# Tirzepatide

## A discussion aid for healthcare professionals and patients

### One of the tools and resources for the NICE guideline on overweight and obesity management (NG246)

NICE National Institute for Health and Care Excellence

# What is this document for?

This discussion aid is provided to support discussions between healthcare professionals and people considering tirzepatide treatment.

Healthcare professionals should refer to the summary of product characteristics for full prescribing information. People considering treatment should also see the manufacturer's patient information leaflet.

**In summary:**

- Adding tirzepatide is more effective than diet and exercise alone at reducing body weight, while on treatment.
- People who stop tirzepatide are likely to regain the weight they had lost, but there is no long-term data for what happens to weight after stopping it. With a similar medicine, people usually regain weight lost during treatment within 2 years of stopping it, and weight regain is likely to be greatest in the first year after stopping.
- Many people experience gastrointestinal effects, though not everyone does. These are reported to be mostly mild or moderate in severity, occur more often during dose escalation and decrease over time.
- The risks of rare but serious side effects, and the long-term effects on health and nutrition, are not yet known.
- Tirzepatide should not be used in pregnancy and can reduce the effectiveness of oral contraceptives.
- Tirzepatide does not take away the need for a healthy, balanced, weight-reducing diet, plus increased activity. There are wider health benefits from increased activity and healthier diet, which should be considered.

# What does treatment involve?

Tirzepatide is given by injection once a week. The person injects themselves under the skin of their abdomen, thigh or upper arm (see the manufacturer's user manual). Treatment starts at 2.5 mg once a week for 4 weeks. This can be increased by 2.5 mg once a week every 4 weeks, to a maximum of 15 mg once a week.

Tirzepatide works mainly by regulating the person's appetite, giving them a sense of fullness (satiety). They feel less hungry and experience fewer food cravings. This helps them eat less food and reduce their body weight.

# What are the potential benefits?

All the people in the studies whose results are shown here had counselling sessions from a healthcare professional to help them follow a diet of healthy, balanced meals with a deficit of 500 calories a day, and undertake at least 150 minutes of physical activity a week.

Appendix 1 shows body weight after a 5% and 20% reduction, for a range of initial body weights. Appendix 2 provides links to tools for assessing overweight and obesity.

## People without diabetes

An 18-month study in 2,539 people who were living with overweight or obesity and who did not have diabetes compared tirzepatide at different doses with placebo (the SURMOUNT-1 study; Jastreboff, Aronne et al. 2022).

**Table 1.** Proportion of people without diabetes obtaining 5% or 20% reduction in body weight from baseline after 18 months of treatment, on average per 100 people.

| | **Placebo** plus diet and increased activity | **Tirzepatide** (5 mg/week) plus diet and increased activity | **Tirzepatide** (15 mg/week) plus diet and increased activity |
|---|---|---|---|
| Number of people who had a **5% or greater** reduction in body weight | 35 saw this; 65 did not | 85 saw this; 15 did not | 91 saw this; 9 did not |
| Number of people who had a **20% or greater** reduction in body weight | 3 saw this; 97 did not | 30 saw this; 70 did not | 57 saw this; 43 did not |

## People with diabetes

An 18-month study in 938 people who were living with overweight or obesity and who also had diabetes compared tirzepatide at two different doses with placebo (the SURMOUNT-2 study; Garvey, Frias et al. 2022).

**Table 2.** Proportion of people with diabetes obtaining 5% or 20% reduction in body weight from baseline after 18 months of treatment, on average per 100 people.

| | **Placebo** plus diet and increased activity | **Tirzepatide** (10 mg/week) plus diet and increased activity | **Tirzepatide** (15 mg/week) plus diet and increased activity |
|---|---|---|---|
| Number of people who had a **5% or greater** reduction in body weight | 32 saw this; 68 did not | 79 saw this; 21 did not | 83 saw this; 17 did not |
| Number of people who had a **20% or greater** reduction in body weight | 1 saw this; 99 did not | 22 saw this; 78 did not | 31 saw this; 69 did not |

### Stopping treatment and weight regain

If a person has lost less than 5% of their original body weight after 6 months on the highest tolerated dose, decide whether to continue treatment, taking into account the benefits and risks of treatment for the person. Appendix 1 shows body weight after a 5% and 20% reduction, for a range of initial body weights. Appendix 2 provides links to tools for assessing overweight and obesity.

People who stop tirzepatide are likely to regain weight they had lost, but there is no long-term data for what happens to weight after stopping it. In its appraisal of tirzepatide, NICE noted that with a similar medicine, semaglutide, people usually regain the weight they have lost by about 2 years after stopping it. Around two thirds of the weight lost while on treatment is regained within the first year after stopping treatment (NICE technology appraisal TA1026).

# What are the potential harms and unwanted effects?

## Side effects

In the studies (SURMOUNT-1 and SURMOUNT-2), gastrointestinal disorders were the most commonly reported side effects, including nausea, diarrhoea, constipation and vomiting (Jastreboff, Aronne et al. 2022; Garvey, Frias et al. 2022). In general, these were mostly mild or moderate; they occurred more often during dose escalation and decreased over time. However, they may lead to dehydration which could potentially cause acute kidney injury (see the summary of product characteristics). People prescribed tirzepatide should be advised about this; the NHS page on acute kidney injury may be helpful to share.

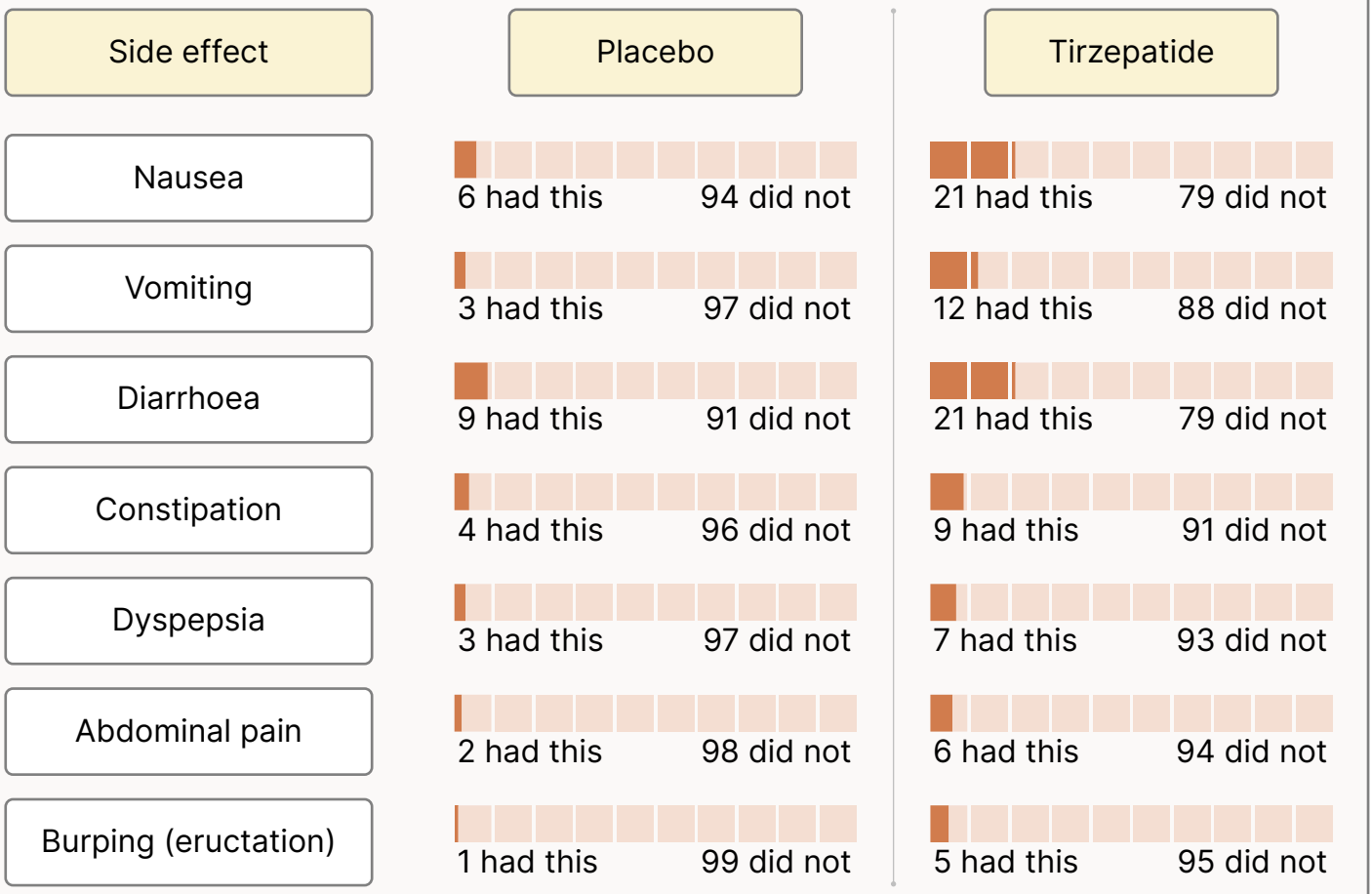
### People without diabetes

**Table 3.** Side effects in people without diabetes treated with either tirzepatide or placebo, on average per 100 people.

| Side effect | Placebo | Tirzepatide |
|---|---|---|
| Nausea | 9 had this, 91 did not | 30 had this, 70 did not |
| Vomiting | 2 had this, 98 did not | 10 had this, 90 did not |
| Diarrhoea | 7 had this, 93 did not | 21 had this, 79 did not |
| Constipation | 6 had this, 94 did not | 15 had this, 85 did not |
| Dyspepsia | 4 had this, 96 did not | 10 had this, 90 did not |
| Abdominal pain | 3 had this, 97 did not | 5 had this, 95 did not |
| Burping (eructation) | 1 had this, 99 did not | 5 had this, 95 did not |

## People with diabetes

**Table 4.** Side effects in people with diabetes treated with either tirzepatide or placebo, on average per 100 people.




Other side effects reported in the studies included:

- hair loss (mainly mild): 5 people in 100 on tirzepatide got this (so 95 did not), compared with 1 person in 100 on placebo (so 99 did not)
- rashes
- injection site reactions.

## Pancreatitis

Acute pancreatitis has occurred in people treated with tirzepatide, but the frequency of this is unclear. People prescribed tirzepatide should be told about the symptoms of acute pancreatitis and advised to seek urgent medical advice if they experience them (see the NHS page on acute pancreatitis for information suitable for sharing).

If pancreatitis is suspected, tirzepatide should be stopped and not restarted if the diagnosis is confirmed (see the summary of product characteristics).

### Safety in pregnancy and effects on contraception

Tirzepatide should not be used in pregnancy and is not recommended in people who could become pregnant unless they are using contraception. Tirzepatide should be stopped at least 1 month before a planned pregnancy, because of its long half-life (see the summary of product characteristics).

People taking oral contraceptives should switch to a non-oral contraceptive method, or add a barrier method of contraception, for 4 weeks after starting treatment and after each dose increase (see the summary of product characteristics).

### Other potential harms

The risks of other rare but serious side effects, and the long-term effects on health and nutrition from using tirzepatide are not yet known.

## Alternatives to tirzepatide

Other pharmacological options may be suitable for the person if tirzepatide is not, depending on their circumstances. For information on these and wider aspects of care for people living with overweight or obesity, see the NICE guideline on overweight and obesity management and the NICE practical guide to using medicines to manage overweight and obesity.

People may wish to review, continue or increase their current non-pharmacological approaches to weight management instead of starting tirzepatide or other medicines. Pharmacological approaches do not take away the need for a healthy, balanced, weight-reducing diet, plus increased activity. In studies, about a third of people saw a 5% or greater reduction in weight from these alone (so about two thirds did not): see the section on potential benefits. There are also wider health benefits from increased activity, which should be considered.

## References


- Garvey W, Frias J, Jastreboff A, et al. (2023) Tirzepatide once weekly for the treatment of obesity in people with type 2 diabetes (SURMOUNT-2): a double-blind, randomised, multicentre, placebo-controlled, phase 3 trial. Lancet 402(10402): 613–26.
- Jastreboff A, Aronne L, Ahmad N, et al. (2022) Tirzepatide once weekly for the treatment of obesity. New Eng J Med 387(3): 205–16. (SURMOUNT-1)
- Overweight and obesity management (2025). NICE guideline NG246.
- Tirzepatide for managing overweight and obesity (2024). NICE technology appraisal guidance 1026.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# Appendix 1: 5% and 20% reductions in body weight

| Baseline body weight (kg) | After a 5% reduction | After a 20% reduction | Baseline body weight (st lbs) | After a 5% reduction | After a 20% reduction |
|---|---|---|---|---|---|
| **75 kg** | 71 kg | 60 kg | **11 st 11 lbs** | 11 st 3 lbs | 9 st 6 lbs |
| **77 kg** | 73 kg | 62 kg | **12 st 2 lbs** | 11 st 7 lbs | 9 st 10 lbs |
| **79 kg** | 75 kg | 63 kg | **12 st 6 lbs** | 11 st 11 lbs | 9 st 13 lbs |
| **81 kg** | 77 kg | 65 kg | **12 st 11 lbs** | 12 st 2 lbs | 10 st 3 lbs |
| **83 kg** | 79 kg | 66 kg | **13 st 1 lbs** | 12 st 6 lbs | 10 st 6 lbs |
| **85 kg** | 81 kg | 68 kg | **13 st 5 lbs** | 12 st 10 lbs | 10 st 10 lbs |
| **87 kg** | 83 kg | 70 kg | **13 st 10 lbs** | 13 st 0 lbs | 10 st 13 lbs |
| **89 kg** | 85 kg | 71 kg | **14 st 0 lbs** | 13 st 4 lbs | 11 st 3 lbs |
| **91 kg** | 86 kg | 73 kg | **14 st 5 lbs** | 13 st 9 lbs | 11 st 6 lbs |
| **93 kg** | 88 kg | 74 kg | **14 st 9 lbs** | 13 st 13 lbs | 11 st 10 lbs |
| **95 kg** | 90 kg | 76 kg | **14 st 13 lbs** | 14 st 3 lbs | 12 st 0 lbs |
| **97 kg** | 92 kg | 78 kg | **15 st 4 lbs** | 14 st 7 lbs | 12 st 3 lbs |
| **99 kg** | 94 kg | 79 kg | **15 st 8 lbs** | 14 st 11 lbs | 12 st 7 lbs |
| **101 kg** | 96 kg | 81 kg | **15 st 13 lbs** | 15 st 2 lbs | 12 st 10 lbs |
| **103 kg** | 98 kg | 82 kg | **16 st 3 lbs** | 15 st 6 lbs | 13 st 0 lbs |
| **105 kg** | 100 kg | 84 kg | **16 st 7 lbs** | 15 st 10 lbs | 13 st 3 lbs |
| **107 kg** | 102 kg | 86 kg | **16 st 12 lbs** | 16 st 0 lbs | 13 st 7 lbs |
| **109 kg** | 104 kg | 87 kg | **17 st 2 lbs** | 16 st 4 lbs | 13 st 10 lbs |
| **111 kg** | 105 kg | 89 kg | **17 st 7 lbs** | 16 st 8 lbs | 14 st 0 lbs |
| **113 kg** | 107 kg | 90 kg | **17 st 11 lbs** | 16 st 13 lbs | 14 st 3 lbs |
| **115 kg** | 109 kg | 92 kg | **18 st 2 lbs** | 17 st 3 lbs | 14 st 7 lbs |
| **117 kg** | 111 kg | 94 kg | **18 st 6 lbs** | 17 st 7 lbs | 14 st 10 lbs |
| **119 kg** | 113 kg | 95 kg | **18 st 10 lbs** | 17 st 11 lbs | 15 st 0 lbs |
| **121 kg** | 115 kg | 97 kg | **19 st 1 lbs** | 18 st 1 lbs | 15 st 3 lbs |
| **123 kg** | 117 kg | 98 kg | **19 st 5 lbs** | 18 st 6 lbs | 15 st 7 lbs |
| **125 kg** | 119 kg | 100 kg | **19 st 10 lbs** | 18 st 10 lbs | 15 st 10 lbs |
| **127 kg** | 121 kg | 102 kg | **20 st 0 lbs** | 18 st 14 lbs | 16 st 0 lbs |
| **129 kg** | 123 kg | 103 kg | **20 st 4 lbs** | 19 st 4 lbs | 16 st 4 lbs |
| **131 kg** | 124 kg | 105 kg | **20 st 9 lbs** | 19 st 8 lbs | 16 st 7 lbs |
| **133 kg** | 126 kg | 106 kg | **20 st 13 lbs** | 19 st 13 lbs | 16 st 11 lbs |
| **135 kg** | 128 kg | 108 kg | **21 st 4 lbs** | 20 st 3 lbs | 17 st 0 lbs |
| **137 kg** | 130 kg | 110 kg | **21 st 8 lbs** | 20 st 7 lbs | 17 st 4 lbs |
| **139 kg** | 132 kg | 111 kg | **21 st 12 lbs** | 20 st 11 lbs | 17 st 7 lbs |
| **141 kg** | 134 kg | 113 kg | **22 st 3 lbs** | 21 st 1 lbs | 17 st 11 lbs |
| **143 kg** | 136 kg | 114 kg | **22 st 7 lbs** | 21 st 5 lbs | 18 st 0 lbs |
| **145 kg** | 138 kg | 116 kg | **22 st 12 lbs** | 21 st 10 lbs | 18 st 4 lbs |

# Appendix 2: Useful measurements

## Body mass index (BMI) calculator

The NHS BMI calculator can be used to work out if a person is in a healthy weight range for their height. There is a version for adults, and one for children and teenagers. The BMI calculator should not be used in pregnancy, by people with eating disorders, or by people with conditions that affect their height.

The calculator will ask for some details such as height, weight, and ethnic background.

A person's BMI is just one measurement and can be less accurate in some people than others (for example, people with more muscle as this is heavier).

## Other measures and factors

A person's waist circumference and waist to height ratio can be useful to work out if they are carrying too much weight around their middle (this is called central adiposity). A person with a 'healthy' BMI could still be at risk if they have excess weight in this area. People from some ethnic backgrounds are more prone to central adiposity.

The section on identifying and assessing overweight and obesity in adults in the NICE guideline on overweight and obesity management has information on how to correctly measure a person's waist, how to calculate a person's weight to height ratio, and how results should be interpreted for different population groups.