Basics of Diabetes Care

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Division of General Internal Medicine

Session objectives

- Describe guidelines for diabetes screening and diagnosis

- Apply concepts of the decision cycle for patient-centered glycemic management in type 2 diabetes

- Outline the comprehensive medical evaluation of the patient with diabetes

- Identify factors that lead to therapeutic inertia

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True or False?

Non-white race or ethnicity is a risk factor for diabetes.

True or False?

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TRUE

Who should I test for diabetes or prediabetes?

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

1. Testing should be considered in overweight or obese (BMI $\geq$25 kg/m^2 or $\geq$23 kg/m^2 in Asian Americans) adults who have one or more of the following risk factors:
   - First-degree relative with diabetes
   - High-risk race/ethnicity (e.g., African American, Latino, Native American, Asian American, Pacific Islander)
   - History of CVD
   - Hypertension ($\geq$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)
   - Women with polycystic ovary syndrome
   - Physical inactivity
   - Other clinical conditions associated with insulin resistance (e.g., severe obesity, acanthosis nigricans)
2. Patients with prediabetes (A1C $\geq$5.7% [39 mmol/mol], IGT, or IFG) should be tested yearly.
3. Women who were diagnosed with GDM should have lifelong testing at least every 3 years.
4. For all other patients, testing should begin at age 45 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.

CVD, cardiovascular disease; GDM, gestational diabetes mellitus.

Select one.

What is the next step if a patient's fasting glucose is 122 mg/dl and HbA1c is 6.8%?

a. No further testing needed
b. Repeat fasting glucose
c. Repeat HbA1c
d. Order oral glucose tolerance test (OGTT)

Select one.

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Diagnosing diabetes & prediabetes

	Normal	Prediabetes	Diabetes
Fasting glucose	<100 mg/dl	100-125 mg/dl	≥126 mg/dl
HbA1c	<5.7%	5.7-6.4%	≥6.5%
2-hr OGTT glucose	<140 mg/dl	140-199 mg/dl	≥200 mg/dl
Random glucose	n/a	n/a	≥200 + sxs

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Select one.

Which of the following is the best advice you can provide on the After Visit Summary?

a. Losing weight will help you control your diabetes.
b. Follow up in the office in 3 months so that we can discuss your success with weight loss.
c. Avoid dietary indiscretions to control your diabetes.
d. We discussed your physical activity goal: 15 minutes of brisk walking 5 days each week.

Select one.
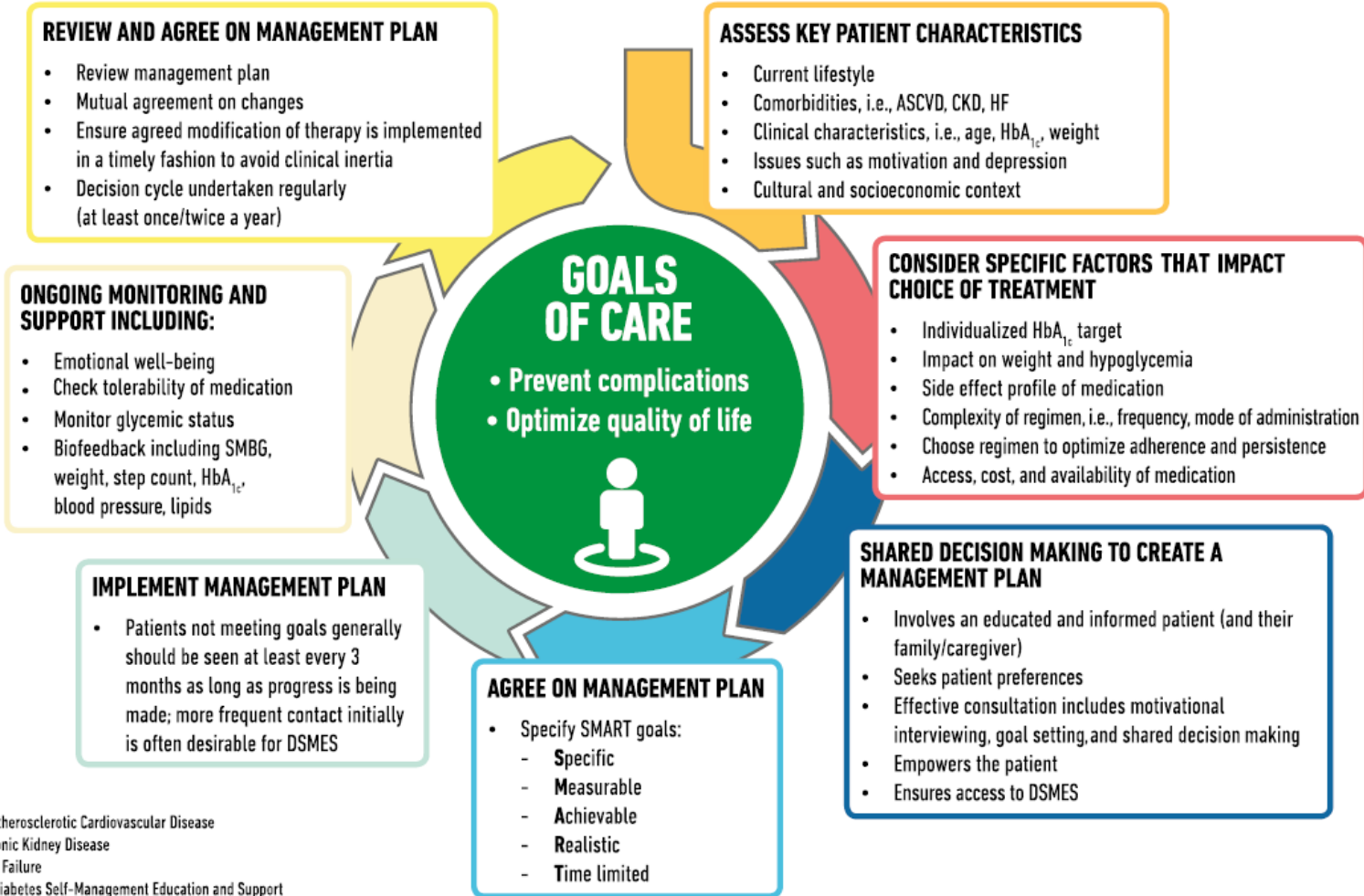
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REVIEW AND AGREE ON MANAGEMENT PLAN

- Review management plan
- Mutual agreement on changes
- Ensure agreed modification of therapy is implemented in a timely fashion to avoid clinical inertia
- Decision cycle undertaken regularly (at least once/twice a year)

ASSESS KEY PATIENT CHARACTERISTICS

- Current lifestyle
- Comorbidities, i.e., ASCVD, CKD, HF
- Clinical characteristics, i.e., age, HbA$_{1c}$, weight
- Issues such as motivation and depression
- Cultural and socioeconomic context

ONGOING MONITORING AND SUPPORT INCLUDING:

- Emotional well-being
- Check tolerability of medication
- Monitor glycemic status
- Biofeedback including SMBG, weight, step count, HbA$_{1c}$, blood pressure, lipids

CONSIDER SPECIFIC FACTORS THAT IMPACT CHOICE OF TREATMENT

- Individualized HbA$_{1c}$ target
- Impact on weight and hypoglycemia
- Side effect profile of medication
- Complexity of regimen, i.e., frequency, mode of administration
- Choose regimen to optimize adherence and persistence
- Access, cost, and availability of medication

GOALS OF CARE

- Prevent complications
- Optimize quality of life

IMPLEMENT MANAGEMENT PLAN

- Patients not meeting goals generally should be seen at least every 3 months as long as progress is being made; more frequent contact initially is often desirable for DSMES

AGREE ON MANAGEMENT PLAN

- Specify SMART goals:
  - **S**pecific
  - **M**easurable
  - **A**chievable
  - **R**ealistic
  - **T**ime limited

SHARED DECISION MAKING TO CREATE A MANAGEMENT PLAN

- Involves an educated and informed patient (and their family/caregiver)
- Seeks patient preferences
- Effective consultation includes motivational interviewing, goal setting, and shared decision making
- Empowers the patient
- Ensures access to DSMES

ASCVD = Atherosclerotic Cardiovascular Disease
CKD = Chronic Kidney Disease
HF = Heart Failure
DSMES = Diabetes Self-Management Education and Support
SMBG = Self-Monitored Blood Glucose

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A word about language

"Noncompliance" and "nonadherence" imply that the patient with diabetes is <u>passive</u> or obedient.
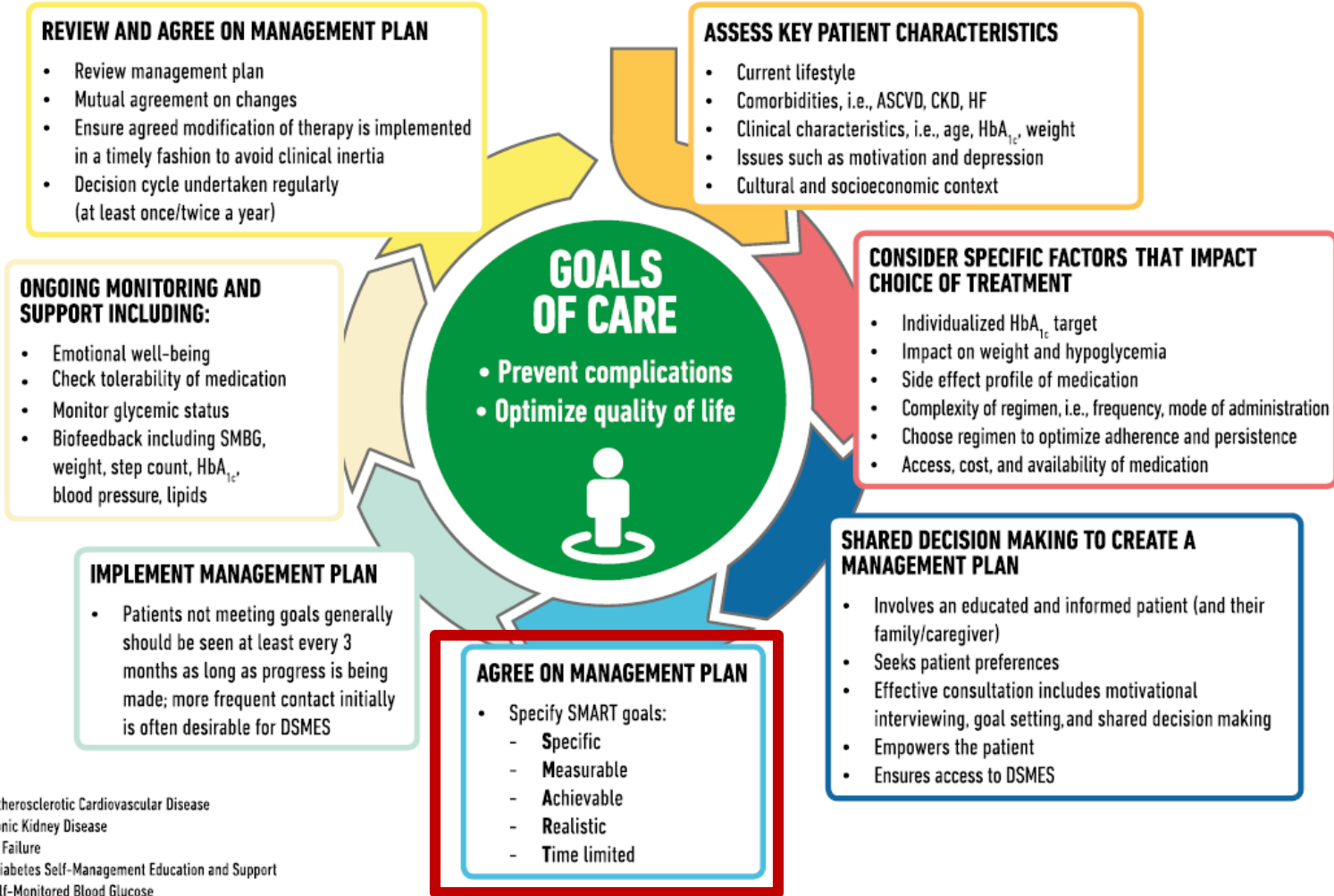
But people with diabetes take an <u>active</u> role in decision-making, planning, monitoring, evaluation, and problem-solving.

Use language that is

1. Neutral and based on facts, actions, or biology.
2. Free from stigma.
3. Strengths-based, respectful, inclusive, imparts hope.
4. Fosters collaboration between patients and providers.
5. Is person-centered.

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M E D I C I N E

Negative Language	Replacement Language
Patient is non-compliant.	She takes her insulin when she can afford it.
Diabetes is poorly-controlled.	Hemoglobin A1c is 9.5%, and our goal is less than 8.0%.
Patient is a diabetic.	Ms. Smith has diabetes.
You need to eat a better diet.	What kinds of things do you think you could to improve your diet?
Patient refused insulin.	Mr. Smith declines starting insulin at this time.
Patient is unwilling to take insulin.	Ms. Smith is concerned about starting insulin because of weight gain.
Patient failed metformin.	Patient was unable to tolerate metformin because of side effects.

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SMART Goals

- Specific

- Measurable

- Achievable

- Realistic

- Time-limited

Use SMART goals

Not SMART	SMART
A healthy diet is important.	One of the dietary changes that we discussed is that you will try to bring your lunch to work each day.
Exercise will help improve your diabetes.	We have set a goal for you to start walking 15 minutes each day at least 3 days per week.
Remembering to take your medications will lower your HbA1c.	Your HbA1c was 7.3%. We discussed setting a timer for the PM dose of metformin; this should help us to get to your HbA1c goal of <7%.
Weight loss is important for diabetes.	We discussed that you will try to lose 5 pounds by your next appointment in 3 mo.

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The comprehensive medical exam

- Medical history
- Lifestyle factors
- Medications/vaccinations
- Technology use
- Behavioral and self-management skills
- Physical exam
- Laboratory evaluation

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True or False?

Hypoglycemia is a normal part of taking insulin or a sulfonylurea.

True or False?

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FALSE

Hypoglycemia

Table 6.4—Classification of hypoglycemia

	Glycemic criteria/description
Level 1	Glucose <70 mg/dL (3.9 mmol/L) and ≥54 mg/dL (3.0 mmol/L)
Level 2	Glucose <54 mg/dL (3.0 mmol/L)
Level 3	A severe event characterized by altered mental and/or physical status requiring assistance for treatment of hypoglycemia

Reprinted from Agiostratidou et al. (51).

Why <70 mg/dl?

- Threshold for the neuroendocrine response to glucose
- Impaired counterregulatory responses and hypoglycemia unawareness

Hypoglycemia assessment in those at risk

- Awareness

- Frequency

- Causes

- Timing of episodes

Symptoms of hypoglycemia

- Shakiness
- Irritations
- Confusion
- Tachycardia
- Hunger

Hypoglycemia treatment

- Fast-acting carbohydrates
  - Pure glucose (avoid fat/protein)
- Glucagon
  - If unable to take carbohydrate

Hypoglycemia prevention

- Monitoring - SMBG and/or CGM
- Counseling and referral
- Medication adjustments
- Remember prior triggers
- Delayed meals
- Exercise
- Alcohol consumption

The comprehensive medical exam

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- Lifestyle factors
- Medications/vaccinations
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Hepatitis B vaccine in diabetes

- Recommended for persons <60 years of age

- Consider for adults ≥60 years of age

- People with diabetes have higher rates of hepatitis B
  - May be due to improper equipment use

Select one.

Which of the following factors are associated with being more likely to take diabetes medications?

a. Patient being new to therapy
b. Younger patient age
c. Prescription of medication by endocrinologist
d. Receipt of medications by mail

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Medication-taking behavior

- Patients with diabetes are on a lot of medications that may be changing

- Use non-judgmental language

- Be specific

- Consider medication-taking behavior before changing medications

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Therapeutic inertia in diabetes

"failure of health care providers to initiate or escalate therapy when indicated"

- Suggested by prior research
  - Providers don't change therapy
  - HbA1c is not improving in the US despite advances in therapeutics

Systems & therapeutic inertia

- Varied formularies
- Formulary changes
- Individual vs. population health approach
- Lack of good decision support

Clinicians & therapeutic inertia

- Lack of time
- Lack of resources
- Lack of knowledge and/or training
- Perceptions of how patients will receive recommendations
- Concerns about hypoglycemia
- Patient co-morbid conditions

Patients & therapeutic inertia

- Perceptions of medication effectiveness
- Cost/coverage
- Side effects
- Concerns about hypoglycemia
- Regimen burden
- Weight gain

Key points

- Most of our patients probably meet criteria for diabetes screening

- Use of language is important

- Some of diabetes care may be algorithmic, but it is part of a cycle

- Don't forget about hypoglycemia and medication-taking behavior

- Therapeutic inertia is real and important

References

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