewer per 1000 (20 fewer to 8 fewer)
				High cardiovascular risk population◇	
				136 per 1000§	23 fewer per 1000 (33 fewer to 14 fewer)
Stroke Includes nonfatal ischemic and hemorrhagic strokes Follow-up: range 3.8 to 10 years[1,2,4]	127,433 (12 RCTs)	⨁⨁⨁ **MODERATE** due to imprecision¶	**RR 0.95** (0.85 to 1.06)	**Low cardiovascular risk population**◇	
				23 per 1000§	1 fewer per 1000 (3 fewer to 1 more)
				Moderate cardiovascular risk population◇	
				65 per 1000§	3 fewer per 1000 (10 fewer to 4 more)
				High cardiovascular risk population◇	
				108 per 1000	5 fewer per 1000 (16 fewer to 6 more)
Major extracranial bleed¶¶ Follow-up: range 3.8 to 10 years[1,2,4-6]	155,911 (11 RCTs)	⨁⨁⨁⨁ **HIGH**	**RR 1.46** (1.32 to 1.62)	**Low cardiovascular risk population**‡	
				8 per 1000§	4 more per 1000 (3 more to 5 more)
				Moderate cardiovascular risk population‡	
				24 per 1000§	11 more per 1000 (8 more to 15 more)
				High cardiovascular risk population‡	
				40 per 1000§	18 more per 1000 (13 more to 25 more)
Colorectal cancer (incidence) Follow-up: median 18.3 years[7]	14,033 (4 RCTs)	⨁⨁ **LOW** due to imprecision† and risk of bias△△	**HR 0.76** (0.60 to 0.96)	**Low colorectal cancer risk population: Anticipated absolute effect over 20 years**◇◇	
				30 per 1000**	7 fewer per 1000 (12 fewer to 1 fewer)
				Moderate colorectal cancer risk population	
				53 per 1000**	12 fewer per 1000 (21 fewer to 2 fewer)
				High colorectal cancer risk population	
				100 per 1000**	23 fewer per 1000 (39 fewer to 4 fewer)

GRADE Working Group grades of evidence:

- **High certainty:** We are very confident that the true effect lies close to that of the estimate of the effect.
- **Moderate certainty:** We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
- **Low certainty:** Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect.
- **Very low certainty:** We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of the effect.

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CI: confidence interval; RR: risk ratio; HR: hazard ratio; NCI: National Cancer Institute.

* **The risk difference in the aspirin group** (and its 95% CI) is based on the estimated risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

¶ The 95% CI for the absolute effect includes no benefit of aspirin. We did not rate down for risk of bias, but this was a borderline decision. Three of the trials did not blind patients, caregivers, or outcome adjudicator. Sensitivity analyses in meta-analysis by Raju et al[8] did not show evidence of risk of bias.

Δ Control group risk estimate for 10-year mortality applies to a 60-year-old person (male or female) and comes from population-based data from Statistics Norway. Mortality increases with age (eg, 50-year-old male; 40 deaths per 1000 in 10 years) and is lower in females than in males (eg, 2.5% in women aged 50 years versus 4% in men aged 50 years).

◇ Risk groups correspond to low (5%), medium (15%), and high risk (25%) according to the Framingham score (or other risk tool) to estimate 10-year risk.

§ Control group risk estimates in low, moderate, and high cardiovascular risk groups are based on the Framingham score. We have used data from an individual patient data meta-analysis to provide estimated risks for patient-important outcomes not covered by the Framingham risk score. We have also adjusted for 20% overestimation associated with Framingham risk score.

‡ In the individual patient data meta-analysis, risk for future major bleeding correlated with risk for future cardiovascular events. Therefore, we make the assumption that a patient at low, medium, or high risk of future cardiovascular events (determined by Framingham score) will be at low, medium, or high risk of future major bleeding events, respectively.

† The 95% CI for absolute effect borders no benefit of aspirin.

** Moderate control group risk estimate derived from meta-analysis by Rothwell et al.[7]

¶¶ Major extracranial bleeds are usually from the gastrointestinal tract and are most often defined in those requiring transfusion or resulting in death.

ΔΔ Treatment with aspirin during the included studies ranged from 2.6 to 6.9 years. Colorectal cancer incidence was determined using cancer and death registries for a median of 18.3 years without knowledge of post-treatment period aspirin use.

◇◇ Control group risk estimates based on NCI Colorectal Cancer Risk Predictor Tool.

References:

1. *Guirguis-Blake JM, Evans CV, Senger CA, et al. Aspirin for the primary prevention of cardiovascular events: a systematic evidence review for the US Preventive Services Task Force: evidence synthesis No 131. AHRQ Publication No. 13-05195-EF-1. Agency for Healthcare Research and Quality, 2015.*
2. *ASCEND Study Collaborative Group. Effects of aspirin for primary prevention in persons with diabetes mellitus. N Engl J Med 2018; 379:1529.*
3. *McNeil JJ, Nelson MR, Woods RL, et al. Effect of aspirin on all-cause mortality in the healthy elderly. N Engl J Med 2018; 379:1519.*
4. *Gaziano JM, Brotons C, Coppolecchia R, et al. Use of aspirin to reduce risk of initial vascular events in patients at moderate risk of cardiovascular disease (ARRIVE): a randomised, double-blind, placebo-controlled trial. Lancet 2018; 392:1036.*
5. *Ikeda Y, Shimada K, Teramoto T, et al. Low-dose aspirin for primary prevention of cardiovascular events in Japanese patients 60 years or older with atherosclerotic risk factors: a randomized clinical trial. JAMA 2014; 312:2510.*
6. *McNeil JJ, Wolfe R, Woods RL, et al. Effect of aspirin on cardiovascular events and bleeding in the healthy elderly. N Engl J Med 2018; 379:1509.*
7. *Rothwell PM, Wilson M, Elwin CE, et al. Long-term effect of aspirin on colorectal cancer incidence and mortality: 20-year follow-up of five randomised trials. Lancet 2010; 376:1741.*
8. *Raju N, Sobieraj-Teague M, Hirsh J, et al. Effect of aspirin on cardiovascular and all-cause mortality in primary prevention of cardiovascular disease: a meta-analysis of randomized controlled trials. Am J Med 2011; 124:621.*

Adapted from: Vandvik PO, Lincoff AM, Gore JM, et al. Primary and Secondary Prevention of Cardiovascular Disease: Antithrombotic Therapy and Prevention of Thrombosis, 9th ed: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines. Chest 2012; 141:e637S.

Heart Failure & Heart Attack

Assess ASCVD Risk!
Hyperlipidemia
Hypertension
Heart Failure
Heart Attack

- Select medications proved to have benefit in HF & clinically over ASCVD.
- Avoid thiazolidinediones which can worsen HF.
- Refer to cardiology.

Dia-BEAT-it Checklist: Cardiovascular, CKD, & Complications

Assess ASCVD Risk!

- Hyperlipidemia
- Hypertension
- Heart Failure
- Heart Attack
- Chronic Kidney Disease
- Other Complications

Risk of CKD progression, frequency of visits, and referral to nephrology according to GFR and albuminuria.

CKD is classified based on: · Cause (C) · GFR (G) · Albuminuria (A)				Albuminuria categories Description and range		
				A1	A2	A3
				Normal to mildly increased	Moderately increased	Severely increased
				<30 mg/g <3 mg/mmol	30-299 mg/g 3-29 mg/mmol	≥300 mg/g ≥30 mg/mmol
GFR categories (ml/min/1.73m^2) Description and range	G1	Normal or high	≥90	1 if CKD	Treat 1	Refer* 2
	G2	Mildly decreased	60-89	1 if CKD	Treat 1	Refer* 2
	G3a	Mildly to moderately decreased	45-59	Treat 1	Treat 2	Refer 3
	G3b	Moderately to severely decreased	30-44	Treat 2	Treat 3	Refer 3
	G4	Severely decreased	15-29	Refer* 3	Refer* 3	Refer 4+
	G5	Kidney failure	<15	Refer 4+	Refer 4+	Refer 4+

American Diabetes Association Clin Diabetes 2020;38:10-38

American Diabetes Association.

Other Conditions

- ✓ Autonomic dysfunction including gastroparesis
- ✓ Erectile Dysfunction
- ✓ Nonalcoholic fatty liver disease
- ✓ Obstructive sleep apnea
- ✓ Pancreatitis
- ✓ Periodontal disease

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Dia-BEAT-it Checklist: Drugs

- Metformin is the preferred initial pharmacologic agent for the treatment of type 2 diabetes. [A]
- Metformin should be continued as long as it is tolerated and not contraindicated; other agents, including insulin, should be added to metformin. [A]
- Early combination therapy can be considered in some patients at treatment initiation. [A]

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What's best after metformin?

- "A patient-centered approach should be used to guide the choice of pharmacologic agents. Considerations include CV comorbidities, hypoglycemia risk, impact on weight, cost, risk for side effects, and patient preferences". [E]

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Dia-BEAT-it Checklist: Drugs

- T2DM who have established/high risk ASCVD, CKD, or HF recommend as part of the glucose-lowering regimen independent of A1C and in consideration of patient-specific factors [B]:
  - Sodium–glucose cotransporter 2 (SGLT2) inhibitor
  - Glucagon-like peptide 1 (GLP-1) receptor agonist with demonstrated CVD benefit.
- "Intensification of treatment for patients with type 2 diabetes not meeting treatment goals should not be delayed." [B]
- "Medication regimen and medication-taking behavior should be reevaluated at regular intervals (every 3–6 months) and adjusted as needed to incorporate specific factors that impact choice of treatment." [E]

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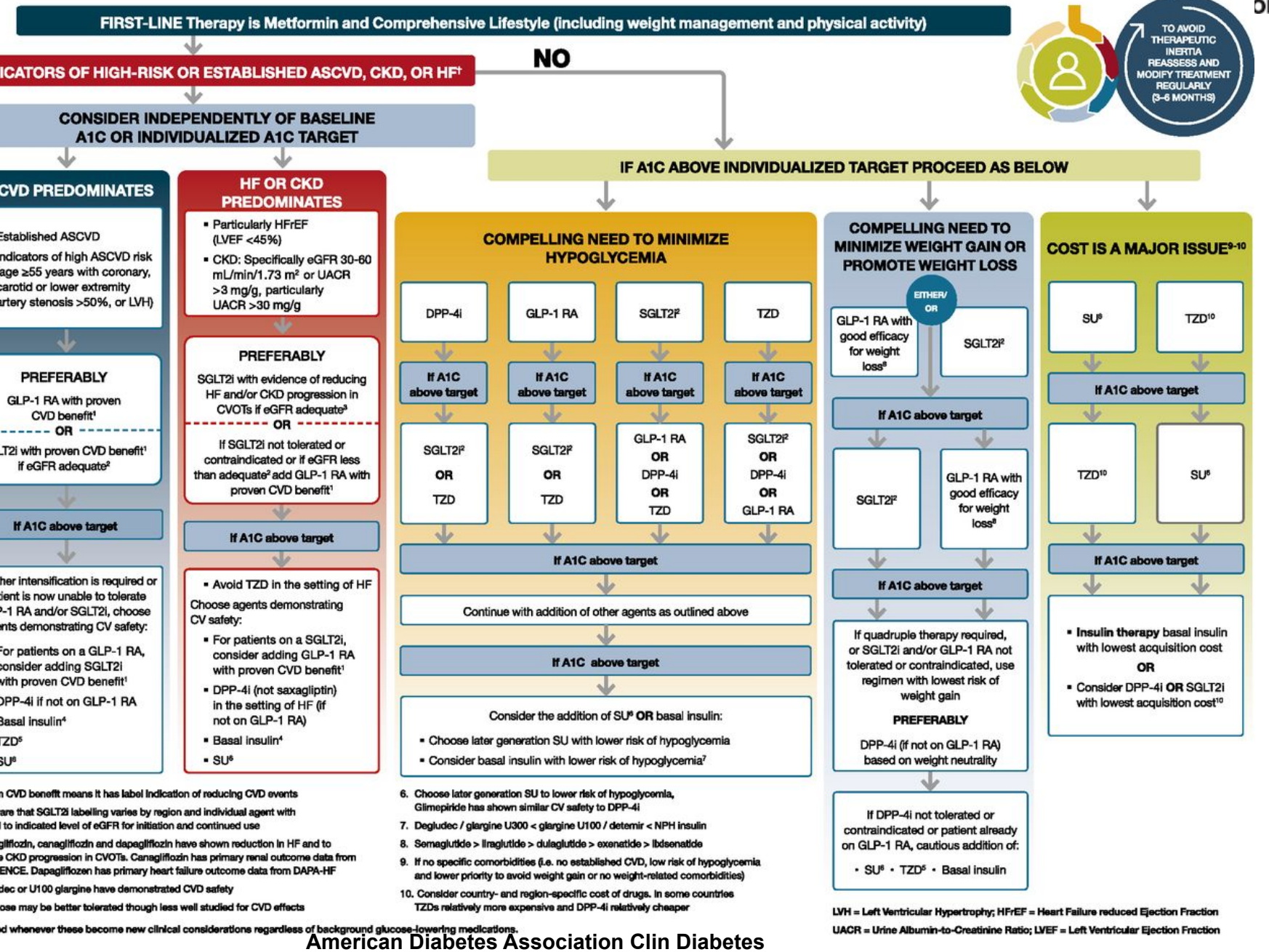
Glucose-lowering medication in type 2 diabetes: overall approach



1. Proven CVD benefit means it has label indication of reducing CVD events
2. Be aware that SGLT2i labelling varies by region and individual agent with regard to indicated level of eGFR for initiation and continued use
3. Empagliflozin, canagliflozin and dapagliflozin have shown reduction in HF and to reduce CKD progression in CVOTs. Canagliflozin has primary renal outcome data from CREDENCE. Dapagliflozen has primary heart failure outcome data from DAPA-HF
4. Degludec or U100 glargine have demonstrated CVD safety
5. Low dose may be better tolerated though less well studied for CVD effects
6. Choose later generation SU to lower risk of hypoglycemia, Glimepiride has shown similar CV safety to DPP-4i
7. Degludec / glargine U300 < glargine U100 / detemir < NPH insulin
8. Semaglutide > liraglutide > dulaglutide > exenatide > lixisenatide
9. If no specific comorbidities (i.e. no established CVD, low risk of hypoglycemia and lower priority to avoid weight gain or no weight-related comorbidities)
10. Consider country- and region-specific cost of drugs. In some countries TZDs relatively more expensive and DPP-4i relatively cheaper

† Actioned whenever these become new clinical considerations regardless of background glucose-lowering medications.

LVH = Left Ventricular Hypertrophy; HFrEF = Heart Failure reduced Ejection Fraction
UACR = Urine Albumin-to-Creatinine Ratio; LVEF = Left Ventricular Ejection Fraction

American Diabetes Association Clin Diabetes 2020;38:10-38

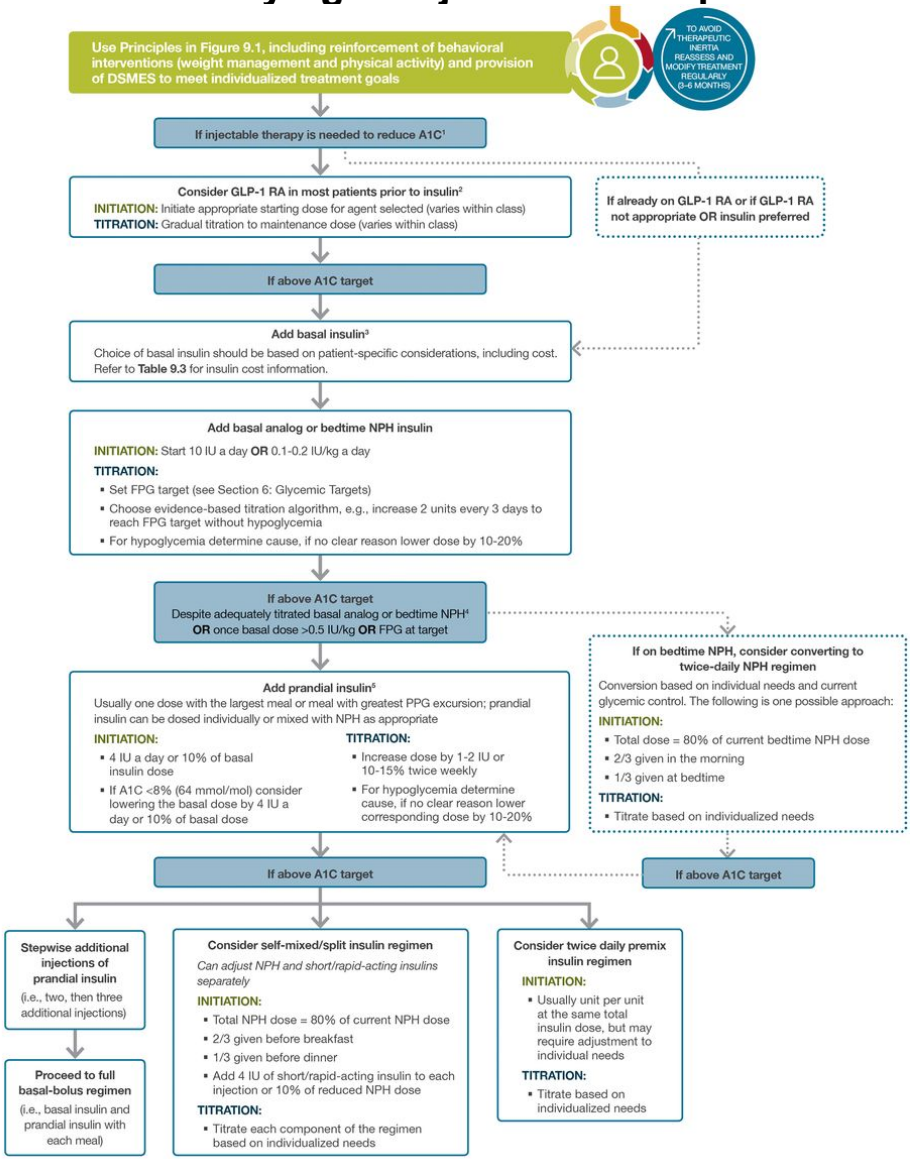
Drug-specific and patient factors to consider when selecting antihyperglycemic treatment in adults with type 2 diabetes.

American Diabetes Association.

	Efficacy	Hypoglycemia	Weight change	CV effects		Cost	Oral/SQ	Renal effects		Additional considerations
				ASCVD	HF			Progression of DKD	Dosing/use considerations*	
Metformin	High	No	Neutral (potential for modest loss)	Potential benefit	Neutral	Low	Oral	Neutral	▪ Contraindicated with eGFR <30 mL/min/1.73 m²	▪ Gastrointestinal side effects common (diarrhea, nausea) ▪ Potential for B12 deficiency
SGLT-2 inhibitors	Intermediate	No	Loss	Benefit: empagliflozin†, canagliflozin	Benefit: empagliflozin†, canagliflozin, dapagliflozin‡	High	Oral	Benefit: canagliflozin§, empagliflozin, dapagliflozin	▪ Renal dose adjustment required (canagliflozin, dapagliflozin, empagliflozin, ertugliflozin)	▪ **FDA Black Box:** Risk of amputation (**canagliflozin**) ▪ Risk of bone fractures (canagliflozin) ▪ DKA risk (all agents, rare in T2DM) ▪ Genitourinary infections ▪ Risk of volume depletion, hypotension ▪ ↑LDL cholesterol ▪ Risk of Fournier's gangrene
GLP-1 RAs	High	No	Loss	Neutral: lixisenatide Benefit: See label indication of reducing CVD events	Neutral	High	SQ; oral (semaglutide)	Benefit: liraglutide	▪ Renal dose adjustment required (exenatide, lixisenatide) ▪ Caution when initiating or increasing dose due to potential risk of acute kidney injury	▪ **FDA Black Box:** Risk of thyroid C-cell tumors (**liraglutide, albiglutide, dulaglutide, exenatide extended release**) ▪ Gastrointestinal side effects common (nausea, vomiting, diarrhea) ▪ Injection site reactions ▪ ?Acute pancreatitis risk
DPP-4 inhibitors	Intermediate	No	Neutral	Neutral	Potential risk: saxagliptin	High	Oral	Neutral	▪ Renal dose adjustment required (sitagliptin, saxagliptin, alogliptin); can be used in renal impairment ▪ No dose adjustment required for linagliptin	▪ Potential risk of acute pancreatitis ▪ Joint pain
Thiazolidinediones	High	No	Gain	Potential benefit: pioglitazone	Increased risk	Low	Oral	Neutral	▪ No dose adjustment required ▪ Generally not recommended in renal impairment due to potential for fluid retention	▪ **FDA Black Box:** Congestive heart failure [**pioglitazone, rosiglitazone**] ▪ Fluid retention (edema; heart failure) ▪ Benefit in NASH ▪ Risk of bone fractures ▪ Bladder cancer (pioglitazone) ▪ ↑LDL cholesterol (rosiglitazone)
Sulfonylureas (2nd generation)	High	Yes	Gain	Neutral	Neutral	Low	Oral	Neutral	▪ Glyburide: not recommended ▪ Glipizide and glimepiride: initiate conservatively to avoid hypoglycemia	▪ FDA Special Warning on increased risk of cardiovascular mortality based on studies of an older sulfonylurea (tolbutamide)
Insulin — Human insulin	Highest	Yes	Gain	Neutral	Neutral	Low	SQ; inhaled	Neutral	▪ Lower insulin doses required with a decrease in eGFR; titrate per clinical response	▪ Injection site reactions ▪ Higher risk of hypoglycemia with human insulin (NPH or premixed formulations) vs. analogs
Insulin — Analogs						High	SQ			

American Diabetes Association Clin Diabetes 2020;38:10-38

Intensifying to injectable therapies.



1. Consider insulin as the first injectable if evidence of ongoing catabolism, symptoms of hyperglycemia are present, when A1C levels (>10% [86 mmol/mol]) or blood glucose levels (≥300 mg/dL [16.7 mmol/L]) are very high, or a diagnosis of type 1 diabetes is a possibility.
2. When selecting GLP-1 RA, consider: patient preference, A1C lowering, weight-lowering effect, or frequency of injection. If CVD, consider GLP-1 RA with proven CVD benefit.
3. For patients on GLP-1 RA and basal insulin combination, consider use of a fixed-ratio combination product (iDegLira or iGlarLixi).
4. Consider switching from evening NPH to a basal analog if the patient develops hypoglycemia and/or frequently forgets to administer NPH in the evening and would be better managed with an AM dose of a long-acting basal insulin.
5. If adding prandial insulin to NPH, consider initiation of a self-mixed or premixed insulin regimen to decrease the number of injections required.

American Diabetes Association Clin Diabetes 2020;38:10-38

American Diabetes Association.

The four critical times to provide and modify diabetes self-management education and support (DSMES).

Margaret A. Powers et al. Dia Care 2020;43:1636-1649

American Diabetes Association.

Dia-BEAT-it Checklist: Depression & Psychosocial Aspects

- Resources (financial, social, emotional)
- Support team?
  - Include caregivers and family members
- Assess for diabetes distress, depression, anxiety, disordered eating
- Cognitive screening (aged>65 years) with diabetes for cognitive impairment and depression
- Assess literacy, numeracy, and barriers.

Association of Depression with Diabetes Self-Care

Self-Care Activities (Past 7 Days)	**Major Depression (%)**	**No Major Depression (%)**	Odds Ratio	95% CI
Healthy eating ≤ 1x week	**17.2**	**8.8**	2.1	1.59-2.72
5 servings of fruits & vegetables ≤ 1x week	**32.4**	**21.1**	1.8	1.43-2.17
High-fat foods 6x week	**15.5**	**11.9**	1.3	1.01-1.73
Physical activity (30 min) ≤ 1x week	**44.1**	**27.3**	1.9	1.53-2.27
Specific exercise session ≤ 1x week	**62.1**	**45.8**	1.7	1.43-2.12
Smoking: yes	**16.1**	**7.7**	1.9	1.42-2.51

Egede LE, Ellis C. *Diabetes Res Clin Pract* 2010;87:302-12

Psychosocial Aspects impacted by Social Determinants of Health

Healthy People 2020: Social Determinants of Health. Accessed Dec 5, 2020. https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-of-health

Medical Nutrition Therapy

- ADA does not recommend one diet over another.
- Considerations for personal preferences including cultural, religious, economic goals
- Enlist your team Registered dietitian

Dia-BEAT-it ABCDEFG Checklist

A. A1c
B. BMI
C. Cardiovascular & Complications
D. Diabetes Self-Management Education (DSME), Drugs, & Depression/Psychosocial
E. Exercises & Eyes
F. Family/Friends., Feet, & Follow-Up
G. Goals

Dia-BEAT-it: Exercise & Eyes

- At least 150 minutes per week of aerobic moderate to vigorous-intensity activity
  - At least 3 days/week
  - No more than 2 consecutive days without activity
- Shorter durations (75 mins/week) of vigorous intensity or interval training may be sufficient for more fit.
- 3 days/week of strength training
- Flexibility & Balance training

Standards of Medical Care in Diabetes -2020 Abridged for Primary Care Providers. Clinical Diabetes 2020; 38(1): 10-38. https://clinical.diabetesjournals.org/content/38/1/10

Exercise is Medicine!

American College of Sports Medicine. (2018). Exercise is Medicine. Retrieved from https://www.exerciseismedicine.org/support_page.php/health-care-providers5/

The only prescription with unlimited refills.

Regular exercise (150 minutes per week) lowers risk of developing heart disease, high blood pressure, diabetes, stroke, and Alzheimer's disease. What prescription medication can say all that?

Learn more about the health benefits of exercise at www.exerciseismedicine.org

Your Prescription for Health
ExeRcise is Medicine®

Support for the Exercise is Medicine® Global Initiative is Provided By:

RD MEN 锐度® 运动护肤品牌

TECHNOGYM® The Wellness Company®

ANYTIME FITNESS®

Exercise as a vital sign

- Kaiser Permanente partnership with American College of Sports Medicine:
  - On average, how many days per week do you engage in moderate-to-vigorous physical activity?
  - On average, how many minutes do you engage in physical activity at this level?

Coleman, K.J. et al. (2012). Initial validation of an exercise "Vital Sign" in electronic medical records. *Medicine & Science in Sports & Exercise*. 2071-2076.

Sallis, R.E. (2016). The call for a physical activity vital sign in clinical practice. *The American Journal of Medicine, 129*(9), 903-905.

Dia-BEAT-it: Exercise & Eyes

- Patients with type 2 diabetes should have an initial dilated and comprehensive eye examination by an ophthalmologist or optometrist at the time of the diabetes diagnosis. [B]

- If there is no evidence of retinopathy for one or more annual eye exams and glycemia is well controlled, then screening every 1–2 years may be considered. If any level of diabetic retinopathy is present, subsequent dilated retinal examinations should be repeated at least annually by an ophthalmologist or optometrist. If retinopathy is progressing or sight-threatening, then examinations will be required more frequently. [B]

Standards of Medical Care in Diabetes -2020 Abridged for Primary Care Providers. Clinical Diabetes 2020; 38(1): 10-38. https://clinical.diabetesjournals.org/content/38/1/10

Dia-BEAT-it ABCDEFG Checklist

A. A1c
B. BMI
C. Cardiovascular & Complications
D. Diabetes Self-Management Education (DSME), Drugs, Depression/Psychosocial
E. Exercises & Eyes
F. Family/Friends, Feet, & Follow-Up
G. Goals

Dia-BEAT-it Checklist: Family/Friends, Feet, & Follow-Up

- Providers should consider assessing for the presence of social support providers (e.g., family, peer support, lay diabetes educators/caretakers) who may facilitate self-management behaviors, reduce burden of illness, and improve diabetes and general quality of life. [B]

Standards of Medical Care in Diabetes -2020 Abridged for Primary Care Providers. Clinical Diabetes 2020; 38(1): 10-38. https://clinical.diabetesjournals.org/content/38/1/10

Dia-BEAT-it Checklist: Feet

- Assessment for distal symmetric polyneuropathy should include a careful history and assessment of either:
  - temperature or pinprick sensation (small fiber function) and
  - vibration sensation using a 128-Hz tuning fork (for large-fiber function).
- All patients should have annual 10-g monofilament testing to identify feet at risk for ulceration and amputation. [B]

Standards of Medical Care in Diabetes -2020 Abridged for Primary Care Providers. Clinical Diabetes 2020; 38(1): 10-38. https://clinical.diabetesjournals.org/content/38/1/10

Dia-BEAT-it Checklist: Follow-Up Visits

- Interval medical history with physical exam (when in-person)
- Assess ABCDEF
- Medication taking behavior
  - Intolerance & side effects of medications
  - "What times/days do you miss taking your medication"
  - Blood glucose
- Glucose/A1c, Laboratory evaluations
  - Hypoglycemia
  - A1c quarterly if not at target, at least 2x year if stable glycemic control and meeting targets
  - Continuous glucose monitoring (CGM) – "time in range"
- Self-management behaviors: Nutrition, exercise
- Psychosocial health
- Referrals: Opthalmology, podiatry, RD, exercise physiology/personal trainer, Certified Diabetes Care and Education Specialist (CDCES) = CDE
- Immunizations

Dia-BEAT-it Checklist: Follow-Up Visits

- Diabetes Distress
  - Problem Areas in Diabetes (PAID)
  - Diabetes Distress Scale (DSS)
- Depression
  - PHQ-9
- Health Literacy & Numeracy
  - Diabetes Numeracy Test (DNT)
  - Brief Health Literacy Scale (BHLS)
- Diabetes self-Efficacy Scale

Psychosocial Care for People With Diabetes: A Position Statement of the American Diabetes Association. Diabetes Care 2016; 39(12): 2126-2140.

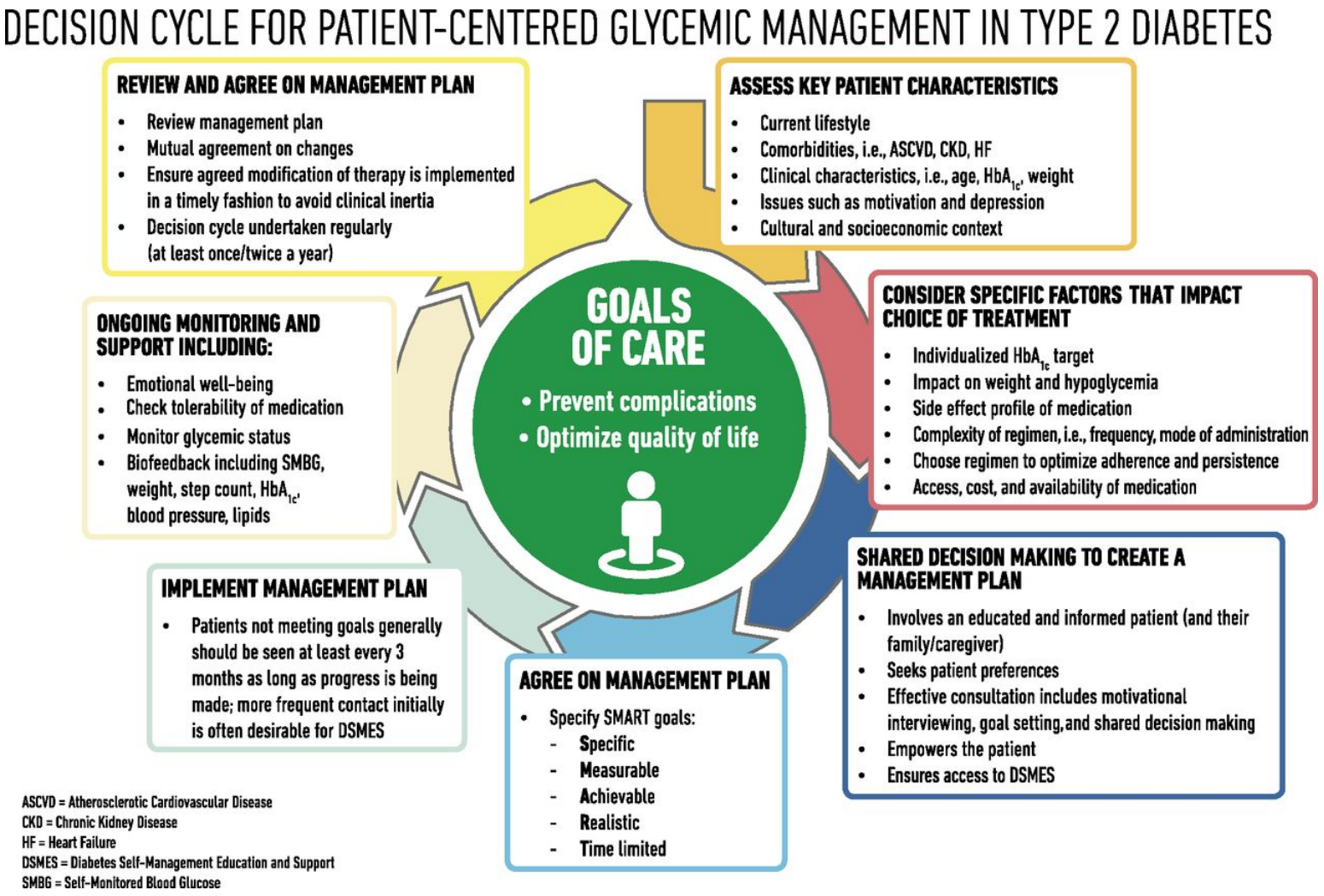
Dia-BEAT-it Checklist: Follow-Up Visits Person-centered Assessment

- How is diabetes affecting your daily life and that of your family?
- What questions do you have?
- What are one or two positive things you are doing right now to manage your diabetes?
- How can we best help you?

Dia-BEAT-it ABCDEFG Checklist

A. A1c
B. BMI
C. Cardiovascular & Complications
D. Diabetes Self-Management Education (DSME) & Drugs
E. Exercises & Eyes
F. Family/Friends., Feet, & Follow-Up
G. Goals

Decision cycle for patient-centered glycemic management in type 2 diabetes.



American Diabetes Association Clin Diabetes 2020;38:10-38

American Diabetes Association.

Pregnant, Pediatric & Elderly Patients

- Preconception care ideal! Insulin hallmark of treatment.
- Geriatrics: polypharmcy, cognitive impairment, depression, urinary incontinence, falls, persistent pain, psychosocial factors, hypoglycemia
- Peds: GLP1-RA, insulin

Take Home Points

- Avoid using the term diabetic
- Assess ABCDEFG
- Consider Psychosocial Aspects of Care when benchmarks are not reached.
- Refer to DSME at 4 key times in patient's care.
- Establish a team, you can't do this alone!

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Questions?

We Are Family (Medicine)

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