



YOUR GO-TO GUIDE FOR UNDERSTANDING THE LINK BETWEEN **DIABETES AND OBESITY**



 Lower
Weight of Diabetes

Not a real patient. The images of person depicted are for illustration purposes only

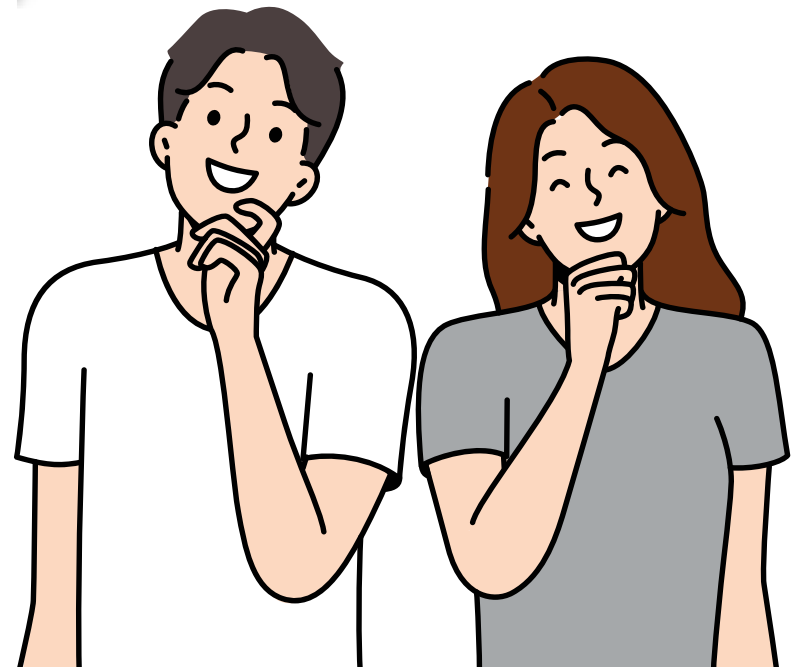




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Diabetes and Obesity: The Connection

DEFINING DIABETES AND OBESITY



In Type 2 diabetes, your body may not produce enough insulin, or does not respond to it, as it should.¹

People with type 2 diabetes may experience an impaired response to incretins, the hormones that help regulate blood sugar.²



Obesity is a chronic progressive disease that requires long-term management and is defined as excess accumulation of adipose tissue to an extent that impairs both physical and psychosocial health and well-being.¹

Abbreviations: GLP 1- RA, Glucagon-like Peptide-1 Receptor Agonist
References: 1. Al-Goblan AS et al. Diabetes Metab Syndr Obes. 2014;7:587-91.
2. Kim W, Egan JM. Pharmacol Rev. 2008;60:470-512.

THE CONNECTION: TYPE 2 DIABETES AND OBESITY

The common factor in both T2DM and obesity are linked to insulin resistance.¹



Almost **8/10** PwD live with obesity or are overweight.¹



There is a **7X** increased risk of mortality in PwD who live with obesity or are overweight.²



T2DM: Type 2 diabetes mellitus, PwD: Patients with diabetes

References:

1. Borgharkar SS et al. BMJ Open Diabetes Res Care. 2019 Jul 14;7(1):e000654.

2. Oldridge NB et al. J Clin Epidemiol. 2001 Sep;54(9):928-34

Know your BMI



CALCULATING THE BODY MASS INDEX



How can you calculate your BMI?

The following formula can be used to calculate one's BMI, where kg is the person's weight in kilograms and m² is their height in meters, squared.

$$\text{BMI (Kg/m}^2\text{)} = \text{Weight (kg)} / [\text{Height (m)}]^2$$

Classification	BMI
Underweight	≤ 18.5
Normal weight	18.6 - 22.9
Overweight	23.0 - 24.9
Obesity class 1	25.0 - 29.9
Obesity class 2	30.0 - 34.9
Obesity class 3	> 35

Scan to
check your BMI









References:

1. Weir CB. In: StatPearls [Internet] 2022 Jun 27 [cited 2022 Nov 7]. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK541070/>
2. S V M, et al. Indian J Endocrinol Metab. 2022 Jul-Aug;26(4):295-318. [KIWR]

Complications of #WeightOfDiabetes



OBESITY IN PwD INCREASES RISK OF SEVERAL COMORBIDITIES SUCH AS:

-  Kidney diseases¹
-  Cancer²
-  Eye disease³
-  Depression⁴
-  Obstructive sleep apnoea
(sleep-related breathing problems)⁵
-  Mobility⁶

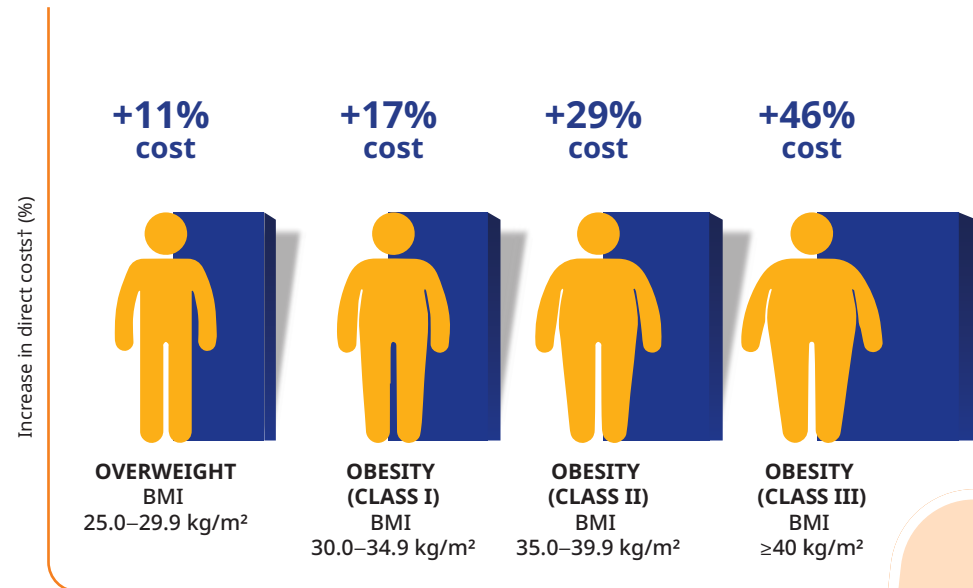
T2DM: Type 2 diabetes mellitus

References:

1. Hsu et al. Ann Intern Med 2006;144(1):21-8.
2. Kim DS, Scherer PE. Obesity, Diabetes, and Increased Cancer Progression. Diabetes Metab J. 2021 Nov;45(6):799-812. doi: 10.4093/dmj.202.0077. Epub 2021 Nov 22. PMID: 34847640; PMCID: PMC8640143.
3. Li W, Gong X, Wang W, et al Association of different kinds of obesity with diabetic retinopathy in patients with type 2 diabetesBMJ Open 2022;12:e056332. doi:10.1136/bmjopen-2021-056332
4. González-Castro TB, Escobar-Chan YM, Fresan A, et al. Higher risk of depression in individuals with type 2 diabetes and obesity: Results of a meta-analysis. Journal of Health Psychology. 2021;26(9):1404-1419. doi:10.1177/1359105319876326
5. Foster et al. Diabetes Care 2009;32(6):1017-9.
6. Oldridge et al. J Clin Epidemiol 2001;54(9):928-34

INCREASED WEIGHT LEADS TO INCREASED COST

In patients suffering from diabetes, when there is an increase in weight or BMI, costs* spent on medical care also increases:¹



Increase in body weight leading to incremental direct costs in patients with T2DM^{1*}

*Costs for the emergency room, inpatient, and outpatient services, plus pharmacy dispensing.
 BMI: Body mass index; T2DM: Type 2 diabetes mellitus
 Reference:
 1. Li et al. Pharmacoeconomics 2015 Jul;33(7):735-4

IMPACT OF EXCESS WEIGHT ON DIABETES

The association between BMI and diabetes is approximately directly linked.¹

Even a **5%** weight loss helps improve^{2,3}



The function of the pancreas, an organ in your body that releases glucose



Sensitivity of different organs like liver and muscle to insulin



Additional weight loss and improved HbA1c levels also reduce the risk of the heart and eye diseases



BMI: Body mass index; HbA1c: Glycated haemoglobin
 1. Feldman AL, Griffin SJ, Ahern AL, et al. Impact of weight maintenance and loss on diabetes risk and burden: A population-based study in 33,184 participants. BMC Public Health. 2017;17(1):170.
 2. Wilding JP. The importance of weight management in type 2 diabetes mellitus. Int J Clin Pract. 2014;68(6):682-91. 3. Franz MJ. Weight management: Obesity to diabetes. Diabetes Spectr. 2017;30(3):149-53.

**Lower the #WeightOfDiabetes
Talk to your Doctor**



FOR THE NEXT APPOINTMENT WITH YOUR DOCTOR, BE SURE TO FILL THIS FORM

Complete your report and share your diabetes and weight-loss history with your healthcare provider.

This form includes



Key life events



Current weight-loss efforts



Tips for talking to a healthcare provider

Start the Quiz

1. When were you first diagnosed with diabetes?

2. What is your current weight?

3. How old are you now?

4. How tall are you?

5. How would you rate your health in general?

Poor Fair Good Very good Excellent

6. How motivated are you to lose weight from the scale of 1 – 5, 1 being the least motivated and 5 being very motivated?

7. What are you doing to manage diabetes levels and weight-loss? Select all that apply.

Physical activity Healthy eating Portion control
 Over-the-counter medications Prescription medications Therapist and/or health coach (in-person or online)

8. Have you been diagnosed with any of the following in addition to Type II diabetes?

- Cardiovascular disease (including heart disease or stroke) High blood pressure High cholesterol Select all
- Asthma and/or chronic obstructive pulmonary disease Fatty liver disease Infertility
- Polycystic ovary syndrome Osteoarthritis Depression
- Sleep apnea (difficulty breathing while sleeping) None

9. Is your weight currently creating challenges for you in the following areas? Select all that apply.

- Career Physical activity Daily living
- Family life Travel My weight is currently not affecting me significantly in any area

Looking back

Certain life events may affect your diabetes level and weight. Think about the time when your HbA1c was in control, and you were at your lowest weight.

1. How old were you at that time?
2. What were your HbA1c levels then?
3. What was your lowest weight?

4. Do you feel any of the following life events triggered a weight change? Select all that apply

- The end of an important relationship An illness or loss
- Habit change (eg. quit smoking) A financial issue
- A move to some city/country Another significant life event
- A career change I have always had issues with my HbA1c levels, and weight
- A family-related change I don't remember

5. When were you at your lowest weight? What were you doing to lose or manage your weight? Select all that apply

- Physical activity Portion control Prescription medications
- Healthy eating Over-the-counter medications Therapist and/or health coach (in-person or online)

Did you know?

Clinical benefits of even modest weight loss of 5-10% includes reduced cardiovascular risk factors and improved glycemic control¹

Looking into the future

Now with an idea on how your past has affected your HbA1c levels and weight, begin to think of your future milestones that can help you to control your HbA1c levels and your weight.

1. Which areas of your life do you hope to improve with management of HbA1c levels and weight? Select all that apply.

- Career Family life
- Physical activity Travel
- Daily living No specific area

2. Which treatment options for reduction in weight and lowering HbA1c levels are you interested in exploring?

- Physical activity Portion control
- Healthy eating Over-the-counter medications

Congratulations! You have taken the first step!

Thank you for your answers! Great Job!

Your answers will help in creating a long-term diabetes management plan. After filling the form, you can discuss how type II diabetes and weight are challenging your health. You can also ask questions about your BMI at the end of report.

Reference: 1. Davies MJ et al. Diabetes Care. 2022 Nov 1;45(11):2753-2786



Lower
Weight of Diabetes



TALK TO YOUR DOCTOR
ABOUT NEW POSSIBILITIES
IN DIABETES MANAGEMENT

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