

Is weight cycling harmful?

30-second summary:

As overweight and obesity rates increase, and more people participate in repeated intentional weight loss followed by unintentional weight regain, concerns are growing about the potential risks of weight cycling. In this Personal View article published in *The Lancet Diabetes & Endocrinology*, Magkos and Stefan critically review the currently available literature on weight cycling and explore its possible impact on health. They conclude that current evidence does not provide strong support for weight cycling causing detrimental changes in body weight, body composition or metabolism. As such, the benefits of weight loss, even if intermittent, mostly outweigh any potential risks of weight fluctuation. However, many unknowns remain since they have not been studied or have been studied incompletely, so further research is needed, particularly in older people and those with large-magnitude, frequent or repeated weight cycling.

Globally, 2.5 billion people have excess body weight, with around 900 million living with obesity. Up to 50% of some populations are actively trying to lose weight at any one time. During intentional weight loss using diet and behaviour change, initial weight usually reaches a nadir by 6–12 months (longer with incretin drug therapy), followed by a plateau and unintentional regain, although some people do maintain a lower weight.

During 2025 in the UK, around 1.5 million people used an injectable drug for weight loss, resulting in higher rates of weight loss, and evidence is accumulating that unintentional weight regain may occur faster following drug-induced weight loss than behavioural methods. By two years after significant weight loss, the trajectory varies from ongoing weight loss to regain of more than twice as much weight as was initially lost (Hartmann-Boyce et al, 2021). After lifestyle intervention alone, weight is regained at an average rate of 5–19% of the lost weight per year, suggesting a return to baseline after around 5 years. Around 75% of people experience unintentional weight regain during the first year after lifestyle weight loss programmes, while regain is experienced by 95% of those who use a very-low-calorie diet or injectable incretin therapy.

In the Look AHEAD (Action for Health in Diabetes) study, in the intensive weight loss group, following initial weight loss at 1 year, over the remaining 7 years, 44% of participants were

categorised as “weight regainers”, 18% as “weight loss or maintainers”, and 38% as “weight cyclers” (Beavers et al, 2015).

Increasing obesity rates, and growing numbers of weight loss attempts followed by unintentional weight regain, raises concerns about possible health impacts of weight cycling (see *Box 1* for definitions). Weight cycling has been explored as early as 20 years ago, using data from the 1997 FIN-RISK survey (Lahti-Koski et al, 2005). Over 10 years, 7% of men and 10% of women were described as “severe weight cyclers” (gaining and losing ≥ 5 kg on three or more occasions), and 11% of men and 19% of women as “mild” weight cyclers (gaining and losing ≥ 5 kg once or twice).

The present narrative review

In their Personal View article published in *The Lancet Diabetes & Endocrinology*, Magkos and Stefan aimed to identify potential harms from weight cycling.

The public and many clinicians believe that weight cycling has negative impacts on health, including faster and larger fat mass regain and increased loss of muscle and lean mass with multiple cycles, and increased risks of developing type 2 diabetes, hypertension, sarcopenia, cardiovascular disease and metabolic dysfunction-associated steatotic liver disease (MASLD). From a psychological perspective, weight regain is likely associated with significant frustration, demotivation, low mood and



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Box 1. Weight cycling and related definitions.

Dieting: Intentional restriction of calorie intake to lose weight.

Weight cycling: Sequential, repeated intentional weight loss and unintentional regain of body weight. Sometimes referred to as “yo-yo dieting”.

Weight stability: Any weight fluctuations under 1% (Stevens et al, 2006).

Weight loss maintenance: Losing at least 10% of initial body weight and keeping it off for at least 1 year (Wing and Hill, 2001).



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negative self-image. The popular press suggests that yo-yo dieting is worse for health than staying at the higher weight over the long term, but as with many of the topics discussed here, the authors of this review believe this may relate to reverse causation.

Interpreting observational studies

Most human studies are observational, involving self-reported weight history; studies vary in numbers of cycles and weight lost and regained. Polygenic risk scores, which contribute to some people being heavier than others, do not appear to be correlated with weight cycling, but those with higher polygenic scores are more likely to lose and regain weight faster than their peer group.

Overweight or obese adults have usually gradually gained weight, and this is likely influenced mainly by age, sex and lifestyle habits rather than weight cycling; gradual weight gain also occurs in those with normal weight at baseline. Longer-term studies over 10–15 years demonstrate that weight cycling can be associated with an increase, decrease or no change in weight.

Many studies involved only one weight loss attempt or did not have a control group. In the Look AHEAD study, in the intensive weight loss group, weight regain was mainly fat mass (Beavers et al, 2015). Although lean mass declined in that group over the study duration, it was mirrored in the control group, suggesting that this was likely due to aging.

Metabolic benefits associated with weight loss, such as remission of type 2 diabetes, usually reverse when weight is regained, irrespective of how the weight loss occurred; however, they return to no worse than baseline, and cardiometabolic benefits lasting around 5 years have been reported after behavioural weight loss programmes, associated with the lower body weight, even if this weight loss was temporary (Hartmann-Boyce et al, 2023).

Interpreting interventional studies

Most interventional studies on the impact of weight loss/weight cycling involved people without obesity, and often in starvation-type settings (e.g. the Minnesota Starvation Experiment). These do not reflect normal weight loss attempts.

Basal metabolic rate (BMR) and lean mass appear to decrease linearly in proportion to the amount of weight lost, but prediction equations are only accurate to around 400 kcal, and many studies had no control group. Metabolic adaptation or adaptive thermogenesis occurs when the reduction in BMR exceeds that expected by the weight loss amount, and this may favour weight regain; however, this is not seen in everyone and may occur mainly in those who have lost very large amounts of weight.

Current understanding of weight cycling's clinical impact

A recent study, reviewed in *Diabetes Distilled*, estimated that weight is regained 0.3 kg per month faster after weight loss with semaglutide and tirzepatide compared to lifestyle-induced weight loss, with a return to baseline weight at around 1.5 years versus 4 years on average (West et al, 2026). The authors suggest that people losing weight using lifestyle alone develop strategies to try to overcome barriers to weight loss and develop coping mechanisms which are maintained, whereas the weight loss process needs less engagement when on drug therapies, as appetite is greatly reduced.

About half of lean mass is skeletal muscle. Lean mass contributes around 20–30% to the weight lost with lifestyle changes, compared to 20–40% with drug therapy (15–60% in some studies); however, wide variations may occur with all methods of weight loss. Lean mass makes up 20–50% of the weight regained, so there could be negative, neutral or positive balance.

High-protein diets and physical activity, particularly resistance exercise, may help reduce loss of lean mass at all levels of weight loss, reducing lean loss to 19% versus 29% with high-protein versus normal-protein diets, and to 11% with diet and physical activity versus 24% with diet alone. These may reduce weight regain and improve lean mass regain, but further studies are needed. Human overfeeding studies highlight the importance of diet quality, particularly avoiding negative impacts of energy-dense foods, saturated fats and fructose. Limiting muscle loss does not always translate into improved functional muscle strength.

Many unknowns remain which have been incompletely studied, if at all (see *Box 2*).

Discussion

The authors conclude that there is currently no strong support for a causal link between weight cycling and adverse changes in body weight, body composition, BMR or glucose metabolism, and that the benefits of even temporary weight reduction, including cardiometabolic health and quality of life, mostly outweigh the potential risks associated with weight cycling. We are reminded that 90% of those who eventually succeed in achieving and maintaining lower body weight have previously undergone multiple cycles of intentional weight loss and unintentional regain.

The authors of a 2025 literature review on the effects of weight cycling on muscle mass, sarcopenia and sarcopenic obesity expressed concerns about potential damaging effects but agreed there is uncertainty from current evidence (Zamboni et al, 2025). They concluded that *“weight cycling may act as an accelerator of biological aging”*, calling for further investigation of its role in sarcopenia and sarcopenic obesity, and raising more concerns about the potential harms of weight cycling than Magkos and Stefan. Both groups agree about the need for further studies, especially in relation to large weight losses and gains associated with drug therapies, and the impact of weight cycling in older people.

Implications for practice

Magkos and Stefan provide a positive message that people should not be discouraged from attempting weight loss due to concerns about health problems as a result of weight cycling. Indeed, repeated weight loss attempts potentially increase the chances of successful longer-term weight maintenance. However, much uncertainty remains.

In practice, asking permission to talk about or measure weight is an important first step. Exploring the person’s previous weight journey and weight loss attempts helps identify weight cycling, and reminds people that they can successfully lose weight, leading to a discussion about which weight loss strategy might be best for them.

We have an important role in raising awareness of the potent physiological processes which aim to return people to their weight set point, so that the people we support do not interpret

Box 2. Factors influencing assessment of weight cycling impact in humans.

- Accuracy of body composition measurement method used.
- Number of weight cycles – single versus multiple.
- Age and sex of participants (muscle loss may be greater in older people).
- Natural impact of aging on body composition changes.
- Baseline excess adiposity or normal weight (those of normal weight may lose a higher proportion of lean mass).
- Timing of measurement of energy expenditure/basal metabolic rate (early measurement may underestimate by 5–15%).

weight regain as personal failure. Evidence continues to accumulate about the impact of some ultraprocessed foods increasing daily caloric intake and, hence, contributing to weight gain or chronic health conditions.

Three simple, impactful messages we can share in those final few minutes of a consultation are:

- It is safe and important to lose weight, even if it is later regained.
- The body has powerful ways to cause us to regain weight after it is lost, so this should not be seen as failure.
- Adding more “real foods” and reducing energy-dense, high-fat and high-sugar, ultraprocessed foods might help with weight loss and maintaining it.

For more inspiration, sign up for the PCDO Society’s *Obesity care in focus* series of webinars taking place throughout summer and autumn 2026. In the first of these, my friends Jane Diggle, Lesley Hamilton and I will discuss how to have those challenging conversations around weight. We would love to have you join us. ■

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