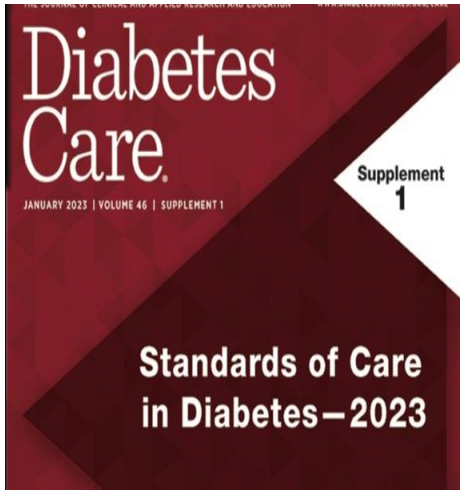

Nuevo algoritmo de tratamiento

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- Los “***Standards of Care”*** la American Diabetes Association (ADA)

- Guía de Práctica Clínica más importante en el manejo del paciente con diabetes en el mundo.

- Desde el 1989 se realiza una actualización constante y periódica sobre todo aquello que tiene que ver con el paciente con DM.

- Proporciona información relevante, contrastada y según evidencia científica a todo aquel clínico o no que tiene responsabilidad de asistir al paciente con DM.

Summary of Revisions: *Standards of Care in Diabetes—2023*

Diabetes Care 2023;46(Suppl. 1):S5–S9 | https://doi.org/10.2337/dc23-SREV

1- Clasificación y Diagnóstico Diabetes
2.- Prevención aparición de la DM 2
3- Valoración médica integral y comorbilidades
4- Resultados de Salud
5- Objetivos Glucémicos
6- Tecnología y DM
7- Manejo de la Obesidad en DM
8- Tratamiento Farmacológico
9- Enfermedad Cardiovascular
10- Enfermedad Renal Crónica
11- Retinopatia, Neuropatía y cuidados pies
12- Ancianos
13- Hospital

2. Classification and Diagnosis of Diabetes: *Standards of Care in Diabetes—2023*

Table 2.2—Criteria for the diagnosis of diabetes

FPG ≥126 mg/dL (7.0 mmol/L). Fasting is defined as no caloric intake for at least 8 h.*
OR
2-h PG ≥200 mg/dL (11.1 mmol/L) during OGTT. The test should be performed as described by WHO, using a glucose load containing the equivalent of 75 g anhydrous glucose dissolved in water.*
OR
A1C ≥6.5% (48 mmol/mol). The test should be performed in a laboratory using a method that is NGSP certified and standardized to the DCCT assay.*
OR
In a patient with classic symptoms of hyperglycemia or hyperglycemic crisis, a random plasma glucose ≥200 mg/dL (11.1 mmol/L).

DCCT, Diabetes Control and Complications Trial; FPG, fasting plasma glucose; OGTT, oral glucose tolerance test; WHO, World Health Organization; 2-h PG, 2-h plasma glucose. *In the absence of unequivocal hyperglycemia, diagnosis requires two abnormal test results from the same sample or in two separate test samples.

- **No existe una prueba superior a otra y cada una de ellas no detecta la DM en los mismos individuos**
- **Dco con dos pruebas anormales en la misma o en diferentes muestras sanguíneas (GB, Hb A1c o SOG)**
- **Si los resultados son discordantes en dos pruebas distintas, aquel que se encuentre por encima del umbral debe ser repetido**

** No HbA1c en anemia cel. falciformes, déficit 6GFD, SIDA, hemodiálisis y EPO*

Table 2.3—Criteria for screening for diabetes or prediabetes in asymptomatic adults

1. Testing should be considered in adults with overweight or obesity (BMI ≥25 kg/m^2 or ≥23 kg/m^2 in Asian American individuals) who have one or more of the following risk factors:
   - First-degree relative with diabetes
   - High-risk race/ethnicity (e.g., African American, Latino, Native American, Asian American, Pacific Islander)
   - History of CVD
   - Hypertension (≥140/90 mmHg or on therapy for hypertension)
   - HDL cholesterol level <35 mg/dL (0.90 mmol/L) and/or a triglyceride level >250 mg/dL (2.82 mmol/L)
   - Individuals with polycystic ovary syndrome
   - Physical inactivity
   - Other clinical conditions associated with insulin resistance (e.g., severe obesity, acanthosis nigricans)
2. People with prediabetes (A1C ≥5.7% [39 mmol/mol], IGT, or IFG) should be tested yearly.
3. People who were diagnosed with GDM should have lifelong testing at least every 3 years.
4. For all other people, testing should begin at age 35 years.
5. If results are normal, testing should be repeated at a minimum of 3-year intervals, with consideration of more frequent testing depending on initial results and risk status.
6. People with HIV

CVD, cardiovascular disease; GDM, gestational diabetes mellitus; IFG, impaired fasting glucose; IGT, impaired glucose tolerance.

Table 2.5—Criteria defining prediabetes*

FPG 100 mg/dL (5.6 mmol/L) to 125 mg/dL (6.9 mmol/L) (IFG)

OR

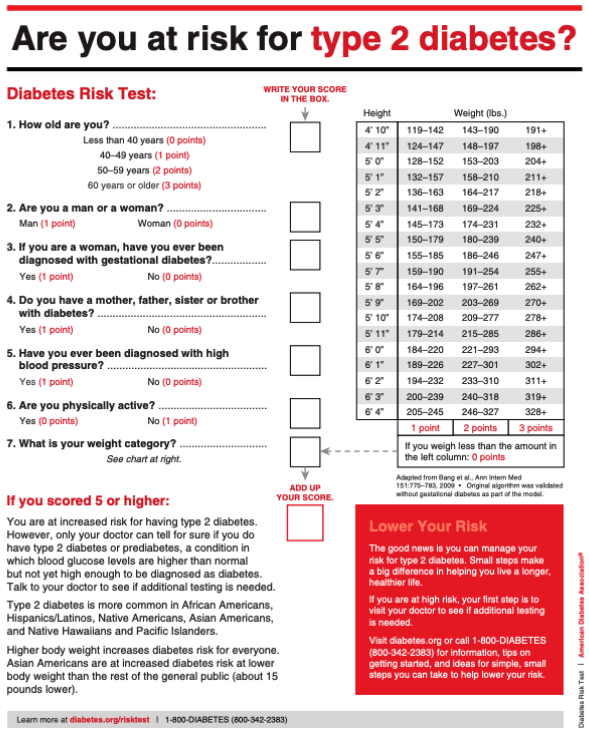
2-h PG during 75-g OGTT 140 mg/dL (7.8 mmol/L) to 199 mg/dL (11.0 mmol/L) (IGT)

OR

A1C 5.7–6.4% (39–47 mmol/mol)

Identificar y tratar los FRCV en pre DM y DM

Test de cribado “ADA risk test”



Are you at risk for type 2 diabetes?

Diabetes Risk Test:

WRITE YOUR SCORE IN THE BOX.

1. How old are you?
Less than 40 years (0 points)
40–49 years (1 point)
50–59 years (2 points)
60 years or older (3 points)

2. Are you a man or a woman?
Man (1 point) Woman (0 points)

3. If you are a woman, have you ever been diagnosed with gestational diabetes?
Yes (1 point) No (0 points)

4. Do you have a mother, father, sister or brother with diabetes?
Yes (1 point) No (0 points)

5. Have you ever been diagnosed with high blood pressure?
Yes (1 point) No (0 points)

6. Are you physically active?
Yes (0 points) No (1 point)

7. What is your weight category?
See chart at right.

Height	Weight (lbs.)		
4' 10"	119–142	143–190	191+
4' 11"	124–147	148–197	198+
5' 0"	128–152	153–203	204+
5' 1"	132–157	158–210	211+
5' 2"	136–163	164–217	218+
5' 3"	141–168	169–224	225+
5' 4"	145–173	174–231	232+
5' 5"	150–179	180–239	240+
5' 6"	155–185	186–246	247+
5' 7"	159–190	191–254	255+
5' 8"	164–196	197–261	262+
5' 9"	169–202	203–269	270+
5' 10"	174–208	209–277	278+
5' 11"	179–214	215–285	286+
6' 0"	184–220	221–293	294+
6' 1"	189–226	227–301	302+
6' 2"	194–232	233–310	311+
6' 3"	200–239	240–318	319+
6' 4"	205–245	246–327	328+
	1 point	2 points	3 points

If you weigh less than the amount in the left column: 0 points

Adapted from Bang et al., Ann Intern Med 151:775–783, 2009 • Original algorithm was validated without gestational diabetes as part of the model.

ADD UP YOUR SCORE.

If you scored 5 or higher:

You are at increased risk for having type 2 diabetes. However, only your doctor can tell for sure if you do have type 2 diabetes or prediabetes, a condition in which blood glucose levels are higher than normal but not yet high enough to be diagnosed as diabetes. Talk to your doctor to see if additional testing is needed.

Type 2 diabetes is more common in African Americans, Hispanics/Latinos, Native Americans, Asian Americans, and Native Hawaiians and Pacific Islanders.

Higher body weight increases diabetes risk for everyone. Asian Americans are at increased diabetes risk at lower body weight than the rest of the general public (about 15 pounds lower).

Lower Your Risk

The good news is you can manage your risk for type 2 diabetes. Small steps make a big difference in helping you live a longer, healthier life.

If you are at high risk, your first step is to visit your doctor to see if additional testing is needed.

Visit diabetes.org or call 1-800-DIABETES (800-342-2383) for information, tips on getting started, and ideas for simple, small steps you can take to help lower your risk.

Learn more at diabetes.org/risktest | 1-800-DIABETES (800-342-2383)

Diabetes Risk Test | American Diabetes Association®

3. Prevention or Delay of Type 2 Diabetes and Associated Comorbidities: *Standards of Care in Diabetes—2023*

- Monitorizar la glucosa anualmente en prediabetes
- Programa intensivo en cambios en estilo de vida en sobrepeso/Obesidad (***lograr y mantener una pérdida de 7% del peso y actividad física de moderada 150 min /semana (A)***
- ***Metformina en Prediabetes*** → Edad 29-59 años con IMC ≧ 35, GB ≧ 110, HbA1c ≧ 6% y antecedentes de DG (A)
- Determinar niveles B12 en Ttto con Metformina

- **Ttto de FR modificables de ECV**
- **Monotorizar Glu en pcte con alto riesgo de debutar con DM2 en Ttto con *estatinas*. No retirar**
- Riesgo de ictus e insulinorresistencia y preDM → ***Pioglotazona***
- Sobrepeso/obesidad y alto riesgo de DM → Fcos que actúen sobre pérdida de peso, hiperGlu, y reducción RCV

2023

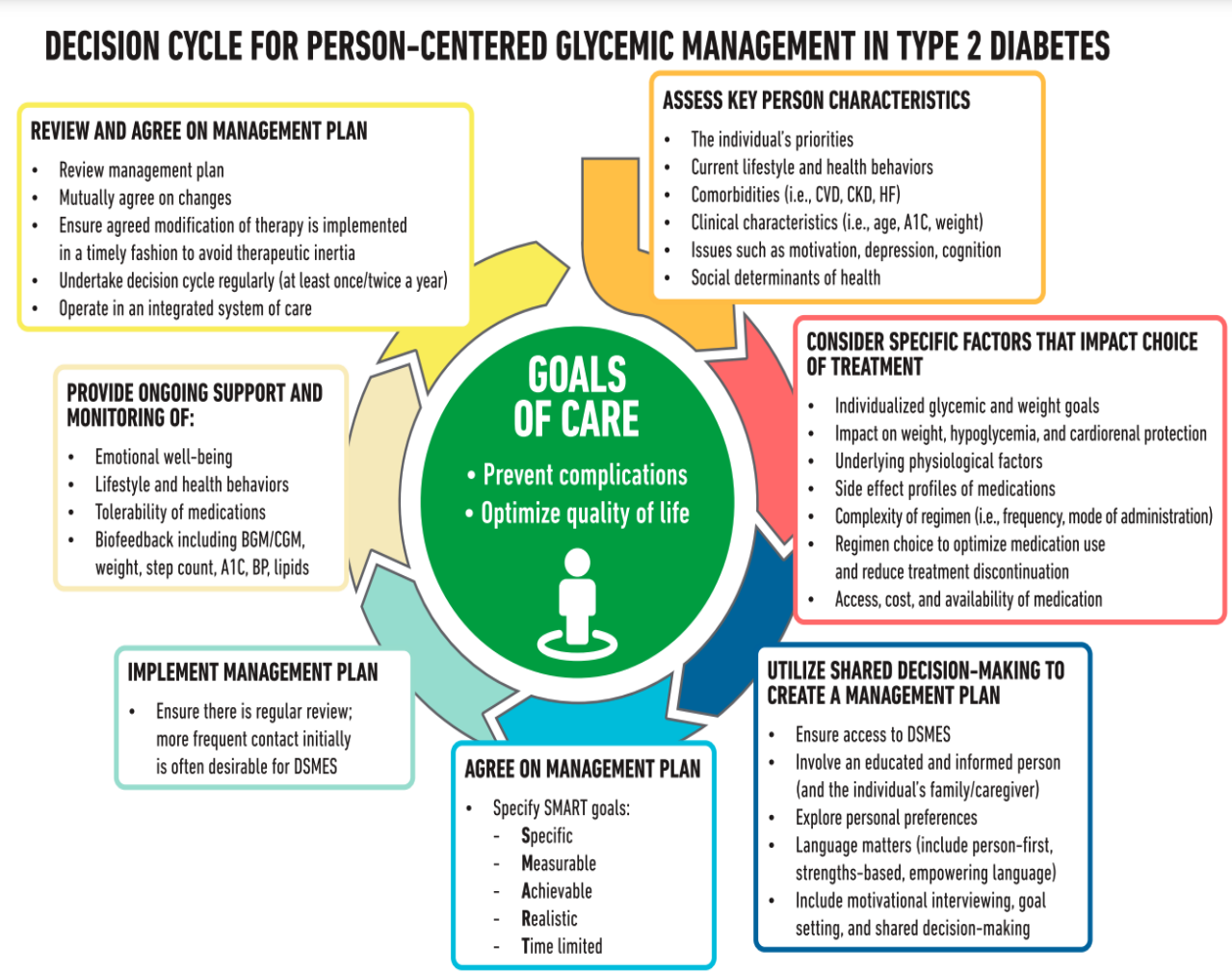
Recommendations

3.8 Prediabetes is associated with heightened cardiovascular risk; therefore, screening for and treatment of modifiable risk factors for cardiovascular disease are suggested. **B**

3.9 Statin therapy may increase the risk of type 2 diabetes in people at high risk of developing type 2 diabetes. In such individuals, glucose status should be monitored regularly and diabetes prevention approaches reinforced. It is not recommended that statins be discontinued. **B**

3.10 In people with a history of stroke and evidence of insulin resistance and prediabetes, pioglitazone may be considered to lower the risk of stroke or myocardial infarction. However, this benefit needs to be balanced with the increased risk of weight gain, edema, and fracture. **A** Lower doses may mitigate the risk of adverse effects. **C**

4. Comprehensive Medical Evaluation and Assessment of Comorbidities: *Standards of Care in Diabetes—2023*



- ***Ciclo de decisión centrado en el paciente.*** Evaluación continua con decisiones compartidas para alcanzar los objetivos y evitar la inercia clínica.
- Reforzar el lenguaje y la escucha activa.
- Evaluación médica completa en la visita inicial al confirmar el diagnóstico (A), clasificación de la DM (A), complicaciones derivadas de la misma (A) y comorbilidades (A).
- Evaluar el RCV, complicaciones, hipoglucemia…

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

		INITIAL VISIT	EVERY FOLLOW-UP VISIT	ANNUAL VISIT
PAST MEDICAL AND FAMILY HISTORY	**Diabetes history**			
	▪ Characteristics at onset (e.g., age, symptoms)	✓		
	▪ Review of previous treatment plans and response	✓		
	▪ Assess frequency/cause/severity of past hospitalizations	✓		
	Family history			
	▪ Family history of diabetes in a first-degree relative	✓		
	▪ Family history of autoimmune disorder	✓		
	Personal history of complications and common comorbidities			
	▪ Common comorbidities (e.g., obesity, OSA, NAFLD)	✓		
	▪ High blood pressure or abnormal lipids	✓		✓
	▪ Macrovascular and microvascular complications	✓		✓
	▪ Hypoglycemia: awareness/frequency/causes/timing of episodes	✓	✓	✓
	▪ Presence of hemoglobinopathies or anemias	✓		✓
	▪ Last dental visit	✓		✓
	▪ Last dilated eye exam			✓
	▪ Visits to specialists			✓
	Interval history			
	▪ Changes in medical/family history since last visit		✓	✓
BEHAVIORAL FACTORS	▪ Eating patterns and weight history	✓	✓	✓
	▪ Assess familiarity with carbohydrate counting (e.g., type 1 diabetes, type 2 diabetes treated with MDI)	✓		✓
	▪ Physical activity and sleep behaviors	✓	✓	✓
	▪ Tobacco, alcohol, and substance use	✓		✓
MEDICATIONS AND VACCINATIONS	▪ Current medication plan	✓	✓	✓
	▪ Medication-taking behavior	✓	✓	✓
	▪ Medication intolerance or side effects	✓	✓	✓
	▪ Complementary and alternative medicine use	✓	✓	✓
	▪ Vaccination history and needs	✓		✓
TECHNOLOGY USE	▪ Assess use of health apps, online education, patient portals, etc.	✓		✓
	▪ Glucose monitoring (meter/CGM): results and data use	✓	✓	✓
	▪ Review insulin pump settings and use, connected pen and glucose data	✓	✓	✓
SOCIAL LIFE ASSESSMENT	**Social network**			
	▪ Identify existing social supports	✓		✓
	▪ Identify surrogate decision maker, advanced care plan	✓		✓
	▪ Identify social determinants of health (e.g., food security, housing stability & homelessness, transportation access, financial security, community safety)	✓		✓

Continued on p. S53

Table 4.1 (cont.) - Components of the comprehensive diabetes medical evaluation at initial, follow-up, and annual visits

		INITIAL VISIT	EVERY FOLLOW-UP VISIT	ANNUAL VISIT
PHYSICAL EXAMINATION	▪ Height, weight, and BMI; growth/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, lipodystrophy)	✓	✓	✓
	▪ Comprehensive foot examination			
	• Visual inspection (e.g., skin integrity, callous formation, foot deformity or ulcer, toenails)**	✓		✓
	• Screen for PAD (pedal pulses—refer for ABI if diminished)	✓		✓
	• Determination of temperature, vibration or pinprick sensation, and 10-g monofilament exam	✓		✓
	▪ Screen for depression, anxiety, and disordered eating	✓		✓
	▪ Consider assessment for cognitive performance*	✓		✓
	▪ Consider assessment for functional performance*	✓		✓
LABORATORY EVALUATION	▪ A1C, if the results are not available within the past 3 months	✓	✓	✓
	▪ If not performed/available within the past year	✓		✓
	• Lipid profile, including total, LDL, and HDL cholesterol and triglycerides#	✓		✓^
	• Liver function tests#	✓		✓
	• Spot urinary albumin-to-creatinine ratio	✓		✓
	• Serum creatinine and estimated glomerular filtration rate+	✓		✓
	• Thyroid-stimulating hormone in people with type 1 diabetes#	✓		✓
	• Vitamin B12 if on metformin	✓		✓
	• Serum potassium levels in people with diabetes on ACE inhibitors, ARBs, or diuretics+	✓		✓

2023

Table 4.5—Highly recommended immunizations for adults with diabetes (Advisory Committee on Immunization Practices, Centers for Disease Control and Prevention)

Vaccination	Age-group recommendations	Frequency	GRADE evidence type*	Reference
Hepatitis B	<60 years of age; ≥60 years of age discuss with health care professionals	Two- or three-dose series	2	Centers for Disease Control and Prevention, Use of Hepatitis B Vaccination for Adults With Diabetes Mellitus: Recommendations of the Advisory Committee on Immunization Practices (ACIP) (204)
Human papilloma virus (HPV)	≤26 years of age; 27–45 years of age may also be vaccinated against HPV after a discussion with health care professionals	Three doses over 6 months	2 for female individuals, 3 for male individuals	Meites et al., Human Papillomavirus Vaccination for Adults: Updated Recommendations of the Advisory Committee on Immunization Practices (205)
Influenza	All people with diabetes advised not to receive live attenuated influenza vaccine	Annual	—	Demicheli et al., Vaccines for Preventing Influenza in the Elderly (206)
Pneumonia (PPSV23 [Pneumovax])	19–64 years of age, vaccinate with Pneumovax	One dose is recommended for those that previously received PCV13. If PCV15 used, follow with PPSV23 ≥1 year later. PPSV23 is not indicated after PCV20. Adults who received only PPSV23 may receive PCV15 or PCV20 ≥1 year after their last dose.	2	Centers for Disease Control and Prevention, Updated Recommendations for Prevention of Invasive Pneumococcal Disease Among Adults Using the 23-Valent Pneumococcal Polysaccaride Vaccine (PPSV23) (207)
	≥65 years of age	One dose is recommended for those that previously received PCV13. If PCV15 was used, follow with PPSV23 ≥1 year later. PPSV23 is not indicated after PCV20. Adults who received only PPSV23 may receive PCV15 or PCV20 ≥1 year after their last dose.	2	Falkenhorst et al., Effectiveness of the 23-Valent Pneumococcal Polysaccharide Vaccine (PPV23) Against Pneumococcal Disease in the Elderly: Systematic Review and Meta-analysis (208)
PCV20 or PCV15	Adults 19–64 years of age, with an immunocompromising condition (e.g., chronic renal failure), cochlear implant, or cerebrospinal fluid leak	One dose of PCV15 or PCV20 is recommended by the CDC.	3	Kobayashi et al., Use of 15-Valent Pneumococcal Conjugate Vaccine and 20-Valent Pneumococcal Conjugate Vaccine Among U.S. Adults: Updated Recommendations of the Advisory Committee on Immunization Practices—United States, 2022 (22)
	19–64 years of age, immunocompetent	For those who have never received any pneumococcal vaccine, the CDC recommends one dose of PCV15 or PCV20.		
	≥65 years of age, immunocompetent, have shared decision-making discussion with health care professionals	One dose of PCV15 or PCV20. PCSV23 may be given ≥8 weeks after PCV15. PPSV23 is not indicated after PCV20.		
Tetanus, diphtheria, pertussis (TDAP)	All adults; pregnant individuals should have an extra dose	Booster every 10 years	2 for effectiveness, 3 for safety	Havers et al., Use of Tetanus Toxoid, Reduced Diphtheria Toxoid, and Acellular Pertussis Vaccines: Updated Recommendations of the Advisory Committee on Immunization Practices—United States, 2019 (209)
Zoster	≥50 years of age	Two-dose Shingrix, even if previously vaccinated	1	Dooling et al., Recommendations of the Advisory Committee on Immunization Practices for Use of Herpes Zoster Vaccines (210)

- 19-64 años con FRCV, sin vacuna antineumocócica (VN) previa → PCV15 o PBV20
- > 65 años ya vacunados con PVC15 → PPSV23
- > 65 años que desconocen estado vacunal → 1 dosis de pcv15 o PCV20. Tras PC V15, al año, vacunar con PCV13

- Covid 19 para todos los adultos y niños con DM2

2023

DM y Covid 19 → Seguimiento para evaluar complicaciones y síntomas de long-Covid

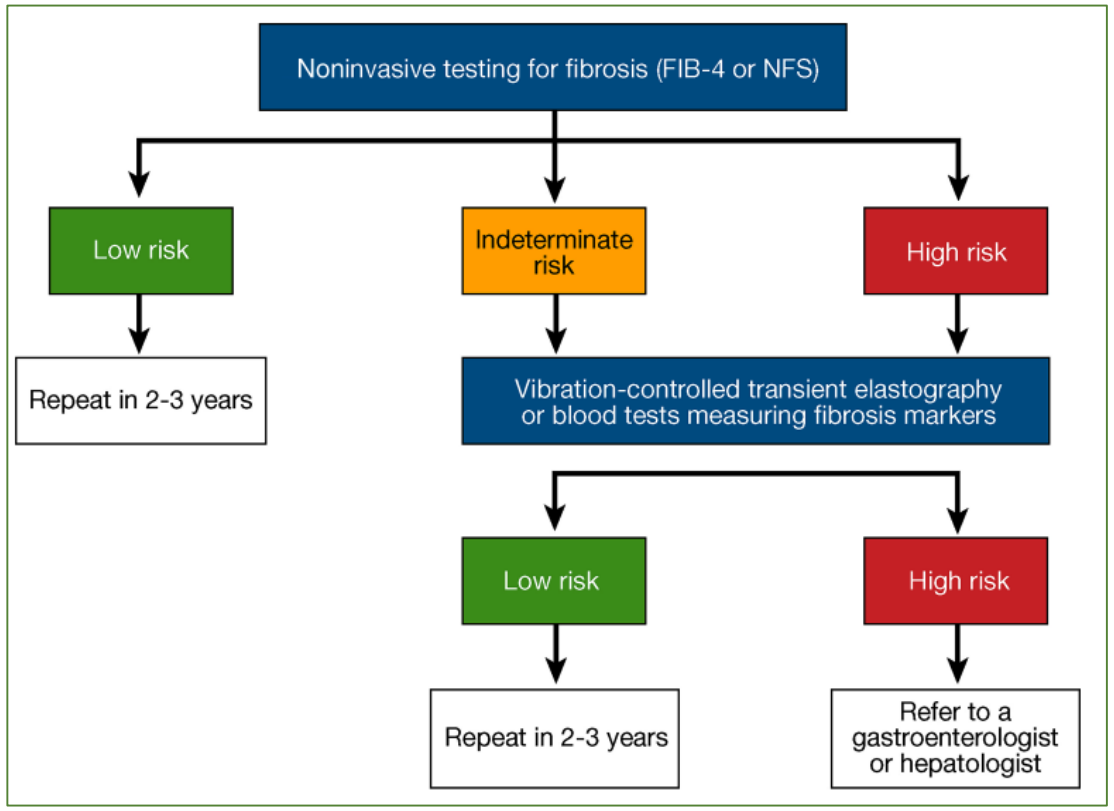
Recommendation

4.9 In the presence of cognitive impairment, diabetes treatment plans should be simplified as much as possible and tailored to minimize the risk of hypoglycemia. **B**

Recommendation

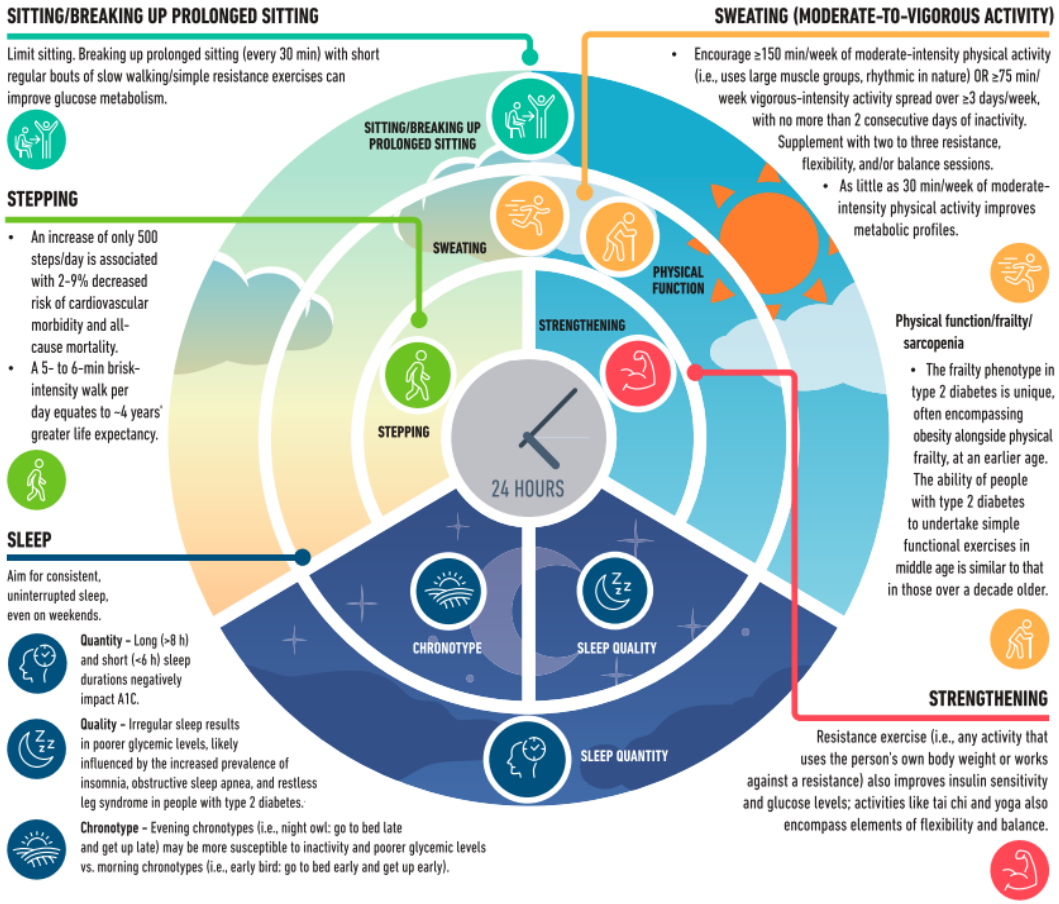
4.10 People with type 2 diabetes or prediabetes with cardiometabolic risk factors, who have either elevated liver enzymes (ALT) or fatty liver on imaging or ultrasound, should be evaluated for presence of nonalcoholic steatohepatitis and liver fibrosis. **C**

2023



- DM y deterioro cognitivo→ Simplificar Tttos para minimizar hipoGlu
- Test no invasivos para seguimiento de la fibrosis en NAFLAD
- En NAFLAD → Cambios en EV, aGLP-1 o Piogltazona y Cirugía bariática (CB)
- Ttto odontológico intensivo puede mejorar control glucémico.

IMPORTANCE OF 24-HOUR PHYSICAL BEHAVIORS FOR TYPE 2 DIABETES



	Glucose/insulin	Blood pressure	A1C	Lipids	Physical function	Depression	Quality of life
SITTING/BREAKING UP PROLONGED SITTING	↓	↓	↓	↓	↑	↓	↑
STEPPING	↓	↓	↓	↓	↑	↓	↑
SWEATING (MODERATE-TO-VIGOROUS ACTIVITY)	↓	↓	↓	↓	↑	↓	↑
STRENGTHENING	↓	↓	↓	↓	↑	↓	↑
ADEQUATE SLEEP DURATION	↓	↓	↓	↓	?	↓	↑
GOOD SLEEP QUALITY	↓	↓	↓	↓	?	↓	↑
CHRONOTYPE/CONSISTENT TIMING	↓	?	↓	?	?	↓	?

IMPACT OF PHYSICAL BEHAVIORS ON CARDIOMETABOLIC HEALTH IN PEOPLE WITH TYPE 2 DIABETES

5. Facilitating Positive Health Behaviors and Well-being to Improve Health Outcomes: *Standards of Care in Diabetes—2023*

2023

- No diferencia entre Ayuno intermitente/ alimentación restringida en el tpo y restricción continua
- Pérdida de peso >15% (nuevo fcos)
- No β carotenos por ↑ Ca pulmón y mortalidad CV
- Apoyo psicosocial como parte de Ttto

6. Glycemic Targets: *Standards of Care in Diabetes—2023*

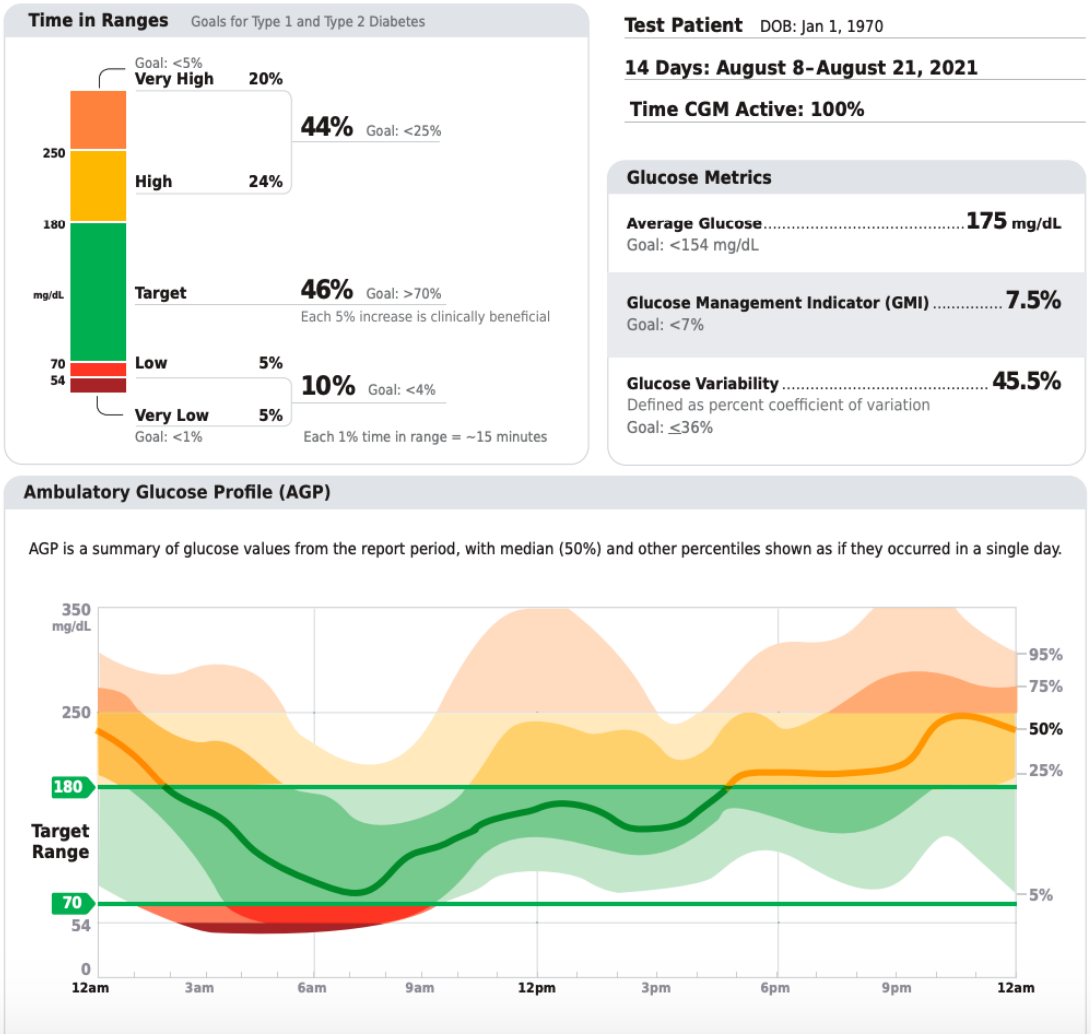
- Medición HbA1c

- Monotorización continua de la glucosa (MCG)
  → ***TER***: porcentaje de tiempo de la glucemia dentro del rango objetivo
  → ***IGG*** (indicador de gestión de la glucemia): nivel medio de HbA1c que cabría esperar basándose en la glucosa media medida

- Autocontrol glucémico

A1C	<7.0% (53 mmol/mol)*#
Preprandial capillary plasma glucose	80–130 mg/dL* (4.4–7.2 mmol/L)
Peak postprandial capillary plasma glucose†	<180 mg/dL* (10.0 mmol/L)

AGP Report: Continuous Glucose Monitoring



- TER: Se asocia con riesgo de complicaciones microvasculares y puede utilizase para evaluar control glucémico.
- *El tpo por debajo de rango (<4%) y* el *tiempo por encima de rango (>70%)* son parámetros útiles para evaluar el plan de Ttto
- Pctes frágiles o con alto riesgo de hipoGlu → Objetivo de TER superior 50% y TBR inferior 1%

2023

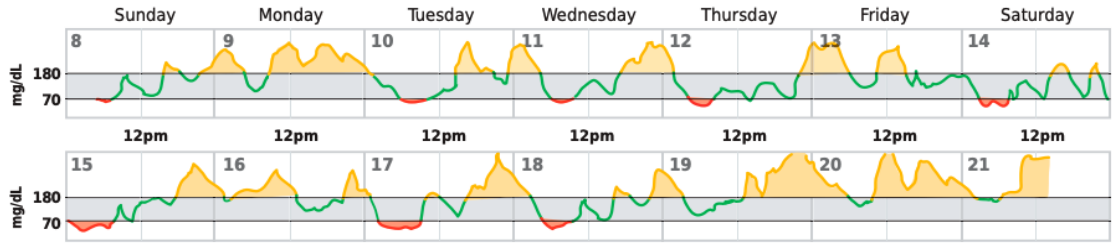
Table 6.2—Standardized CGM metrics for clinical care

1. Number of days CGM device is worn (recommend 14 days)	
2. Percentage of time CGM device is active (recommend 70% of data from 14 days)	
3. Mean glucose	
4. Glucose management indicator	
5. Glycemic variability (%CV) target ≤36%*	
6. TAR: % of readings and time >250 mg/dL (>13.9 mmol/L)	Level 2 hyperglycemia
7. TAR: % of readings and time 181–250 mg/dL (10.1–13.9 mmol/L)	Level 1 hyperglycemia
8. TIR: % of readings and time 70–180 mg/dL (3.9–10.0 mmol/L)	In range
9. TBR: % of readings and time 54–69 mg/dL (3.0–3.8 mmol/L)	Level 1 hypoglycemia
10. TBR: % of readings and time <54 mg/dL (<3.0 mmol/L)	Level 2 hypoglycemia

CGM, continuous glucose monitoring; CV, coefficient of variation; TAR, time above range; TBR, time below range; TIR, time in range. *Some studies suggest that lower %CV targets (<33%) provide additional protection against hypoglycemia for those receiving insulin or sulfonylureas. Adapted from Battelino et al. (35).

Daily Glucose Profiles

Each daily profile represents a midnight-to-midnight period.



- Evaluar el riesgo de hipoGlu y utilizar herramientas validadas
- En hipoGlu nivel 2 sin síntomas → Utilizar Puntuación de Clarke, Gold o Perdersen-Bjergaard

- Se mantiene la tabla clásica de individualización de objetivos
- Establecer el objetivo glucémico en consulta

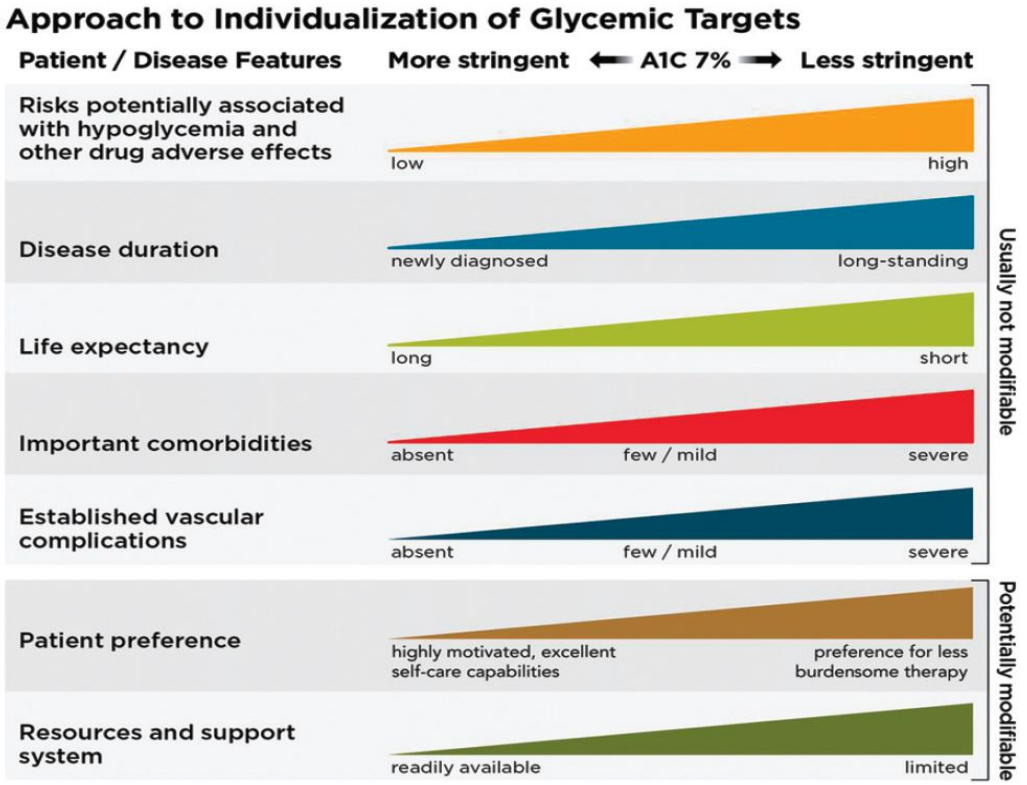


Figure 6.2—Patient and disease factors used to determine optimal glycemic targets. Characteristics and predicaments toward the left justify more stringent efforts to lower A1C; those toward the right suggest less stringent efforts. A1C 7% = 53 mmol/mol. Adapted with permission from Inzucchi et al. (68).

7. Diabetes Technology: *Standards of Care in Diabetes—2023*

- Preferencia por los dispositivos de MCG
- Ofrecer MCG en DM tratados con Ins
- MCG → Formación sobre situaciones y sustancias que puedan interferir y afectar a la precisión.
- No interrumpir el uso de la MCG
- MCG en hospital para dosificación de INS e hipoGlu

Table 7.3—Continuous glucose monitoring devices

Type of CGM	Description
rtCGM	CGM systems that measure and display glucose levels continuously
isCGM with and without alarms	CGM systems that measure glucose levels continuously but require scanning for visualization and storage of glucose values
Professional CGM	CGM devices that are placed on the person with diabetes in the health care professional's office (or with remote instruction) and worn for a discrete period of time (generally 7–14 days). Data may be blinded or visible to the person wearing the device. The data are used to assess glycemic patterns and trends. Unlike rtCGM and isCGM devices, these devices are clinic-based and not owned by the person with diabetes.

CGM, continuous glucose monitoring; isCGM, intermittently scanned CGM; rtCGM, real-time CGM.

Table 7.2—Interfering substances for glucose meter readings

Glucose oxidase monitors
Uric acid
Galactose
Xylose
Acetaminophen
L-DOPA
Ascorbic acid
Glucose dehydrogenase monitors
Icodextrin (used in peritoneal dialysis)

rtMCG

isCGM

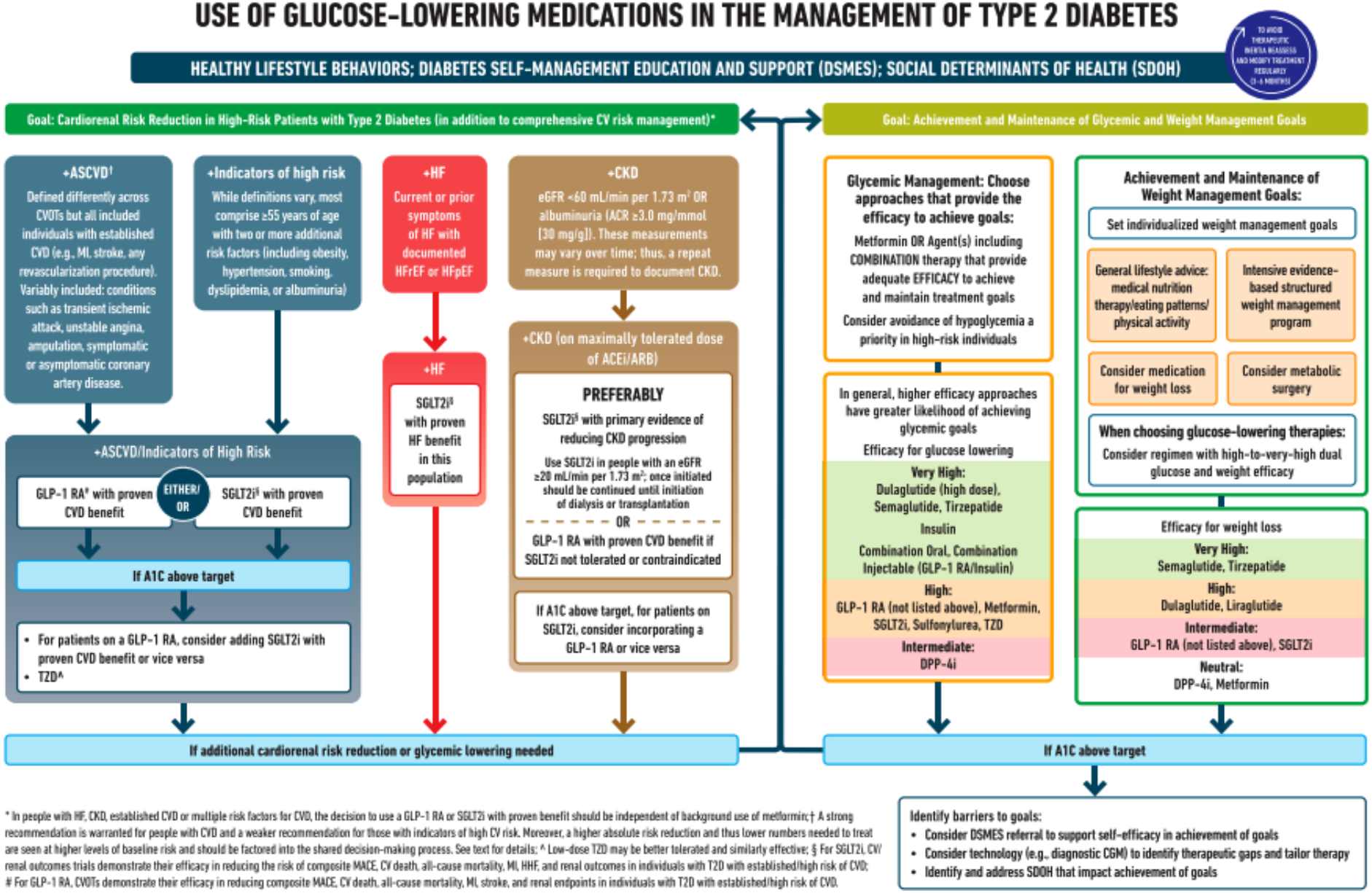
9. Pharmacologic Approaches to Glycemic Treatment: *Standards of Care in Diabetes—2023*

- ***Enfoque holístico, multifactorial, centrado en la persona y comorbilidades***

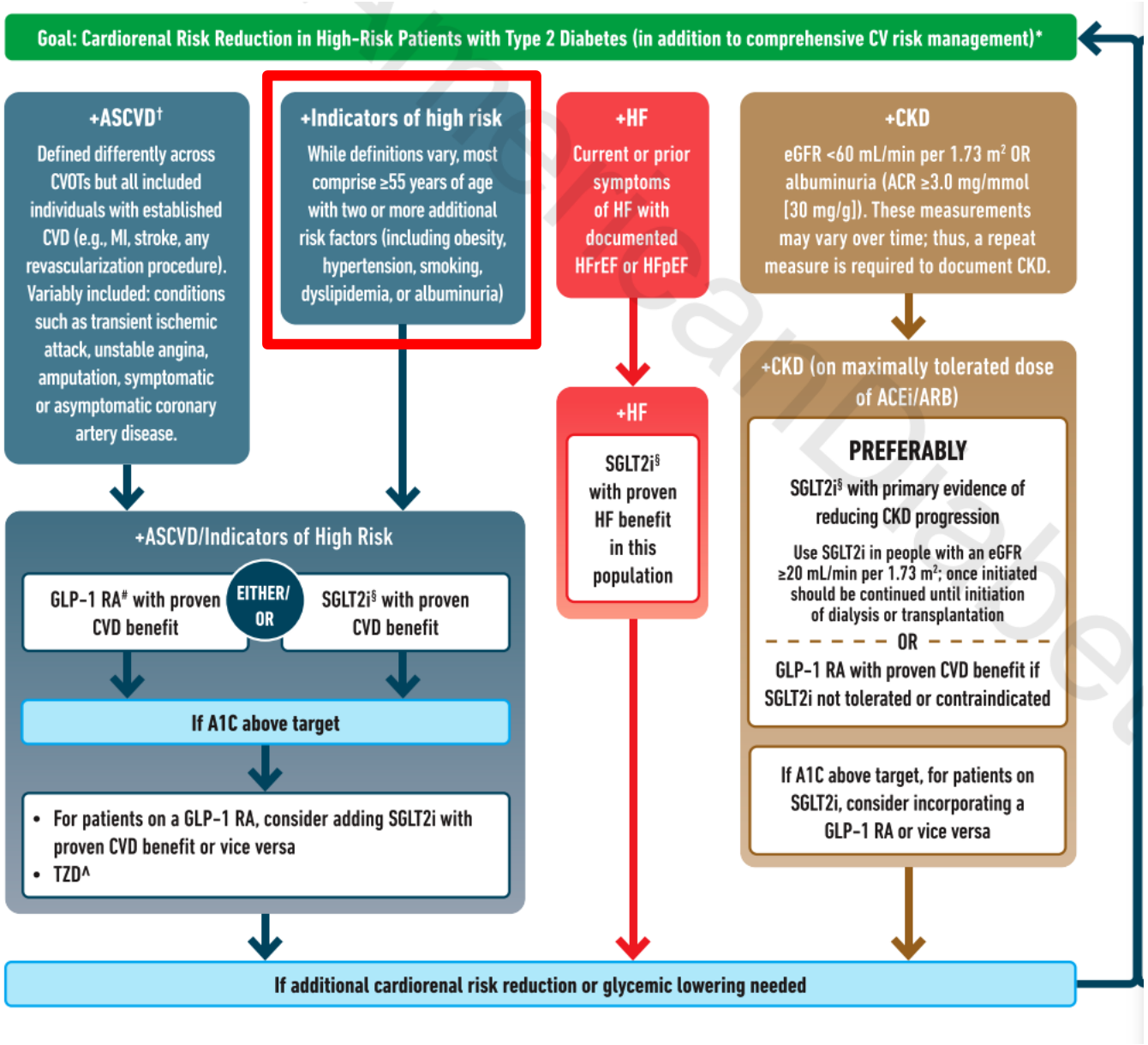
- ***El Tto debe iniciarse en el momento del diagnóstico, teniendo en cuenta***
  - ***Objetivos glucémicos individualizados***
  - ***Impacto sobre el peso***
  - ***Hipoglucemia***
  - ***Protección cardiorrenal***

DM 2 y riesgo establecido alto de ECV aterosclerótica, insuficiencia cardiaca y/o ERC → Fármacos que reduzcan el riesgo cardiorrenal

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



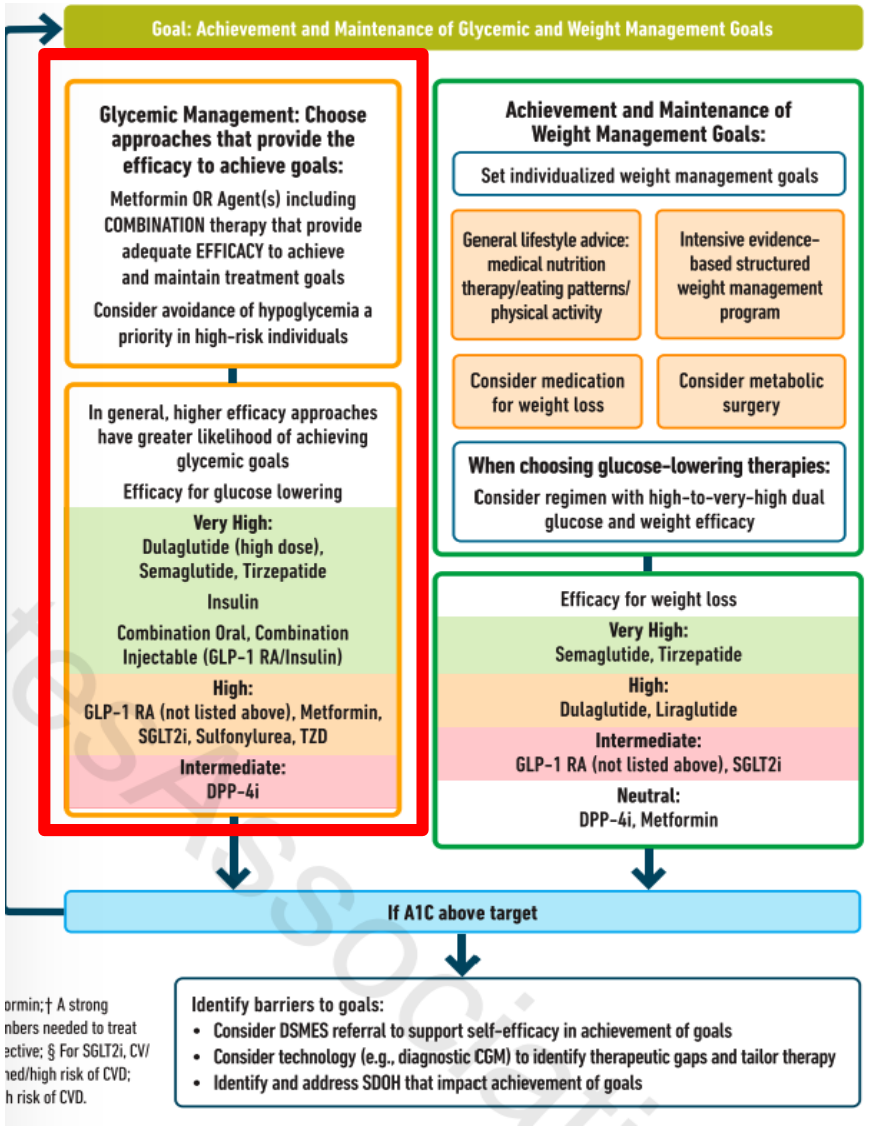
* In people with HF, CKD, established CVD or multiple risk factors for CVD, the decision to use a GLP-1 RA or SGLT2i with proven benefit should be independent of background use of metformin; † A strong recommendation is warranted for people with CVD and a weaker recommendation for those with indicators 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.



- ***Indicadores de alto riesgo***

>55 años con 2 o más factores de riesgo

- Obesidad
- HTA
- Dislipemia
- Tabaquismo
- Albuminuria



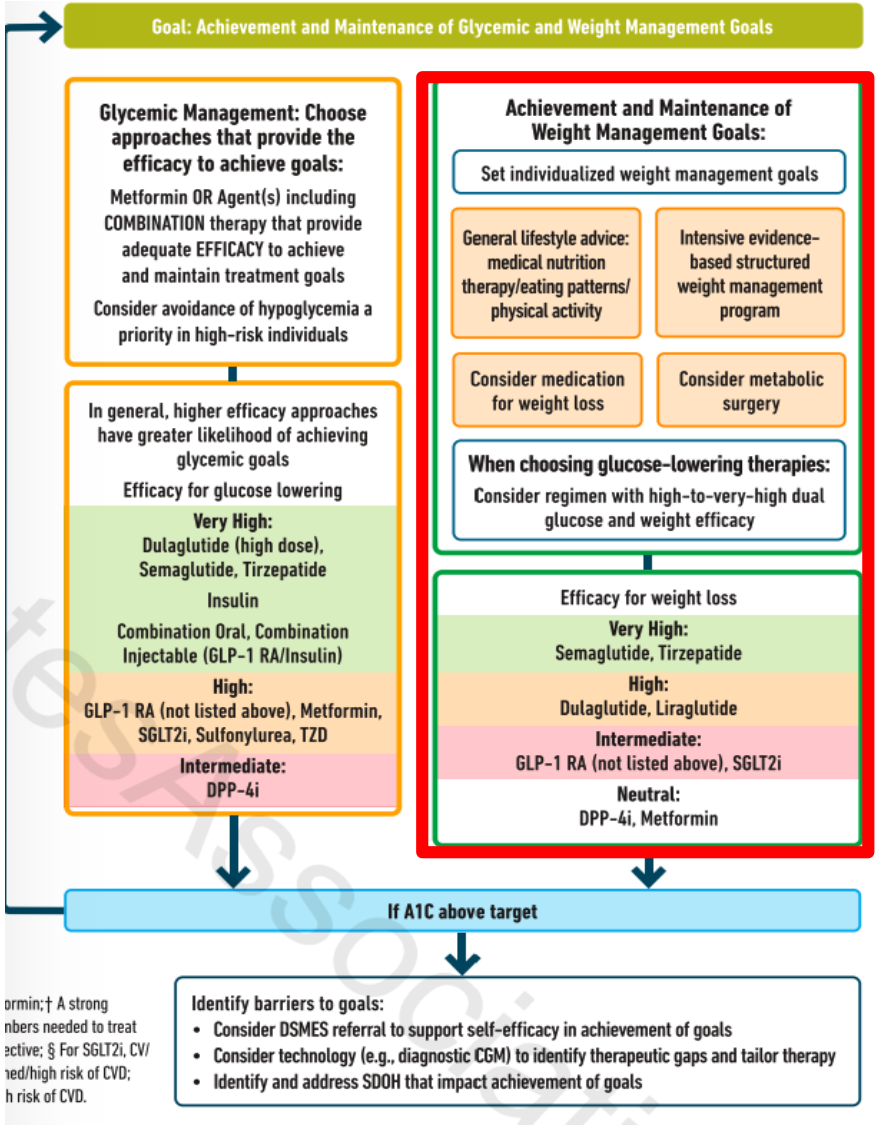
Sin ECV, indicadores de alto RCV, IC o ERC →

- Eficacia en reducción glucémica
- Control de peso
- Evitar hipoglucemias
- Coste/acceso
- Preferencias individuales

- **Metformina o terapia combinada**
- El tratamiento combinado al inicio si HbA1c% >1,5% del objetivo

Eficacia muy alta en la reducción glucémica:

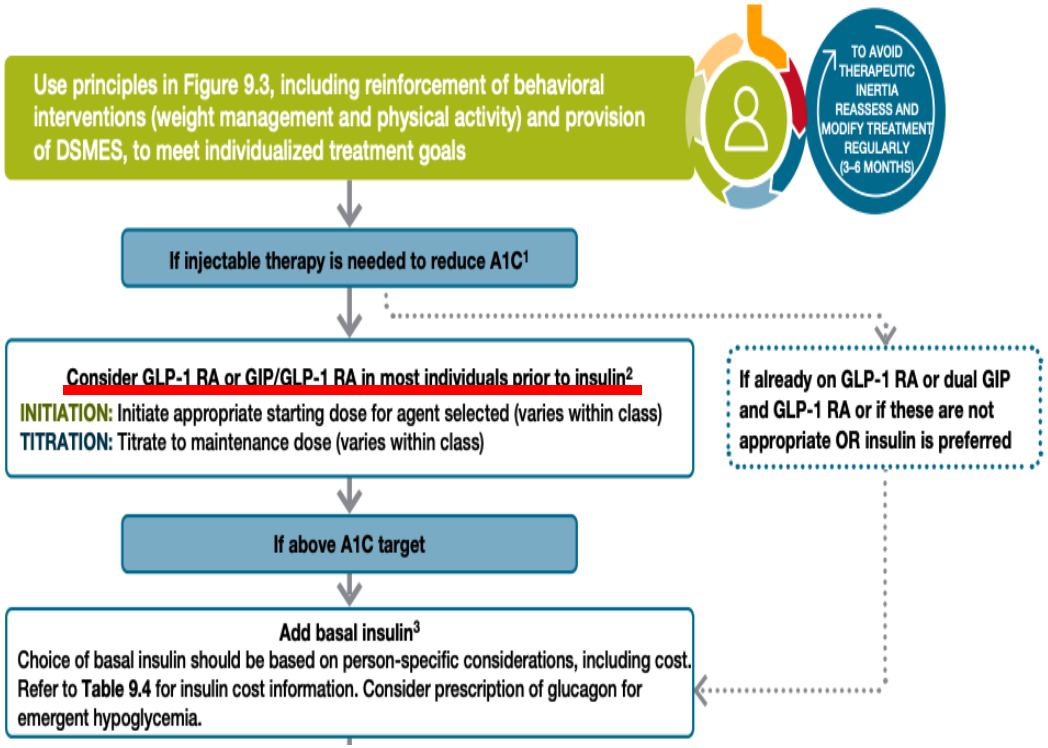
- ✓ aGLP-1 (Dulaglutide dosis altas y Semaglutide) Tirzepatide
- ✓ Insulina
- ✓ Terapia oral combinada
- ✓ Terapia inyectable combinada



Eficacia reducción de peso :

- ✓ **Muy alta:** Semaglutide y Tirzepatide
- ✓ Alta: Dulaglutide y Liraglutide
- ✓ Media: Otros aGLP-1 e iSGLT2
- ✓ Neutra: MET e iDPP-4

Revisión continua de eficacia, efectos secundarios, dosis y cambios de objetivos glucémicos
Evitar inercia terapéutica

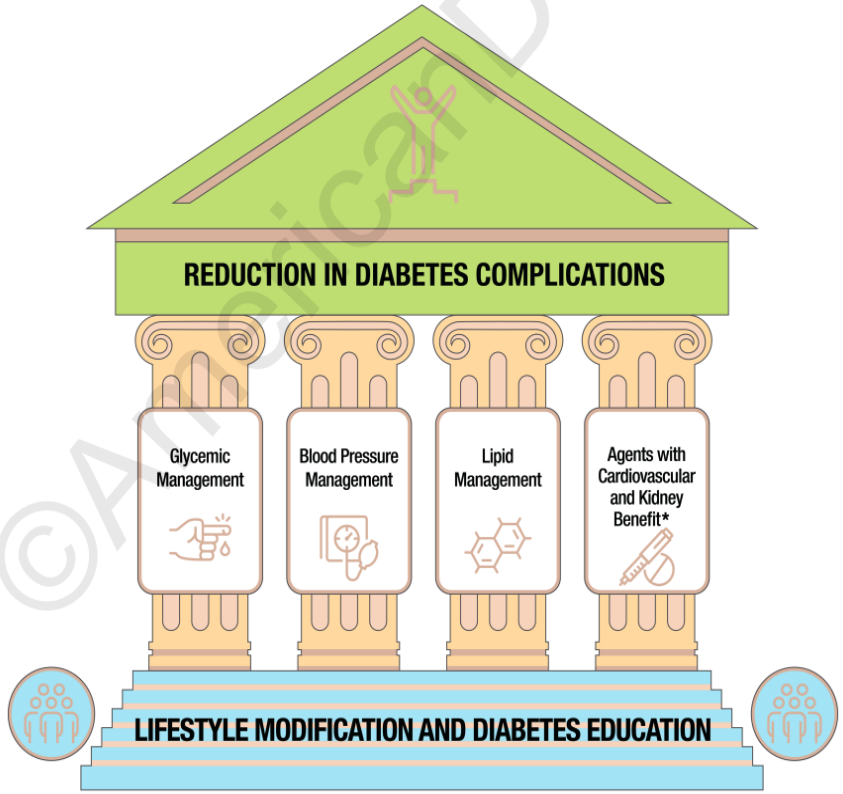


Inicio precoz de Insulina:
Glucemia basal > 300 mg/dL o HbA1c > 10% o síntomas de hiperglucemia (poliuria, polidipsia) o de catabolismo (pérdida de peso)

INS inhalada como INS rápida
Si Tto con INS, considerar aGLP-1 antes que INS prandial para mejorar control prandial, minimizar hipoGlu y aumento de peso.

- Se prefiere aGLP-1/ Tirzepatide a INS
- INS combinado con aGLP-1 → mayor eficacia, durabilidad del efecto y beneficio en peso e hipoGlu

10. Cardiovascular Disease and Risk Management: *Standards of Care in Diabetes—2023*



Enfoque multifactorial para reducción de del riesgo de complicaciones de la DM

HTA:

Recommendations

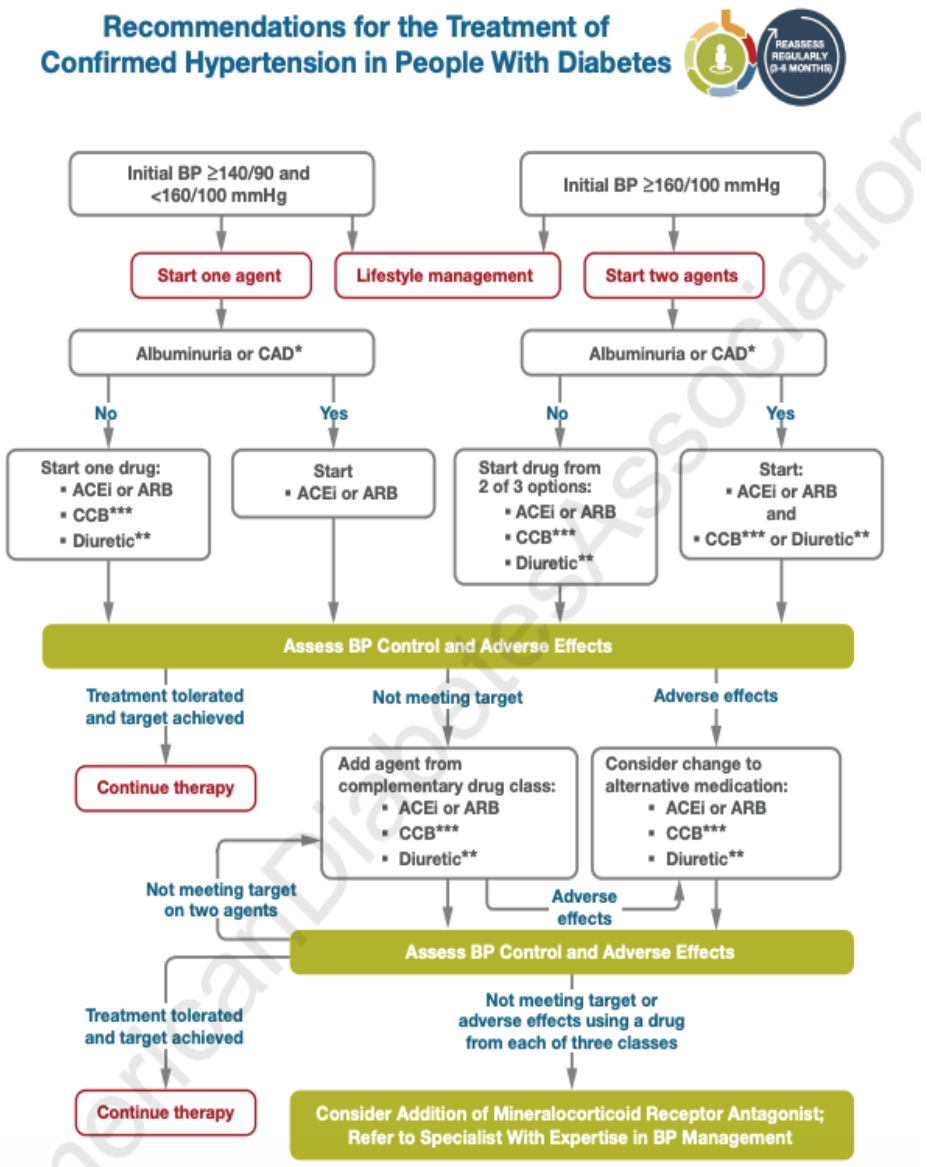
10.1 Blood pressure should be measured at every routine clinical visit. When possible, individuals found to have elevated blood pressure (systolic blood pressure 120–129 mmHg and diastolic <80 mmHg) should have blood pressure confirmed using multiple readings, including measurements on a separate day, to diagnose hypertension. **A** Hypertension is defined as a systolic blood pressure ≥130 mmHg or a diastolic blood pressure ≥80 mmHg based on an average of ≥2 measurements obtained on ≥2 occasions. **A** Individuals with blood pressure ≥180/110 mmHg and cardiovascular disease could be diagnosed with hypertension at a single visit. **E**

10.2 All people with hypertension and diabetes should monitor their blood pressure at home. **A**

- Definición: PAS ≧ 130/80 mmHg (≧ 2 medidas y ≧2 ocasiones) o ≧ 180/110 mmHg (toma aislada)
- AMPA.
- ***Objetivo < 130/80 mmmHg*** (ACC/AHA, Sociedad Europea de HTA y Cardiología)
- *No se recomienda toma de dosis al acostarse*

10.5 In pregnant individuals with diabetes and chronic hypertension, a blood pressure threshold of 140/90 mmHg for initiation or titration of therapy is associated with better pregnancy outcomes than reserving treatment for severe hypertension, with no increase in risk of small-for-gestational age birth weight. **A** There are limited data on the optimal lower limit, but therapy should be lessened for blood pressure <90/60 mmHg. **E** A blood pressure target of 110–135/85 mmHg is suggested in the interest of reducing the risk for accelerated maternal hypertension. **A**

Mujeres embarazadas con DM e HTA
→ **Objetivo PA<140/90 mmHg**



10.8 Individuals with confirmed office-based blood pressure ≥160/100 mmHg should, in addition to lifestyle therapy, have prompt initiation and timely titration of two drugs or a single-pill combination of drugs demonstrated to reduce cardiovascular events in people with diabetes. A

10.11 An ACE inhibitor or angiotensin receptor blocker, at the maximum tolerated dose indicated for blood pressure treatment, is the recommended first-line treatment for hypertension in people with diabetes and urinary albumin-to-creatinine ratio ≥300 mg/g creatinine A or 30–299 mg/g creatinine. B If one class is not tolerated, the other should be substituted. B

Recommendation

10.13 Individuals with hypertension who are not meeting blood pressure targets on three classes of antihypertensive medications (including a diuretic) should be considered for mineralocorticoid receptor antagonist therapy. A

- Fármacos que hayan demostrado reducir ECV en DM y HTA
- IECAS/ARA 2 → 1ª Elección en DM con albuminuria
- Antagonistas receptores mineralcorticoides (ARM) → HTA resistente (3 fármacos incluido un diurético)

Lípidos:

Prevención Primaria

Recommendations

10.18 For people with diabetes aged 40–75 years without atherosclerotic cardiovascular disease, use moderate-intensity statin therapy in addition to lifestyle therapy. **A**

10.20 For people with diabetes aged 40–75 at higher cardiovascular risk, including those with one or more atherosclerotic cardiovascular disease risk factors, it is recommended to use high-intensity statin therapy to reduce LDL cholesterol by ≥50% of baseline and to target an LDL cholesterol goal of <70 mg/dL. **B**

10.21 For people with diabetes aged 40–75 years at higher cardiovascular risk, especially those with multiple atherosclerotic cardiovascular disease risk factors and an LDL cholesterol ≥70 mg/dL, it may be reasonable to add ezetimibe or a PCSK9 inhibitor to maximum tolerated statin therapy. **C**

10.22 In adults with diabetes aged >75 years already on statin therapy, it is reasonable to continue statin treatment. **B**

10.23 In adults with diabetes aged >75 years, it may be reasonable to initiate moderate-intensity statin therapy after discussion of potential benefits and risks. **C**

10.24 Statin therapy is contraindicated in pregnancy. **B**

- DM, 40-75 años, estatina de intensidad moderada + MEV
- DM, 29-39 años con FRCV, puede ser razonable estatina de intensidad moderada + MEV
- DM, 40-75 años, riesgo cv alto por FRCV, estatina de alta potencia con meta de reducción > 50 % y LDL <70mg/dl + MEV

Lípidos:

Prevención Secundaria

Recommendations

10.25 For people of all ages with diabetes and atherosclerotic cardiovascular disease, high-intensity statin therapy should be added to lifestyle therapy. **A**

10.26 For people with diabetes and atherosclerotic cardiovascular disease, treatment with high-intensity statin therapy is recommended to target an LDL cholesterol reduction of ≥50% from baseline and an LDL cholesterol goal of <55 mg/dL. Addition of ezetimibe or a PCSK9 inhibitor with proven benefit in this population is recommended if this goal is not achieved on maximum tolerated statin therapy. **B**

- LDL ≧ 55 mg/dl → Asociar ezetimibe o iPCSK9
- DM, > 75 años, con estatina, continuar Ttto
- DM, > 75 años, puede beneficiarse de estatinas
- Estatinas → Contraindicadas en embarazo

Lípidos:

- TG> 500 → Causas secundarias y considerar Tto para reducir pancreatitis
- TG 175- 499 mg/dl → MEV, Tto obesidad, glucemia, factores secundarios, fármacos
- RCV elevado con LDL controlado pero TG 135- 499 mg/dl → ***Etil de icosapentano***

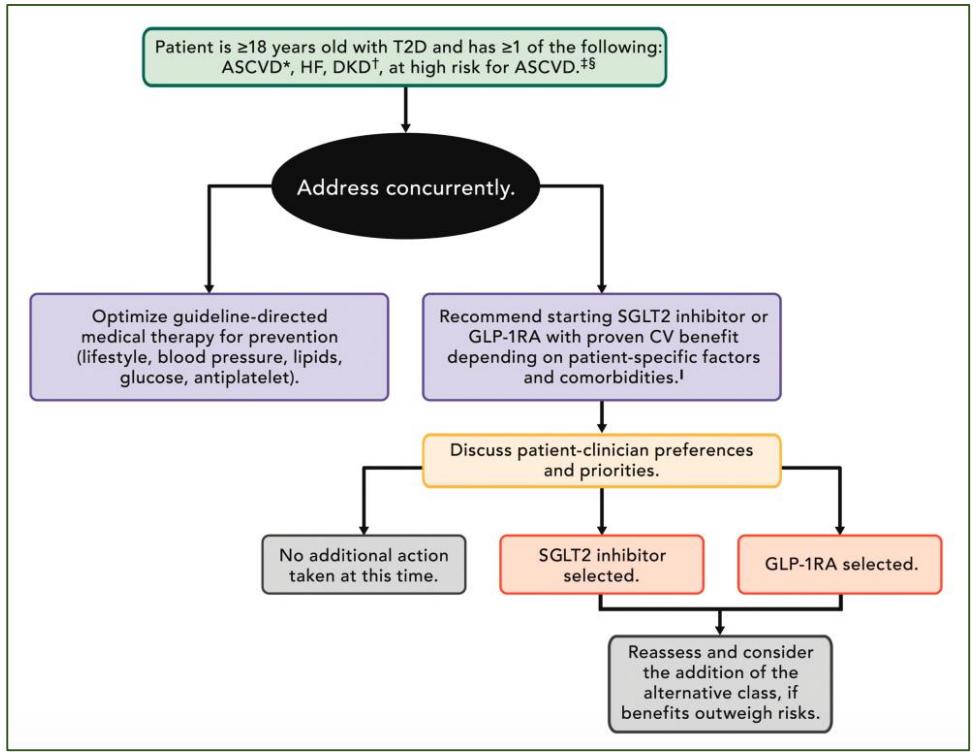
10.30 In individuals with atherosclerotic cardiovascular disease or other cardiovascular risk factors on a statin with controlled LDL cholesterol but elevated triglycerides (135–499 mg/dL), the addition of icosapent ethyl can be considered to reduce cardiovascular risk. **A**

10.31 Statin plus fibrate combination therapy has not been shown to improve atherosclerotic cardiovascular disease outcomes and is generally not recommended. **A**

Antiplaquetarios:

- ✓ AAS → ECV
- ✓ Alternativa → Clopidogrel
- ✓ Inhibición dual por 1 año → Post IAM
- ✓ Uso dual a largo plazo puede considerarse en intervención coronaria, alto riesgo isquémico y bajo riesgo de sangrado
- ✓ AAS + dosis bajas de Rivaroxaban → Enf coronaria estable, EAP, bajo riesgo de sangrado
- ✓ AAS en prevención primaria en riesgo CV elevado valorando riesgo de sangrado

Enfermedad CV:



- En pacientes asintomáticos y en prevención secundaria → no se recomienda el cribado de rutina de la enfermedad coronaria
- En ECVa conocida (EC) → ***IECA/ARA 2***
- ECVa, múltiples FRCV o ERC → ***iSGLT2*** (Reducir riesgo de eventos CV (MACE) y/o hospitalización por IC)
- ECVa establecida, múltiples FRCV de ECVa
  → ***aGLP-1*** *(*reducir riesgo de eventos CV)
  → ***iSGLT2 y aGLP-1*** (reducción de eventos CV y renales)

10.42a In people with type 2 diabetes and established heart failure with either preserved or reduced ejection fraction, a sodium–glucose cotransporter 2 inhibitor with proven benefit in this patient population is recommended to reduce risk of worsening heart failure and cardiovascular death. **A**

10.42b In people with type 2 diabetes and established heart failure with either preserved or reduced ejection fraction, a sodium–glucose cotransporter 2 inhibitor with proven benefit in this patient population is recommended to improve symptoms, physical limitations, and quality of life. **A**

10.43 For people with type 2 diabetes and chronic kidney disease with albuminuria treated with maximum tolerated doses of ACE inhibitor or angiotensin receptor blocker, addition of finerenone is recommended to improve cardiovascular outcomes and reduce the risk of chronic kidney disease progression. **A**

10.45 In people with prior myocardial infarction, β-blockers should be continued for 3 years after the event. **B**

10.46 Treatment of individuals with heart failure with reduced ejection fraction should include a β-blocker with proven cardiovascular outcomes benefit, unless otherwise contraindicated. **A**

- ***ICFER o ICFEP*** → **iSGLT2** con beneficio comprobado para reducir el riesgo de empeoramiento de IC y muerte CV
- ***ICFER o ICFEP*** → ***iSGLT2*** con beneficio comprobado en esta población para mejorar síntomas, limitaciones físicas y calidad de vida
- ***ERC con albuminuria*** tratada con dosis máximas toleradas de IECA o ARA2 → ***Finerenona*** para mejorar resultados CV y reducir el riesgo de progresión a ERC
- ***IAM*** → ***BB*** deben continuarse durante 3 años después del evento. Deben incluirse en Tto de ICFER
- ***ICC estable*** → **Continuar con MET,** si FG >30 ml/mn. Evitar en inestabilidad y hospitalización por IC

11. Chronic Kidney Disease and Risk Management: *Standards of Care in Diabetes—2023*

- Nefropatía diabética establecida → FG y CAC de 1-4 veces al año según estadio de la enfermedad
- IECAS/ARA2 → HTA, DM, CAC 30-299 mg/g, CAC > 300 mg/g y/o FG < 60 ml/mn
- No suspender bloqueo SRAA por incremento ≤ 30% en creatinina en ausencia de depleción volumen.

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/1.73 m^2) Description and range	G1	Normal to high	[illegible]	[illegible]	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+

11. Chronic Kidney Disease and Risk Management: *Standards of Care in Diabetes—2023*

- ***ERC → iSGLT2***
  FG ≧ 20 ml/mn, CAC ≧ 200 mg/g
  FG ≧ 20 ml/mn, CAC < 200 mg/g
  Reducir progresión de la ERC y Eventos CV

- ***Nefropatía diabética →***
  iSGLT2 con FG ≧ 20 ml/mn,
  aGLP-1 o
  Finerenona (FG ≧ 25 ml/mn)
  Reducir el RCV

- ***ERC y albuminuria*** *con riesgo elevado de eventos CV o progresión de la ERC →*
  Finerenona
  Reducir progresión de ERC y eventos CV

11.5a For people with type 2 diabetes and diabetic kidney disease, use of a sodium–glucose cotransporter 2 inhibitor is recommended to reduce chronic kidney disease progression and cardiovascular events in patients with an estimated glomerular filtration rate ≥20 mL/min/1.73 m^2 and urinary albumin ≥200 mg/g creatinine. **A**

11.5b For people with type 2 diabetes and diabetic kidney disease, use of a sodium–glucose cotransporter 2 inhibitor is recommended to reduce chronic kidney disease progression and cardiovascular events in patients with an estimated glomerular filtration rate ≥20 mL/min/1.73 m^2 and urinary albumin ranging from normal to 200 mg/g creatinine. **B**

11.5c In people with type 2 diabetes and diabetic kidney disease, consider use of sodium–glucose cotransporter 2 inhibitors (if estimated glomerular filtration rate is ≥20 mL/min/1.73 m^2), a glucagon-like peptide 1 agonist, or a nonsteroidal mineralocorticoid receptor antagonist (if estimated glomerular filtration rate is ≥25 mL/min/1.73 m^2) additionally for cardiovascular risk reduction. **A**

11.5d In people with chronic kidney disease and albuminuria who are at increased risk for cardiovascular events or chronic kidney disease progression, a nonsteroidal mineralocorticoid receptor antagonist shown to be effective in clinical trials is recommended to reduce chronic kidney disease progression and cardiovascular events. **A**

12. Retinopathy, Neuropathy, and Foot Care: *Standards of Care in Diabetes—2023*

- Optimización de PA y lípidos → Enlentece progresión de neuropatía diabética
- Ttto dolor neuropático → Gabapentinoides, Duloxetina, venlafaxina, desvenlafaxina, antidepresivos tricíclico, lamotrigina, ac valproico…
- ***Pie diabético*** → Evaluación integral de los pies al menos una vez al año para identificar factores de riesgo de úlceras y amputaciones.
- ***Detección inicial de la Enfermedad arterial periférica*** → Evaluación de pulsos, tiempo de llenado capilar, palidez en elevación y tiempo de llenado venoso
- ***ITB*** → Claudicación o pulsos disminuidos o ausentes
- Fumadores, alteraciones sensibilidad o EAP → Especialista en cuidado de pies

12.21 Perform a comprehensive foot evaluation at least annually to identify risk factors for ulcers and amputations. **A**

12.23 Individuals with evidence of sensory loss or prior ulceration or amputation should have their feet inspected at every visit. **A**

12.25 Initial screening for peripheral arterial disease should include assessment of lower-extremity pulses, capillary refill time, rubor on dependency, pallor on elevation, and venous filling time. Individuals with a history of leg fatigue, claudication, and rest pain relieved with dependency or decreased or absent pedal pulses should be referred for ankle–brachial index and for further vascular assessment as appropriate. **B**

13. Older Adults: *Standards of Care in Diabetes—2023*

- Screening de Sd geriátricos (fragilidad,depresión, pollimedicación, incontinencia, deterioro cognitivo..) → autocontrol y calidad de vida.
- ***MCG***
  - DM 1 → Reducir hipoglucemias
  - DM 2 con múltiples dosis de INS → Reducir la variabilidad glucémica e hipoGlu (SU)
- Dispositivos automatizados (bolígrafos) → Reducir hipoGlu

13.3 Screening for early detection of mild cognitive impairment or dementia should be performed for adults 65 years of age or older at the initial visit, annually, and as appropriate. **B**

13.8 Older adults who are otherwise healthy with few coexisting chronic illnesses and intact cognitive function and functional status should have lower glycemic goals (such as A1C <7.0–7.5% [53–58 mmol/mol]), while those with multiple coexisting chronic illnesses, cognitive impairment, or functional dependence should have less-stringent glycemic goals (such as A1C <8.0% [64 mmol/mol]). **C**

- Objetivo glucémico HbA1c <8%
- Desinteficación/Simplificación de Tttos complejos → Reducir hipoGlu y polifarmacia
- Uso de análogos frente a NPH
- iSGLT2 → beneficios similares o mayores

- Cuidados paliativos → Evitar hipo e hiperGlu

13.13 Optimal nutrition and protein intake is recommended for older adults; regular exercise, including aerobic activity, weight-bearing exercise, and/or resistance training, should be encouraged in all older adults who can safely engage in such activities. **B**

12. Retinopathy, Neuropathy, and Foot Care: *Standards of Care in Diabetes—2023*

- Optimización de PA y lípidos → Enlentece progresión de neuropatía diabética
- Ttto dolor neuropático → Gabapentinoides, Duloxetina, venlafaxina, desvenlafaxina, antidepresivos tricíclico, lamotrigina, ac valproico…
- ***Pie diabético*** → Evaluación integral de los pies al menos una vez al año para identificar factores de riesgo de úlceras y amputaciones.
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16. Diabetes Care in the Hospital:
Standards of Care in Diabetes—2023

16.1 Perform an A1C test on all people with diabetes or hyperglycemia (blood glucose >140 mg/dL [7.8 mmol/L]) admitted to the hospital if not performed in the prior 3 months. **B**

16.2 Insulin should be administered using validated written or computerized protocols that allow for predefined adjustments in the insulin dosage based on glycemic fluctuations. **B**

- Iniciar ≧ 180 mg/dl
- Objetivo 140-180 mg/dl
- Plan al alta adaptado e individualizado

16.4 Insulin therapy should be initiated for the treatment of persistent hyperglycemia starting at a threshold ≥180 mg/dL (10.0 mmol/L) (checked on two occasions). Once insulin therapy is started, a target glucose range of 140–180 mg/dL (7.8–10.0 mmol/L) is recommended for most critically ill and noncritically ill patients. **A**

16.11 A structured discharge plan should be tailored to the individual with diabetes. **B**

Gracias

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