

# Time Well Spent: Treating Obesity and Diabetes



This activity is supported by an educational grant from Lilly.



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# Activity Overview



## Target Audience

This activity is intended for physicians, physician associates, nurse practitioners, and nurses, involved in the care of patients with both T2D and obesity.

## Educational Objectives

After completing this activity, the participant should be better able to:

- Utilize three evidence-based screening metrics beyond HbA1C (OGTT, GV, TIR) to assess whether to initiate or intensify T2D therapy, with consideration of obesity as a comorbidity.
- Determine the chronicity of obesity as a comorbidity and the importance of its timely management to mitigate risk of long-term complications in T2D.
- Select the most appropriate therapy for an individual patient with T2D and obesity with consideration of the latest safety and efficacy data of GLP-1 RAs and dual GLP-1/GIP RAs and ADA/EASD Consensus Statements.
- Identify patient- and disease- appropriate goals for the long-term management of weight loss and T2D related complications utilizing shared decision-making approaches and patient-reported outcomes



A large, weathered wooden barn with a prominent red metal roof stands in a lush green field. The scene is captured during a dramatic sunset, with the sky filled with vibrant orange, yellow, and dark blue clouds. The barn's wooden siding is dark and aged, and a wooden fence runs along its base. The overall mood is serene and contemplative.

# Reframing How We Approach T2D Management in Primary Care: Making Time to Address Obesity in Your Busy Practice



# T2D Disease Staging



## Staging exists in many diseases:

- T1D
- Heart Failure
- Hypertension
- Dyslipidemia
- Chronic kidney disease
- Cancer

## Potential staging for type 2 diabetes based on the scientific evidence

Stage	Fasting glucose	HbA1c
Stage 1 (Prediabetes)	100-109 mg/dl	5.7-5.9%
Stage 2 (Early diabetes)	110-125 mg/dl	6.0-6.4%
Stage 3	≥126 mg/dl	≥6.5%

### **Redefining fasting glucose of 100-125 mg/dl AND HbA1c of 6.0-6.4% as early diabetes allows for:**

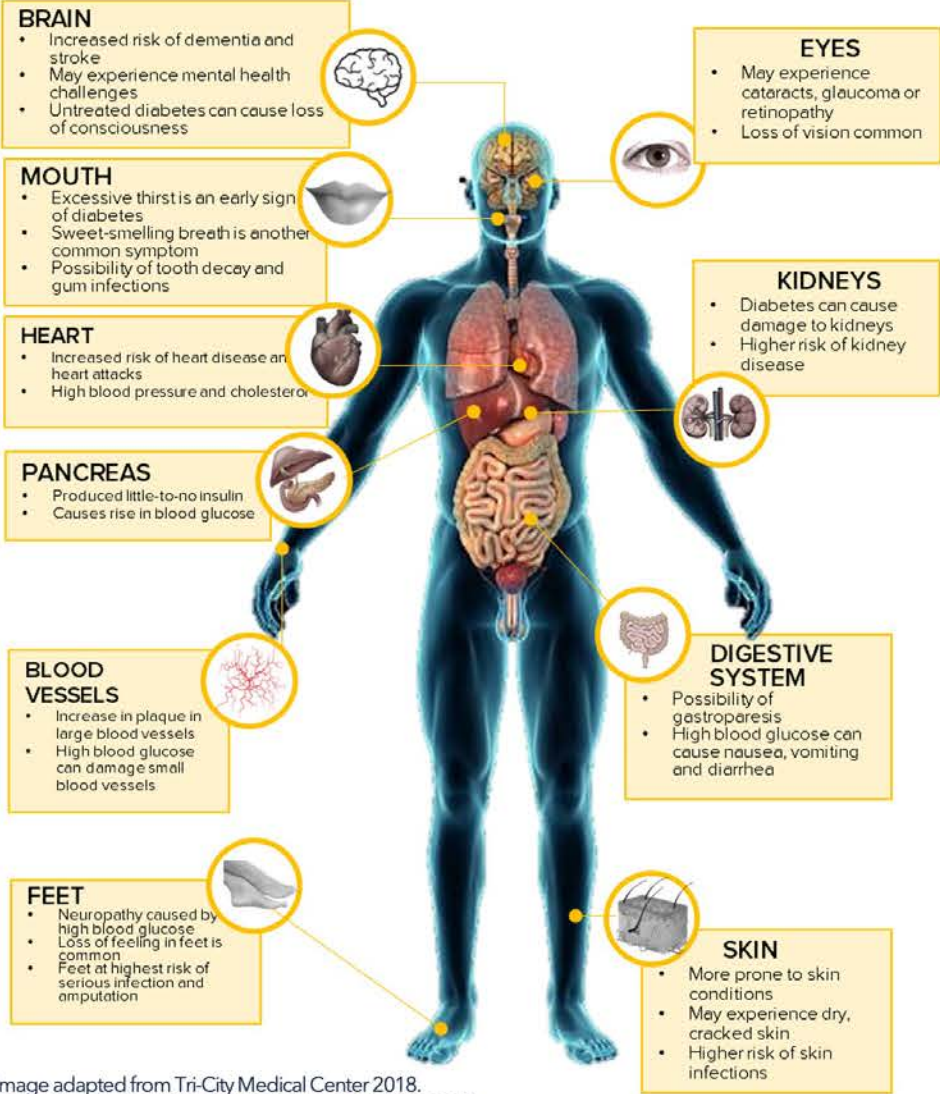
1. Appropriate access to resources for these individuals who are at greater risk for complications related to hyperglycemia
2. Timely intervention on the part of patients and providers to avoid progression

1. 83rd Annual American Diabetes Association Scientific Session, presented by Kevin Miller, DO

2. Miller E, Polonsky WH, Miller K. What Role Might There Be for Continuous Glucose Monitoring in the Assessment of Diabetes Risk? *Diabetes Technol Ther.* 2023 Jun;25(S3):S14-S20



# Comorbidities Among Patients with T2D



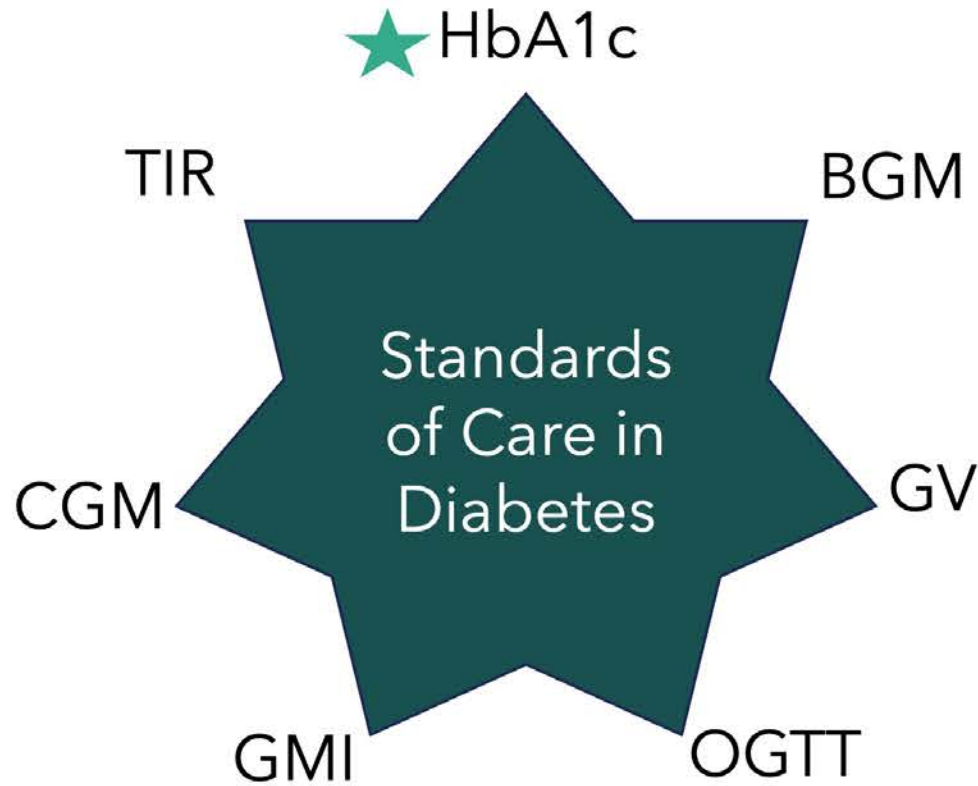
....80-90% have overweight or obesity

Image adapted from Tri-City Medical Center 2018.

- Nowakowska M et al. *BMC Med* **17**, 145 (2019).
- Fang M et al. *Ann Intern Med*. Published online February 14, 2023. doi:10.7326/M22-3078.



# Evidence-Based Glucose Control Screening Metrics



## HbA1c Limitations

- Measurement variability
- Discrepancies between true mean blood glucose levels in certain racial/ethnic groups and conditions that alter erythrocyte turnover
- Does not account for hemoglobin variants
- Does not measure glycemic variability or hypoglycemia

BGM, blood glucose monitoring; CGM, continuous glucose monitoring; GMI, glucose management indicator; GV, glycemic variability; OGTT, oral glucose tolerance test; TIR, time in range.  
1. ElSayed NA et al. *Diabetes Care* 2023;46(Supplement\_1):S111-S127. 2. Davies MJ et al. *Diabetes Care* 2022;45(11):2753-278. 3. Suh S & Kim JH. *Diabetes Metab J*. 2015;39(4):273-282. 4. ADA. 2023. <https://diabetes.org/diabetes/a1c/diagnosis>. 5. Bergenstal RM et al. *Diabetes Care* 2018;41(11):2275-2280.



# Addition of CGM as a Risk Assessment & Risk Reduction Tool



Accurate risk assessment tools determine who is at greatest risk to progress from prediabetes to diabetes



Addresses inaccuracies of HbA1c that vary between minorities and some disease states



Allows real-time glucose monitoring through fluctuations for the presence and severity of dysglycemia



Provides individualized lifestyle data allowing for patients to participate in their own health improvement




# T2D Control and Mitigation of Long-Term Complications



## Macrovascular Complications


- Coronary artery disease
- Peripheral arterial disease
- Stroke

 Individuals with T2D have 2- to 3-fold greater risk of CV events compared to those without diabetes

 CVD is responsible for ~80% of mortality associated with T2D

## Microvascular Complications

- Diabetic nephropathy
- Neuropathy
- Retinopathy

 Improvement in glycemic, blood pressure, and lipid control

 Novel anti-diabetes therapies in earlier stages





# Management of Hyperglycemia in Type 2 Diabetes, 2022. A Consensus Report by the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD)

*Diabetes Care* 2022;45:2753–2786 | <https://doi.org/10.2337/dci22-0034>



Melanie J. Davies,<sup>1,2</sup> Vanita R. Aroda,<sup>3</sup>  
Billy S. Collins,<sup>4</sup> Robert A. Gabbay,<sup>5</sup>  
Jennifer Green,<sup>6</sup> Nisa M. Maruthur,<sup>7</sup>  
Sylvia E. Rosas,<sup>8</sup> Stefano Del Prato,<sup>9</sup>  
Chantal Mathieu,<sup>10</sup>  
Geltrude Mingrone,<sup>11,12,13</sup>  
Peter Rossing,<sup>14,15</sup> Tsvetalina Tankova,<sup>16</sup>  
Apostolos Tsapas,<sup>17,18</sup> and John B. Buse<sup>19</sup>

**The American Diabetes Association and the European Association for the Study of Diabetes convened a panel to update the previous consensus statements on the management of hyperglycemia in type 2 diabetes in adults, published since 2006 and last updated in 2019. The target audience is the full spectrum of the professional health care team providing diabetes care in the U.S. and Europe. A systematic examination of publications since 2018 informed new recommendations. These include additional focus on social determinants of health, the health care system, and physical activity behaviors, including sleep. There is a greater emphasis on weight management as part of the holistic approach to diabetes management. The results of cardiovascular and kidney outcomes trials involving sodium–glucose cotransporter 2 inhibitors and glucagon-like peptide 1 receptor agonists, including assessment of subgroups, inform broader recommendations for cardiorenal protection in people with diabetes at high risk of cardiorenal disease. After a summary listing of consensus recommendations, practical tips for implementation are provided.**



# ADA/EASD T2D Treatment Initiation and Intensification Recommendations



## Treatment Initiation

The use of a GLP-1 RA should be considered prior to the initiation of insulin

The most common side effects tend to occur during initiation and diminish over time

## Treatment Intensification

Most patients will require intensification of glucose-lowering medications, some require medication reduction or discontinuation if treatment is ineffective or associated with side effects



Timely re-assessment of individual glycemic targets and their achievement at regular intervals is imperative



# ADA/EASD T2D Treatment Initiation and Intensification Recommendations



Beware of clinical inertia when managing T2D:  
Failure to initiate or intensify therapy

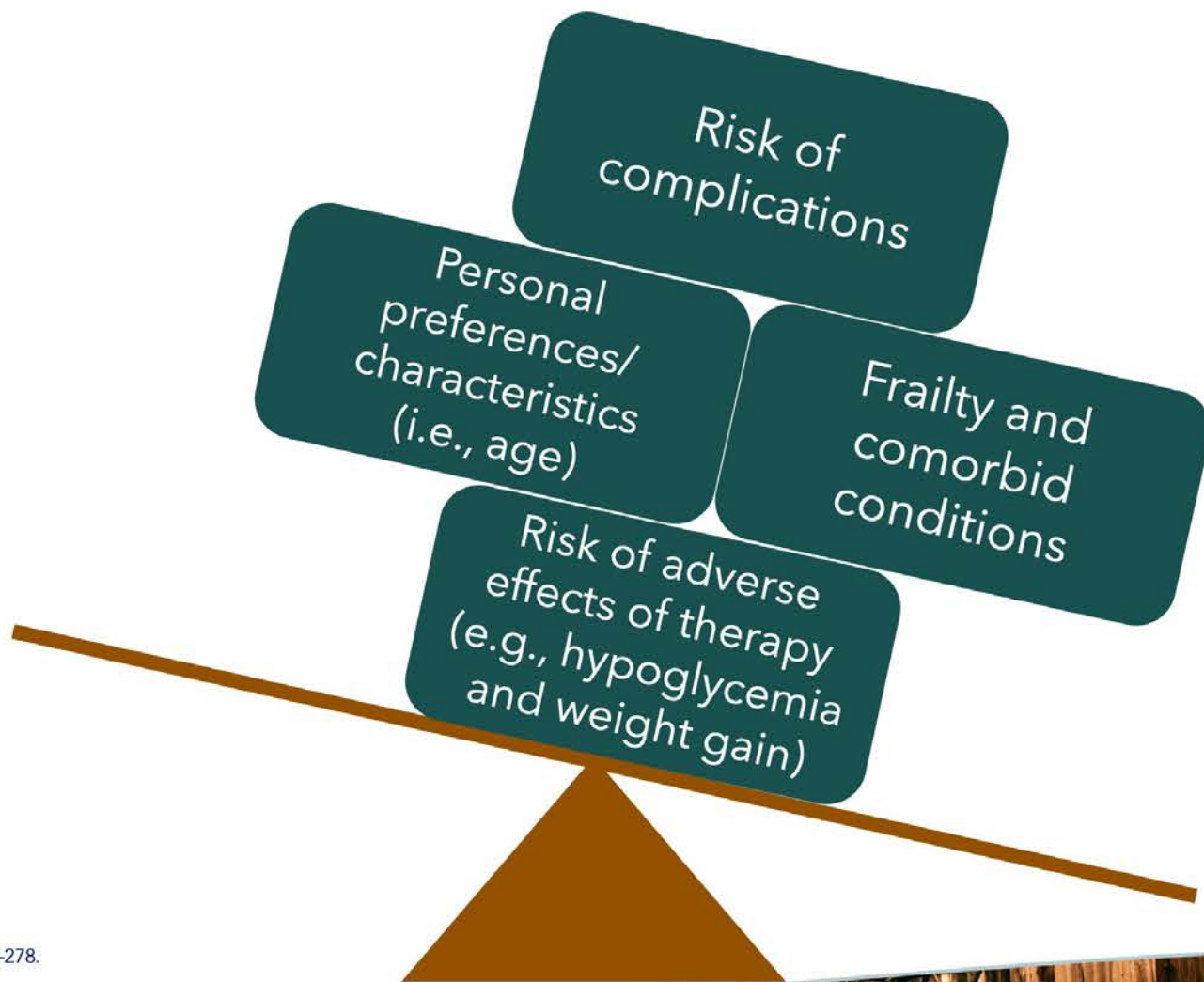
## Strategies to avoid clinical inertia



- Create a patient management plan
- Agree and implement changes in a timely manner
- Re-evaluate management plan every 6 to 12 months
- Involve interdisciplinary team members in care



# Glycemic Treatment Targets

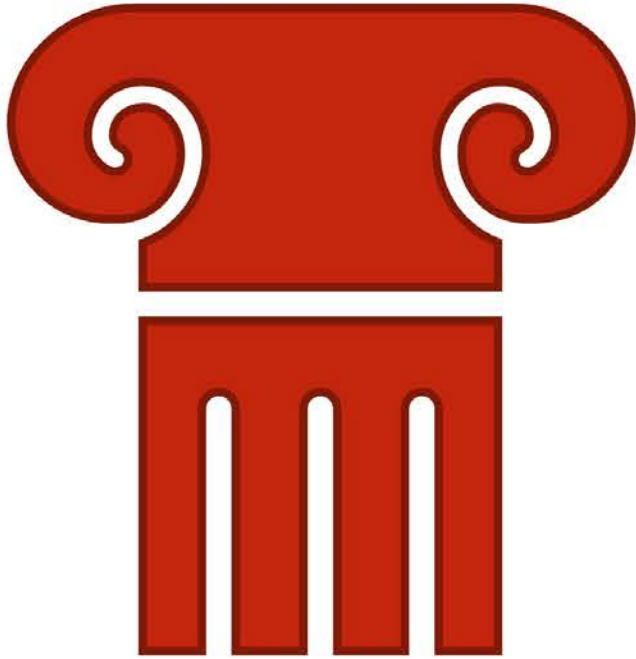




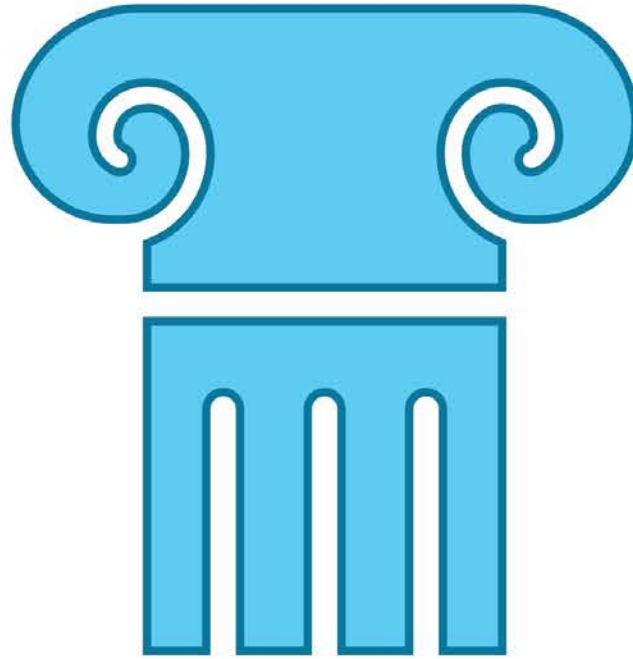
# Pillars of Diabetes Management



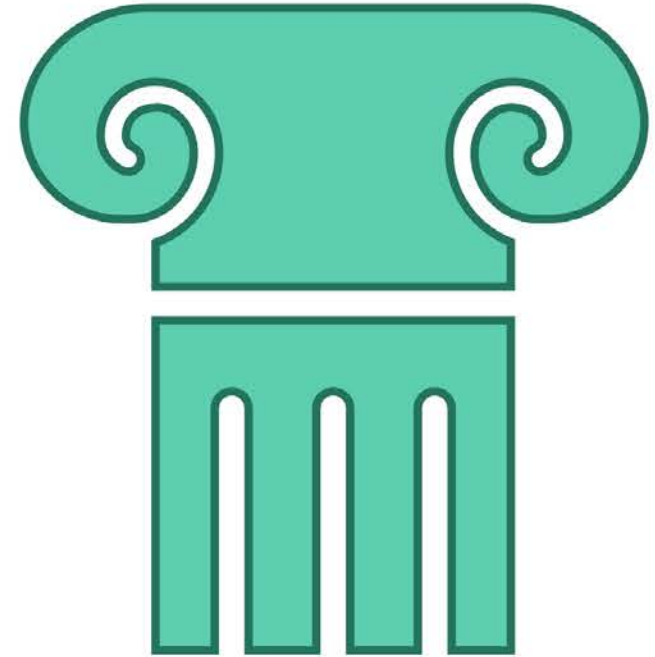
**Diet**



**Exercise**



**Medication**



**Glycemic Control**



# T2D and the Complication of Obesity are a Dual Public Health Crisis



## National Diabetes Statistics Report 2022



37.3 million people (11.3% of the U.S. population) with diabetes



28.7 million people (28.5 million adults) with diagnosed diabetes



8.5 million people (25.0% of adults) are undiagnosed



27.7% were overweight (BMI of 25.0 to 29.9 kg/m<sup>2</sup>)



45.8% had obesity (BMI of 30.0 to 39.9 kg/m<sup>2</sup>)



16.2% had extreme obesity (BMI of 40.0 kg/m<sup>2</sup> or higher)

49.4% had an A1C value of 7.0% or higher

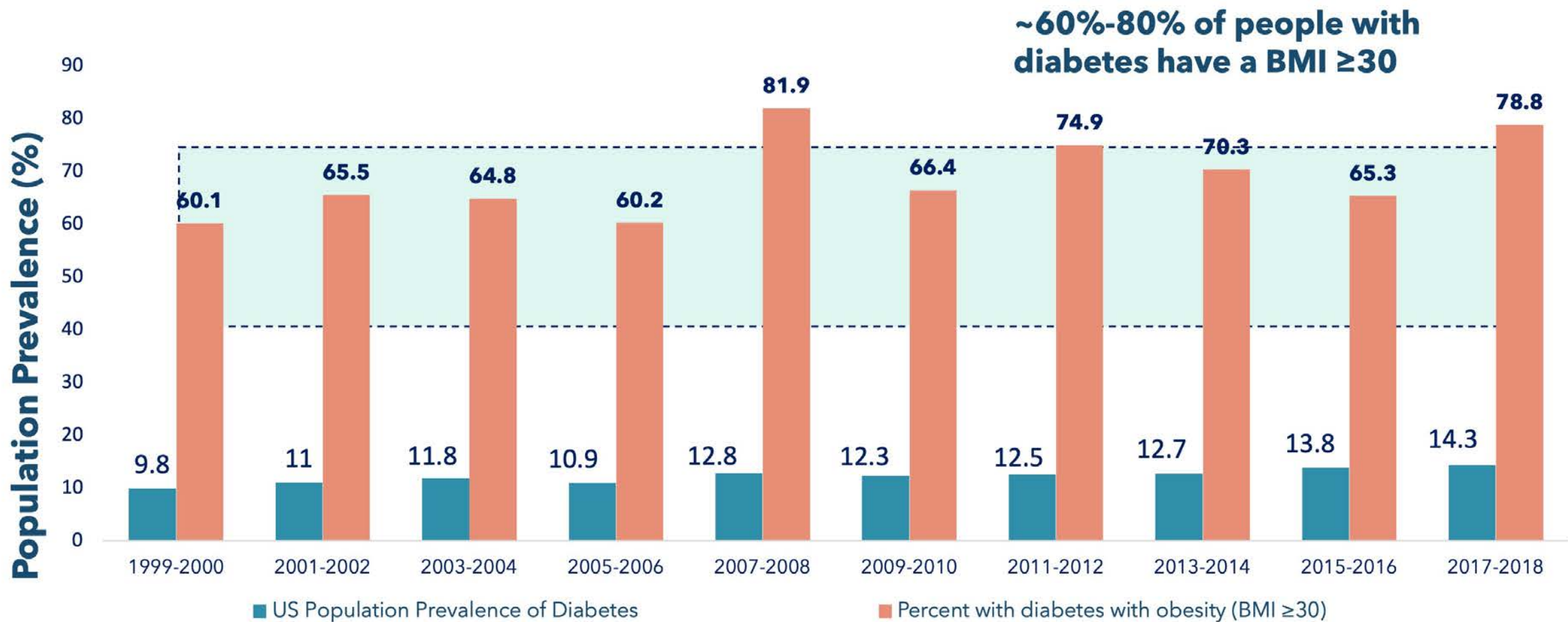
34.3% were physically inactive, getting less than 10 minutes a week of moderate or vigorous activity



# Percentage of People with Diabetes who have Coexisting Obesity



National Health and Nutrition Examination Survey 1999-2018





Wang L, et al. JAMA. 2021. Hales CM, et al. NCHS Data Brief. 2020.



# Impact of Physical Behaviors on Cardiometabolic Health in People with T2D



		Glucose/insulin	Blood pressure	HbA <sub>1c</sub>	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	↓	?	↓	?	?	↓	?

↑ Higher levels/improvement (physical function, quality of life); ↓ Lower levels/improvement (glucose/insulin, blood pressure, HbA<sub>1c</sub>, lipids, depression); ? no data available;  
 ↑ Green arrows = strong evidence; ↑ Yellow arrows = medium strength evidence; ↑ Red arrows = limited evidence.



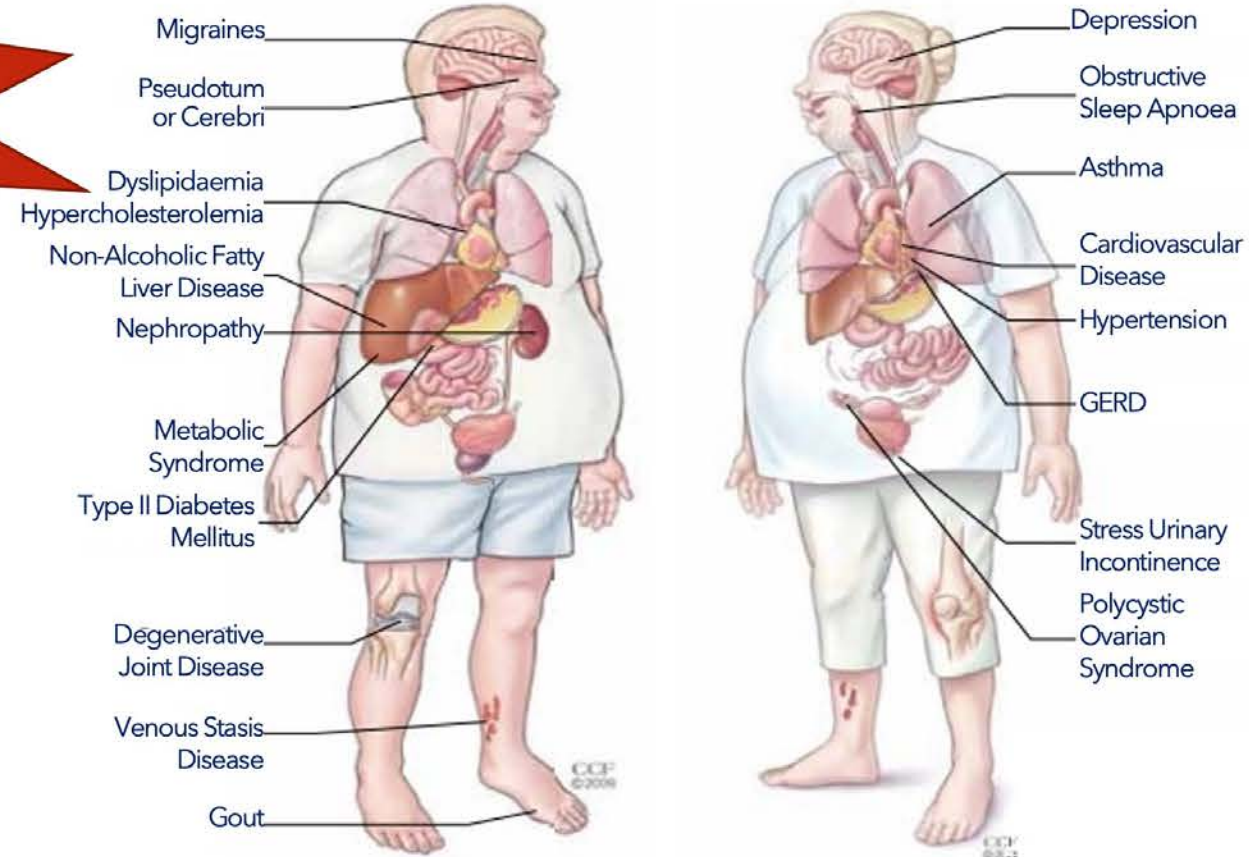
# Burden and Undertreatment of Obesity



55% of adults with obesity reported receiving a diagnosis of obesity

24% of adults with obesity had further contact with a clinician for weight-related conversation

- Prevalence of obesity has tripled since 1975
- Significant negative impact on quality of life
- Substantial increase in national medical expenditures
- Obesity-related comorbidities addressed in primary care, but obesity itself is frequently undertreated



Adapted from Cleveland Clinic Center for Medical Art & Photography

1. Tucker S, et al. Curr Obes Rep. 2021;10(3):396-408. 2. Afshin A, et al. N Engl J Med. 2017;377(1):13-27. 3. Biener A, et al. Clin Chem. 2018;64(1):108-117. 4. Tucker S, et al. Curr Obes Rep. 2021;10(3):396-408. 5. Kaplan L, et al. Obesity (Silver Spring). 2018;26(1):61-69.



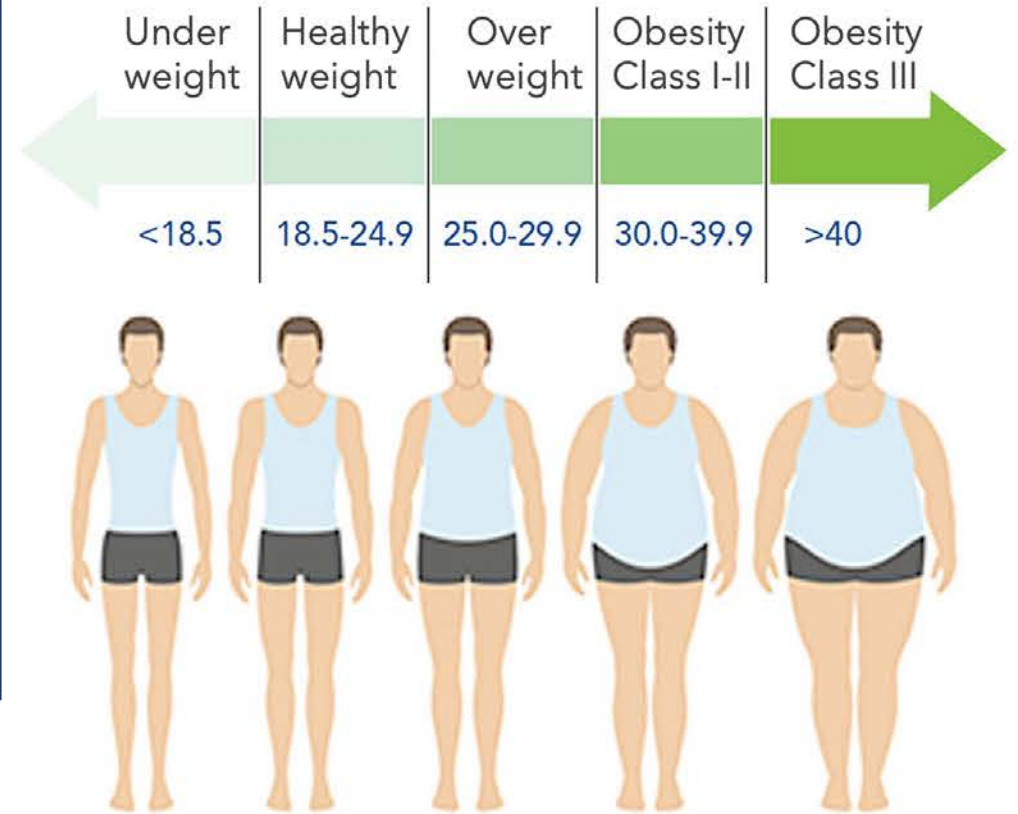
# Body Mass Index (BMI)



BMI is generally accepted as the first step to determine the degree of overweight and obesity.

It is a practical and useful determinant for increased risk of morbidity and mortality on the population level but less so on the individual level.

## Weight Categories Based on BMI





# Classification of Overweight/Obesity by BMI



## Waist Circumference and Associated Disease Risks

Disease Risk Relative to Normal Weight and Waist Circumference

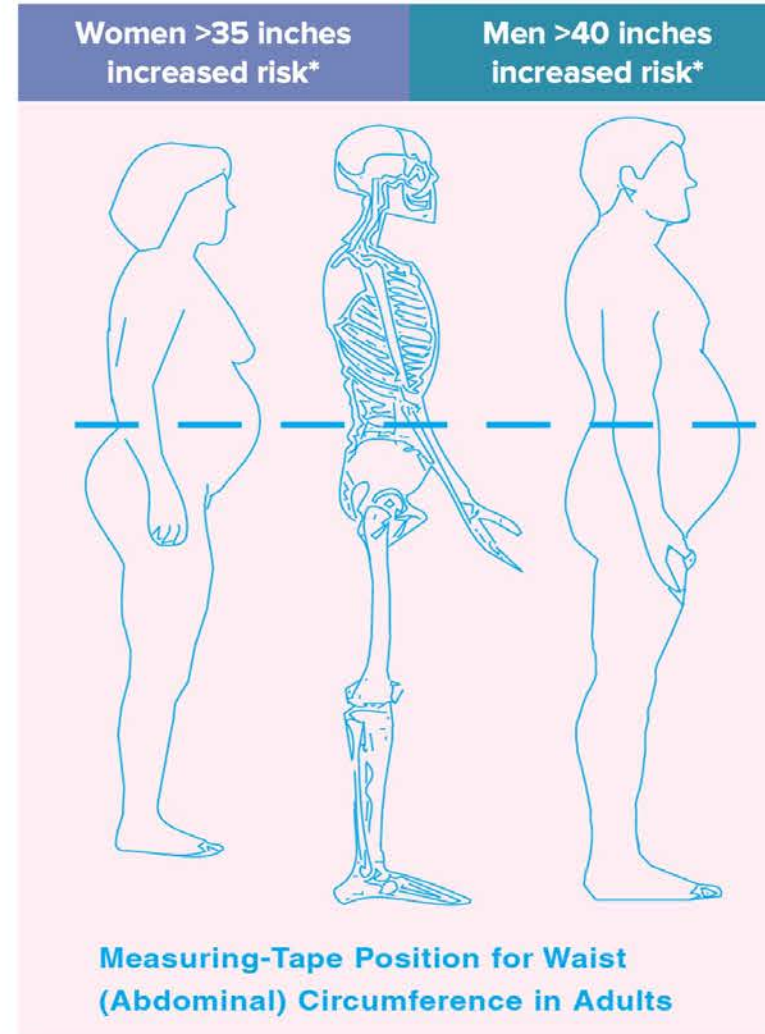
	BMI (kg/m <sup>2</sup> )	Men (≤102 cm) ≤40 in Women (≤88 cm) ≤35 in	Men (>102 cm) >40 in Women (>88 cm) >35 in
<b>Underweight</b>	<18.5		
<b>Normal</b>	18.5-24.9		
<b>Overweight</b>	25.0-29.9	Increased	High
<b>Obesity Class I</b>	30.0-34.9	High	Very High
<b>Obesity Class II</b>	35.0-39.9	Very High	Very High
<b>Obesity Class III</b>	≥40	Extremely High	Extremely High



# How to Measure Waist Circumference



- Locate upper hip bone and top of right iliac crest
- Place measuring tape in horizontal plane around abdomen at iliac crest
- Ensure tape is snug, but does not compress the skin
- Tape should be parallel to the floor
- Record measurement at the end of a normal expiration



\*Ethnic/age-related differences affect predictive validity of WC as surrogate for abdominal fat



# Diagnosing T2D and Overweight/Obesity in the Rural Practice Setting



Compared to urban areas, rural areas experience ~17% higher diabetes prevalence rate

The prevalence of obesity is ~23% in rural settings versus 20.5% in urban settings

## Strategies to Improve Care in Rural Settings

- Telemedicine
- Community health workers
- In home education sessions
- Group classes



# ADA/EASD Recommendations for Weight Reduction Among Patients with T2D



Weight loss of 5-15% should be a primary target in management for many people living with T2D

Weight loss may exert benefits that extend beyond glycemic management to improve risk factors for cardiometabolic disease and QOL



Greater weight loss results in better outcomes



5-10% loss leads to metabolic improvement



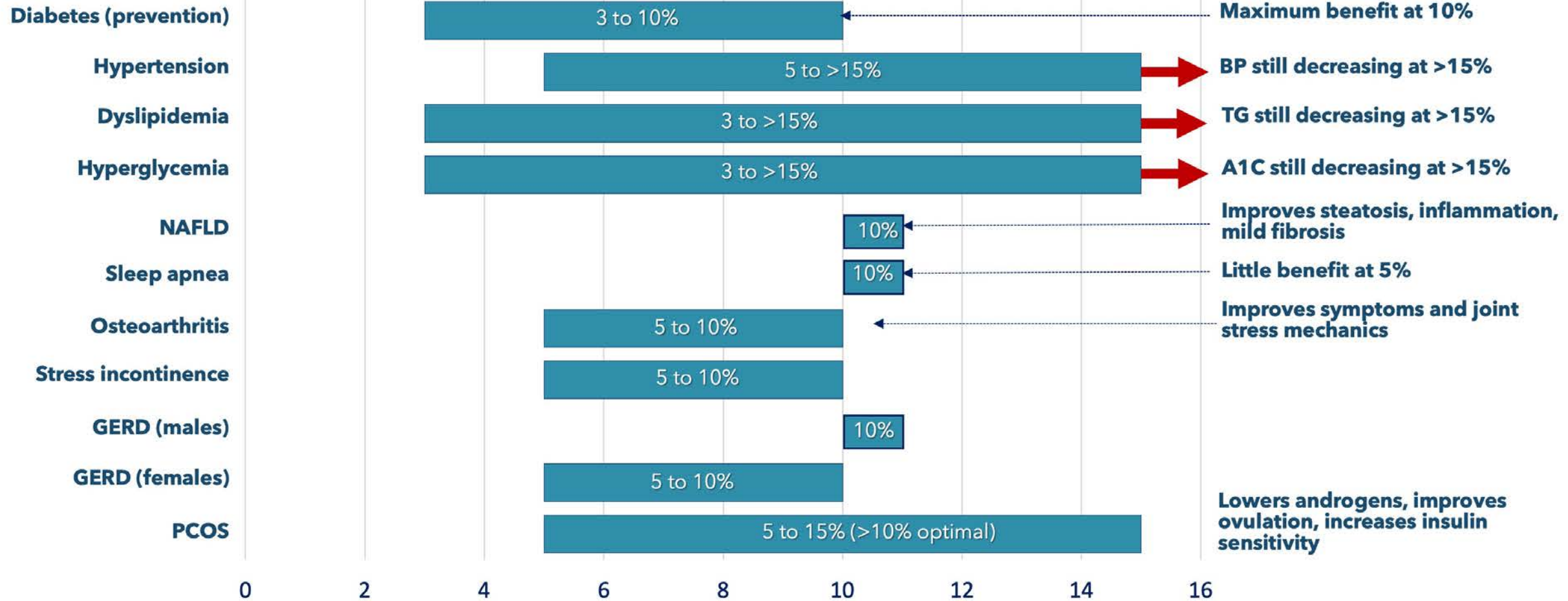
$\geq 10-15\%$  loss of body weight can have a disease-modifying effect, leading to diabetes remission



# Treating the Obesity: Therapeutic Weight Loss Reduces Complications



Weight loss required for therapeutic benefit (%)



GERD, gastroesophageal reflux disease; NAFLD, nonalcoholic fatty liver disease; PCOS, polycystic ovary syndrome. Cefalu WT, et al. Diabetes Care. 2015.



# Case Study: Ms. Gonzales



35-year-old woman is at your office for follow-up of T2D diagnosis



On Exam	Recent Labs	Medications
<b>Weight:</b> 175 lbs <b>Height:</b> 66" <b>WC:</b> 33.3" <b>BMI:</b> 28 <b>BP:</b> 124/80 mmHg <b>HR:</b> 77/min <b>Cardiac exam:</b> normal	<b>Glucose:</b> 180 mg/dL <b>A1C:</b> 7.5% <b>TC:</b> 200 mg/dL <b>LDL-C:</b> 112 mg/dL <b>HDL-C:</b> 50 mg/dL <b>TG:</b> 148 mg/dL <b>eGFR:</b> >60 mL/min/1.73m <sup>2</sup>	Metformin Clonazepam

Previous conversation regarding T2D and overweight to be discussed further at today's visit

A1C, glycated hemoglobin; BMI, body mass index; BP, blood pressure; eGFR, estimated glomerular filtration rate; HDL-C, high-density lipoprotein cholesterol; HR = heart rate; LDL-C, low-density lipoprotein cholesterol; TG, triglycerides; WC, waist circumference.



# Using Person-first Language

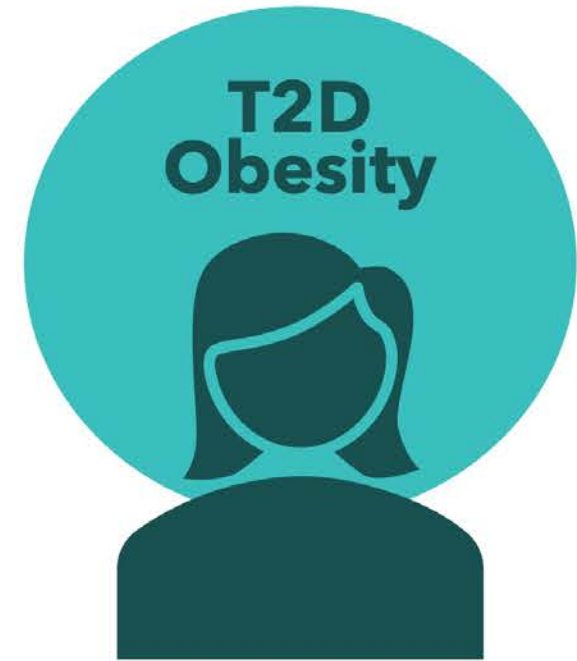


## DO

- Neutral, free of stigma, and based on facts
- Strength-based, encourage what is working
- Respectful and inclusive
- Collaborative
- Person-centered

## DO NOT

- Refer to patients as “diabetics”
- Describe patients as “noncompliant”
- Blame patients for their health condition



**“Patient living with T2D”**  
Person *before* the disease

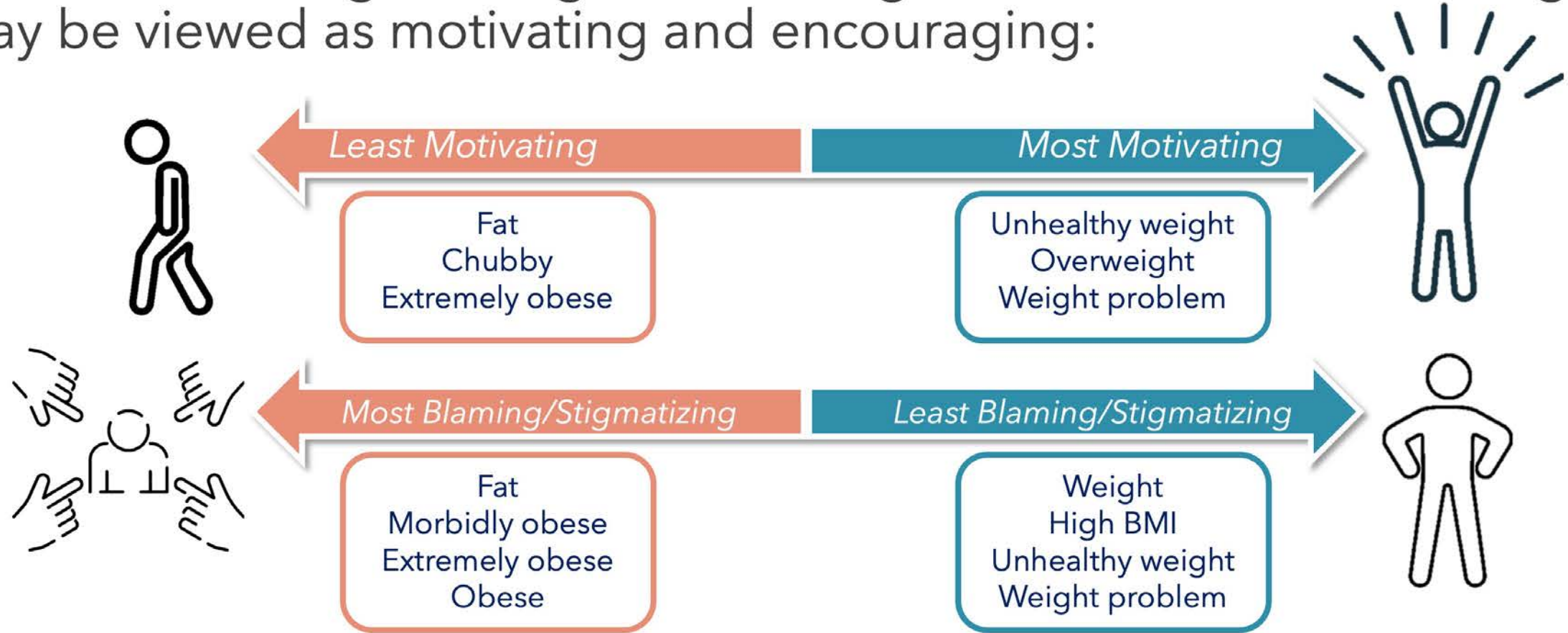
1. Davies MJ et al. *Diabetes Care* 2022;45(11):2753-278.  
2. Dickinson JK et al. *Diabetes Care* 2017;40:1790-1799.



# Preferred Terms to Discussing Obesity



Certain words to describe body weight may be perceived by patients to be stigmatizing and blaming, whereas other terminology may be viewed as motivating and encouraging:





# Be Aware of Unconscious Bias



**Strategies and considerations when speaking to patients with T2D and obesity**

**Focus on health,** rather than weight

Consider that patients may have previously **experienced T2D/weight bias from providers**

Provide continuous, **non-judgmental feedback** on progress

Recognize that many patients have **tried to lose weight repeatedly**

Recognize that T2D and obesity has many factors; many are **outside of the person's control**

Explore **all causes** of the patient's presenting problems

Discuss and identify achievable, **sustainable goals** for your patient



# The 5 A's Approach for Obesity









- Increases initiation and engagement of obesity intervention
- Patients report higher motivation to lose weight





# Assisting Patients Who Have BMI $\geq 25$ kg/m<sup>2</sup> with Lifestyle Modifications



-  Modifications in lifestyle should be encouraged for all patients for whom weight loss is recommended who are also motivated to lose weight
-  Lifestyle modifications are meant to foster behaviors that can be maintained for life
-  Modifications should combine health eating, physical activity, and behavioral therapy
-  Consider the modifications more than a diet and that nutrition counseling is imperative to success
-  Lifestyle modifications are meant to foster behaviors that can be maintained for life
-  Intensive behavioral therapy, such as smoking cessation, may require multiple attempts

Obesity interventions typically result in early rapid weight loss followed by a weight plateau and progressive regain



# Health Equity in T2D Care



## Health Disparities

Characteristics historically linked to discrimination or exclusion



 T2D affects racial/ethnic minority and low-income adult populations in the U.S. disproportionately

 Social and environmental factors (SDOH) account for 50-60% of health outcomes

 SDOH should be used as intervention targets in achieving health equity

Geographic location

Religion

Socioeconomic status

Sex

Age

Mental health

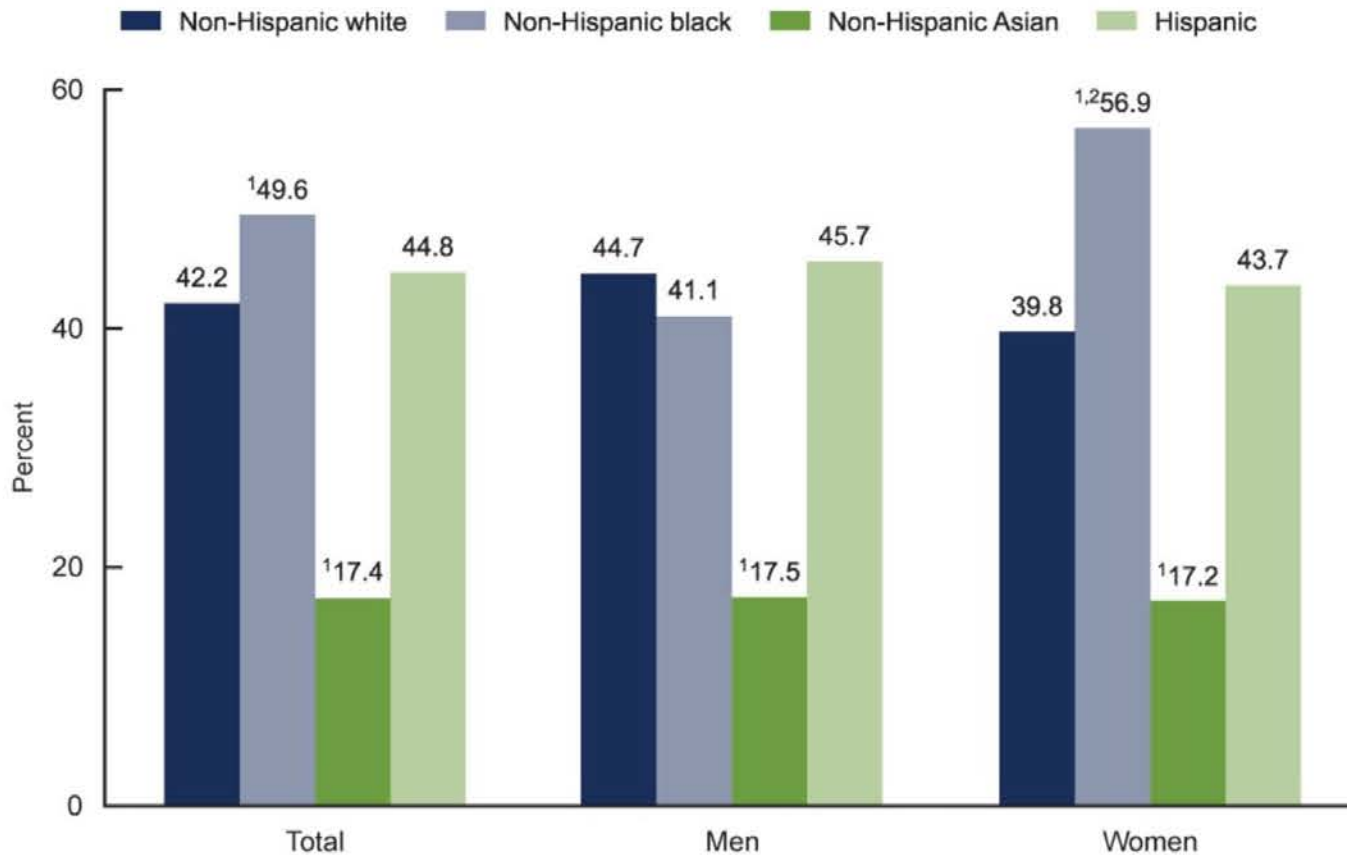
Racial or ethnic group

Sexual orientation or gender

Cognitive, sensory, or physical disability



# Burden of Obesity and SDOH



- In individuals with incomes just above the FPL, the adult obesity rate was 42.6%, vs 29.7% in people with income levels  $\geq 400\%$  of the FPL
- Adult obesity rate was 35.6% in adults who had less than a high school education, but only 22.7% in college graduates
- YRBS data indicated that obesity rates were highest in American Indian/Alaska Native, Black and Latino students, and in students who identified as gay, lesbian or bisexual

FPL, federal poverty level; SDOH, social determinants of health; YRBS, Youth Risk Behavior Surveillance System. National Center for Health Statistics, National Health and Nutrition Examination Survey, 2017-2018. <https://www.niddk.nih.gov/health-information/health-statistics/overweight-obesity#:~:text=More%20than%20%20in%20%20non-Hispanic%20white%20adults,1%20in%20%20Hispanic%20adults%20%2844.8%25%29%20have%20obesity..>



# Attitudes of Obesity by PCPs and Patients



## PCP Attitudes

More than 50% of physicians viewed patients with obesity as awkward, unattractive, ugly, and noncompliant

The treatment of obesity was rated as significantly less effective than therapies for 9 of 10 chronic conditions

Most respondents agreed in the benefit in 10% reduction of body weight

More than one-half (54%) would spend more time working on weight management issues if their time was reimbursed appropriately

## PCP Attitudes

Physicians are common sources of stigma. In a study that surveyed more than 2,400 adult women about their experiences of weight bias, 69 percent of respondents reported that physicians were a source of weight bias, and 52 percent reported they had been stigmatized by a doctor on multiple occasions

Doctors were the second most frequent source of bias reported, out of a list of more than 20 possible sources of weight stigma

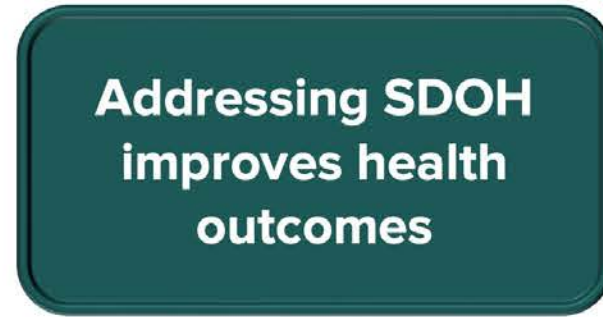


# Social Determinants of Health



## Socioeconomic status

- Education
- Income
- Occupation



## Living and working conditions

## Sociopolitical context

- Shared cultural values
- Practices
- Experiences

## Multisector domains

- Housing
- Education
- Criminal justice system

## Sociocultural context

- Shared cultural values
- Practices
- Experiences

## Psychosocial factors

- Environmental
- Social
- Behavioral
- Emotional



# Healthy People 2030 and Diabetes



## Increase the proportion of people with diabetes who get formal diabetes education - D-06

Status: Little or no detectable change 

[Learn more about our data release schedule](#)



Most Recent Data:  
**55.1** percent  
(2019) \*



Target:  
**55.2** percent \*



Desired Direction:  
**Increase desired**



Baseline:  
**51.7** percent of adults aged 18 years and over with diagnosed diabetes ever had received formal diabetes self-management education and support (DSME) in 2017 \*

\* Age adjusted to the year 2000 standard population.



# Healthy People 2030 and Diabetes



## Increase the proportion of adults whose health care provider checked their understanding - HC/HIT-01

Status: Little or no detectable change 

[Learn more about our data release schedule](#)



Most Recent Data:  
**25.6** percent (2019)



Target:  
**32.2** percent



Desired Direction:  
**Increase desired**



Baseline:  
**26.6** percent of adults aged 18 years and over reported that a health care provider asked them to describe how they will follow instructions in 2017



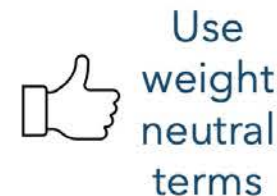
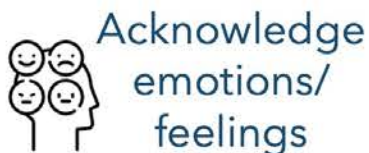
# Considerations for Shared Decision-making



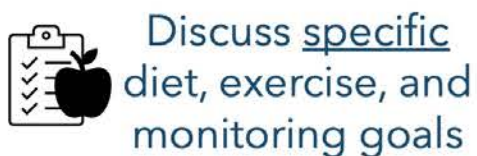
## Gather Information



## Establish Relationship



## Education and Counseling





# Shared Decision Making in T2D and Obesity



## Benefits of SDM

- Considers patient's preferences and values to create a personalized management plan
- Improves decision quality
- Informs patient regarding treatment risks, safety, and benefits

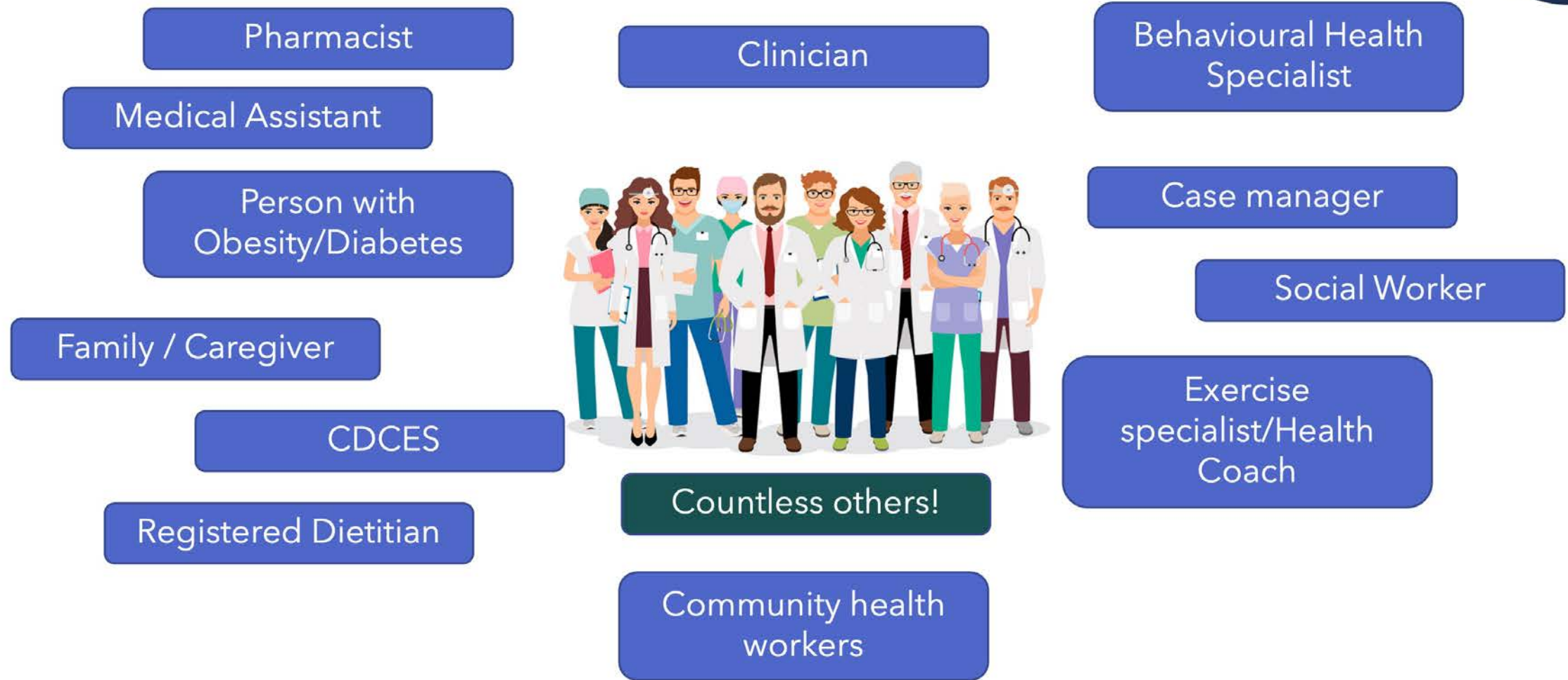


Supports individual autonomy by empowering patients to make decisions about the treatment and care that is right for them at that time





# Value of Interdisciplinary Teams in T2D Management





# How to Build and Locate Your Team Members



**Google maps to locate service providers geographically close to you**



**Drop off business cards and be receptive to receiving them from others near you for referrals**



**Be familiar with community events, make sure to attend, and participate in advertising their activities**



**Look for opportunities to identify those in your area that provide diabetes education through ADA or ADCES websites**



**Visit the local hospital's diabetes education department and introduce yourself**



**Identify a diabetes champion in your practice setting**



# Importance of Collaborative Care



Spreads  
the  
workload

Helps eliminate  
or at least  
address "inertia"  
on many levels  
of care  
intervention

Places emphasis and  
importance of diabetes  
care management as a  
stand-alone appointment  
workload

Places emphasis  
and importance of  
diabetes care  
management as a  
stand-alone  
appointment  
workload

Communicates  
importance of  
person with  
diabetes as a  
central part of  
the care team



# Finding ADA DSMES



Find a DSMES program near you

American Diabetes Association | DiabetesPro

All types Search

Awards Clinical Corner **Diabetes Education** Research & Grants CE & Events Membership Scientific Sessions

- Education Recognition Program
- Listing of Recognized Education Programs
- Continuing Education Opportunities
- Ask the ERP Experts Monthly Q/A Webinar Schedule & Recordings
- New! 2022 11th Edition Quality Coordinator Guide
- Diabetes Care and Education Specialist Resources
- Professional Education Portal
- Recognition Requirements
- Patient Education Library
- DPP Express

American Diabetes Association | DiabetesPro

All types Search

Awards Clinical Corner **Diabetes Education** Research & Grants CE & Events Membership Scientific Sessions

## ERP Listing

Search Recognized Education Programs by zip code or [filter by state](#).

Enter a search area and 5 digit zip code and click apply to search.

Search

25 Miles from

Pediatric  DPP  Spanish  Telemedicine  Mental Health Trained

Apply Reset

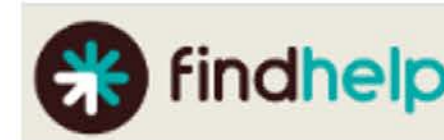
Professional.Diabetes.org/erp\_list\_zip.



# Additional Resources



- SDOH resources
- SDOH overview, related research and tools
  - [cdc.gov/socialdeterminants](https://www.cdc.gov/socialdeterminants)
- Food assistance, help paying bills, and other free or reduced cost programs, including COVID-19 programs
  - [findhelp.org](https://www.findhelp.org)
- American Academy of Family Physicians (AAFP) Toolkit
  - [www.aafp.org/everyone](https://www.aafp.org/everyone):
- Prescription savings resources
- American Association of Clinical Endocrinology (AACE)
  - [prescriptionhelp.aace.com](https://www.prescriptionhelp.aace.com)
- Association of Diabetes Care and Education Specialists (ADCES)
  - [www.diabeteseducator.org/affordability](https://www.diabeteseducator.org/affordability)
- Mental health resources
- American Diabetes Association (ADA) provider directory
  - [professional.diabetes.org/mhp\\_listing](https://professional.diabetes.org/mhp_listing)
- ADCES
  - [www.diabeteseducator.org/mentalhealth](https://www.diabeteseducator.org/mentalhealth)





# Additional Resources

- Local Level community and County
  - Health Care Provider Colleagues
  - Public Health Departments
  - Community Centers and Religious Organizations
- State Level
  - Rural Health Organizations
  - Governmental Health Committees and Legislation Support
  - Insurance Payor Boards
- National
  - Health Governing Bodies: ADA, ADCES, ABOM, ACD
  - Non-profit Organizations: DPP, Diabetes Leadership Council

