

Quick Fix or Costly Mistake? Weight-Loss Injections in Obesity Management:

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Obesity is no longer just a lifestyle concern but rather a deadly weapon contributing to many preventable morbidities shaping the 21st century: breast cancer, bowel cancer, type 2 diabetes, heart strokes and the list goes on. Obesity has acquired its pharmacological breakthrough, or so contemporary medical discourse has claimed. GLP-1 receptor agonists, such as semaglutide (Wegovy), and dual-action therapy, like tirzepatide (Mounjaro), are heralded as a transformative advance in early preventive medicine, especially now, during the UK's obesity epidemic. Randomised controlled trials have shown a weight reduction of 15-22%, which led NHS England to promote these into the mainstream of public consciousness (1). In a nation with over 64% adults who are overweight or obese, the appeal of these jabs is undeniable and politically expedient (2). But is this truly a cure, or just a costly illusion?

Who is eligible for current Mounjaro rollout? What are issues surrounding these rollouts?

Mounjaro is a once-a-weekly injection for patients over 18, with a BMI ≥ 40 and either one of the comorbidities: type 2 diabetes, obstructive sleep apnoea, or hypertension. They work by suppressing hunger and increasing insulin sensitivity to lower glucose concentration; overall mimicking hunger to feel fuller for longer (3). These drugs appear cost-effective in theory, yet they provoke uncertainties when translated into long-term patient practice. Mounjaro is set to reduce weight over a period of 3 years (68 weeks if using Wegovy). However, evidence shows that there is a rapid rebound of weight gain. Patients regain weight four times faster once the treatment period is over, making them reach baseline weight they once got rid of, again (4). Further, a patient who completed their medication course for these jabs is set to gain 0.8 kg back per month, which is eight times higher than someone who exercises and has a balanced diet (0.1kg per month). The NICE guidelines set a cost-effectiveness threshold of £20,000 per QALY (Quality-Adjusted Life Year). If patients regain weight within 1.5 years, the resulting cost to the NHS is estimated at £21,060, exceeding this threshold and therefore classifying the intervention as not cost-effective (5).

Despite the current NICE approval of the Mounjaro on June 2025, the NHS rollout of has been extremely limited, with only 18 of 42 Integrated Care Boards (ICBs) funding the drug, with 4 ICBs stating that the fund only covers 25% or fewer of eligible patients (6). As a result, around 90% of patients obtain Mounjaro privately, where Eli Lilly has increased the price by up to 170% due to advocacy by Donald Trump (to reduce the cost for these jabs for patients in the US), creating a high-cost barrier and widening inequities (7). This restricted access risks exacerbating health inequalities by inducing post-code lottery (two people with the same risks and comorbidities getting different treatments based on their geographical location), causing detriment on public's health. This has, by example, driven patients to the black market, particularly vulnerable groups at risk. For e.g., obese women facing fertility constraints or menopause-related time pressure may seek unregulated drugs to reduce weight rapidly in order to have a healthy delivery, while individuals with body dysmorphia, often exacerbated by social media and beauty standards, are prone to turning to illicit sources often promoted online. These drugs are also sold openly in gyms and on TikTok. The consequences are severe: incorrect dosing, adulteration with harmful substances, and even death have been reported, underlining the clinical and ethical dangers of insufficient NHS provision (8).

Furthermore, at a time where ageing population is stretching the limits of the financial strain and bedding shortages within the NHS, this parallel epidemic further collapses our insubstantial system. As people age, lean body mass naturally declines by around 8% per decade between ages 50 to 70, by as much as 15% per decade thereafter. This contributes to sarcopenia, a syndrome of continuous muscle loss that affects about 10 to 30% of older adults and increases substantially with age. Sarcopenia is linked with loss of balance resulting in increased risk of falls and fractures. Following this, older adults have reduced independence and longer hospitalisation. In the UK, around one in three people aged over 65 and half of those over 80 experiences at least one fall annually, often leading to hospitalisation and long-term care transitions. This costs the NHS

approximately £2.3 billion annually (9). These vulnerabilities are compounded when interventions like weight-loss jabs significantly reduce lean body mass, potentially accelerating sarcopenia in older adults and aggravating frailty. Hence why, the best way to work around this inevitable cause is to consider other factors like protein intake. International guidelines recommend 1.0–1.2 g/kg/day in healthy older adults and up to 1.5 g/kg/day in those with chronic disease to maintain muscle anabolism (10). Evidence also suggests that combining weight-loss jabs with structured exercise programmes and nutritional support can limit muscle loss and preserve physical independence (11). To summarise, routine monitoring of muscle mass, alongside frailty screening and personalised lifestyle advice should be foundational layout in safe prescribing in older patients. Without these measures weight loss risks accelerates the disability rather than preventing disease.

What has worked in the past to reduce obesity? Is it more effective than weight-loss jabs?

As mentioned earlier, public health policymakers recognise that obesity is not merely a matter of individual lifestyle choices, but a broader societal issue shaped by environmental, economic, and behavioural influences. In response to this, UK pursued with a large-scale intervention to reduce calorie intake and improve diet. The most prominent being the Soft Drink Industry Levy (SDIL), also known as “sugar tax.” Introduced in April 2018, it had one rationale consideration: sugary drinks are highly consumed and major source of “free sugars.” This introduced a marking of a notable shift: instead of targeting individual choices, the intervention was to place responsibility on the industry.

The levy is paid to HMRC (HM Revenue & Customs) by the UK-based producer of the drink, or by the importer if the drink is manufactured overseas, at the following rates: (12)

- No tax is applied on soft drinks containing less than 5g of sugar per 100ml
- Between 5g to 8g of sugar per 100 ml: 18p per litre
- More than 8g of sugar per 100ml: 24p per litre

So far, empirical evidence shows real changes in consumption patterns: household purchasing data shows that sugar taxed drinks fell by an estimated 15g per household per week. This is predicted to lead to approximately 64,100 fewer children and adolescents being obese over the first decade from when levy was introduced (13). However, the benefits are not without its own issues. There is an important question left to answer, in reducing sugar content, what has been substituted to fit the demands of the public? Many manufacturers have substituted sugar with artificial sweeteners, such as aspartame, sucralose and many more. Whilst Cancer Research UK, states that sweeteners are advantageous as they have no link to cancer (14), their long-term health effects remain an area of ongoing scientific debate. Some studies show it may alter gut microbiota or influence appetite regulation as sweeteners might lower satisfaction in intake compared to sugar consumption leading to compensatory overeating (15), which does not fully resolve underlying drivers of obesity. To summarise this, sugar tax changes food environment by making it healthier but has unintended biological effects. However, weight-loss jabs target physiology directly but have sustainability issues.

In weighing the impact of a fiscal policy like Soft Drink Industry Levy against a pharmacological intervention like Mounjaro we must know that neither approach on its own alleviates the pressures of obesity off NHS. Sugar tax works solely on population-wide strategy which operates below NICE threshold. This provides an upstream, sustainable prevention. Like research states 5,000 young, Yr6 girls have been prevented from obesity (16), does it really help people who are already morbidly obese with comorbidities? Conversely, weight-loss jabs go beyond the NICE threshold, creating substantial financial burden. Further, issues surrounding postcode lottery make it more inequitable. Ultimately, the most effective strategy lies in integration rather than substitution, utilising both strategies creates a balance without decrementing either economical or clinical risk.

Further, there are other strategies that were utilised such as “High in Fat, Sugar, and Salt (HFSS)” advertising restrictions in London transport services and national television ban of HFSS food before 9p.m. This was used as there was evidence exposing how junk food advertisement directly increased calorie intake and preference

for unhealthy food especially amongst children. The UK government estimated the policy would remove about 7.2 billion calories per year from children's diet (17). However, this comes with its limitations. Firstly, advertising for HFFS can shift to after 9p.m. or online platforms, in which it reduces effectiveness and assumes that children are not exposed to any media after 9p.m. Children can still encounter HFFS foods via social media, packaging and even through supermarkets. Despite these weaknesses, there were some results shown after 10 months after transport HFFS banning. The purchases of unhealthy products were 7% lower than predicted, roughly 385 kcal per person per week which is the equivalent of 1.5 chocolate bars. Reductions were also observed in purchases of fat (57.9 g), saturated fat (26.4 g), and sugar (80.7 g), with the largest decreases seen for chocolate and sweets (19.4%, 318 kcal) (18). Importantly, the ban did not reduce overall food purchases but rather slowed the general upward trend in unhealthy purchasing, highlighting its role as a preventative intervention. As the exposure to HFFS products is higher in more deprived areas, these have played an important role in being beneficial for less well-off households. Comparing this to weight-loss jabs, this has proven to reduce health inequalities. HFSS bans prevent obesity from developing across this population, which are especially prone to higher baseline risk due to socioeconomic factors.

Taken together, the evidence suggests that population-level policies such as the HFSS bans and sugar taxes are more effective in reducing obesity pressures on the NHS, as they prevent disease earlier, benefit a broader demographic, and offer the most scalable, equitable, and economically viable approach. Pharmacological treatments serve as a valuable adjunct for high-risk individuals, but system-wide prevention remains the cornerstone of effective obesity management.

Interaction with Comorbidities: Clinical Complexities and Management Challenges

Obesity rarely exists in isolation; it commonly co-exists with chronic kidney disease, hepatic dysfunction and many other co-morbidities that were mentioned earlier. Each of these are clinically relevant changes that won't solely be "fixed" through weight-loss jabs, instead this drug can alter the pharmacokinetics and introduce further risks.

In example of chronic kidney disease (CKD), CKD affect 30% of people currently with obesity. It alters many aspects of physiology ranging from drug response, protein binding, enzyme activity and fluid homeostasis. It reduces renal function, which affects medication elimination from the system and disrupts hormonal regulation. For example, people with advanced CKD have reduced capacity in adapting to gastrointestinal side effects (nausea, vomiting and dehydration) which are the side effect of GLP-1 drugs like Mounjaro. If someone with CKD vomits or undergoes dehydration from the drug, the kidney fails to filter blood properly which then triggers acute kidney injury. Mounjaro then becomes an indirect harm to patients with a weaker kidney function (19).

Along with this, patient experience is key in finding direct insights into their experiences with weight-loss jabs. A large data analysis with over 67,000 patients of GLP-1 medications, revealed that about 43.5% of these patients present with at least one side effect. The common ones being: 36.9% with nausea, 16.7% with fatigue and 16.3% with vomiting (20). These conditions cause discontinuation of this therapy, which also increases when seen that almost half of the users do not follow prescribed dosing/ altering their regimens due to the costly nature of this medication (21). Such findings highlight a gap between controlled clinical efficacy and its translation onto real-world usability, where financial barriers plus side effects undermine outcomes.

Despite its own concerns, weight-loss jabs demonstrate significant potential in reducing obesity related comorbidities. This expands simply over just weight reduction. 59,856 patients, that were involved in a large meta-analysis, found this form of therapy effective not only in reduction of 10-20% body mass but also reducing incidences of type 2 diabetes. This is up to seven folds higher than the placebo (22). In cases with semaglutide, a large international trial displayed notable reduction in risk of major cardiovascular problems like heart-attack and stroke by 20% (23). Additional studies also support that there were improvements in blood glucose, cholesterol and blood pressure level which serves as a 13% reduction in 10-year cardiovascular risk

in high-risk populations (24). However, these benefits are contingent on continued use, as discontinuation leads to rapid reversal of metabolic gains, including weight regain and loss of glycaemic control. There is a lot of evidence that shows that this form of therapy comes with its positives and downsides where its long-term effectiveness remains dependent on sustained adherence, raising important questions about feasibility within real-world healthcare systems.

Conclusion:

To summarise, to simply categorise this as a binary choice would be a misstep, as obesity is multifactorial disease that requires layers of integrated response. The question is not simply if Mounjaro works – it clearly does - but whether it is being used beyond the role it was originally intended to serve. If misused, it becomes an expensive substitute but if you used strategically, it can be a valuable component. Moving forward, the best way to strategize would include system-level reform. Like, expanding equitable NHS access to appropriate patients, advocating support for mandatory lifestyle changes along with the prescription whilst regulating a safer private and online markets which will prevent unsafe usages. This is because none of the methods fully eradicate the root of the problem but can work together to decrease the risk further.

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References:

- (1) NICE (2023). NICE, recommended weight-loss drug to be made available in specialist NHS services. [online] NICE. Available at: <https://www.nice.org.uk/news/articles/nice-recommended-weight-loss-drug-to-be-made-available-in-specialist-nhs-services>.
- (2) NHS Digital (2023) Statistics on Obesity, Physical Activity and Diet, England. Leeds: NHS Digital. Available at: <https://digital.nhs.uk/data-and-information/publications/statistical/statistics-on-obesity-physical-activity-and-diet>
- (3) Diabetes UK (2024). What is Mounjaro? [online] Diabetes UK. Available at: <https://www.diabetes.org.uk/about-diabetes/looking-after-diabetes/treatments/tablets-and-medication/glp-1/mounjaro>
- (4) Mahase, E. (2025). Mounjaro: Less than half of England has NHS access to jab months after roll-out, distressing patients and GPs. *BMJ*, 390, p.r1855. doi:<https://doi.org/10.1136/bmj.r1855>.
- (5) Tirzepatide for managing overweight and obesity. (2024). Available at: <https://www.nice.org.uk/guidance/ta1026/resources/tirzepatide-for-managing-overweight-and-obesity-pdf-2973528337587397>
- (6) News Medical (2025). News-Medical. [online] News-Medical. Available at: <https://www.news-medical.net/news/20250905/Tirzepatide-roll-out-reaches-less-than-half-of-Englande28099s-GP-practices.aspx>
- (7) Ali, S. (2025). Mounjaro price increase for private patients - The Association for the Study of Obesity. [online] The Association for the Study of Obesity. Available at: <https://aso.org.uk/mounjaro-price-increase-for-private-patients/>
- (8) O'Dowd, A. (2025). Patients coming off weight loss injections need support for at least a year, says NICE. *BMJ*, [online]. doi:<https://doi.org/10.1136/bmj.r1646>
- (9) NHS England (2018). NHS England» Frailty resources. [online] England.nhs.uk. Available at: <https://www.england.nhs.uk/ourwork/clinical-policy/older-people/frailty/frailty-resources/>
- (10) Bauer, J., Biolo, G., Cederholm, T., Cesari, M., Cruz-Jentoft, A.J., Morley, J.E., Phillips, S., Sieber, C., Stehle, P., Teta, D., Visvanathan, R., Volpi, E. and Boirie, Y. (2013). Evidence-Based Recommendations for Optimal Dietary Protein Intake in Older People: a Position Paper from the PROT-AGE Study Group. *Journal of the American Medical Directors Association*, [online] 14(8), pp.542–559. doi:<https://doi.org/10.1016/j.jamda.2013.05.021>.
- (11) D'Souza, A.C., Lau, K.J. and Phillips, S.M. (2021). Exercise in the maintenance of weight loss: health benefits beyond lost weight on the scale. *British Journal of Sports Medicine*, 56(13), p.bjsports-2021-104754. doi:<https://doi.org/10.1136/bjsports-2021-104754>.
- (12) Sasse, T. and Metcalfe, S. (2022). Sugar tax. [online] Institute for Government. Available at: <https://www.instituteforgovernment.org.uk/explainer/sugar-tax>
- (13) Cobiac, L.J., Rogers, N.T., Adams, J., Cummins, S., Smith, R., Mytton, O., White, M. and Scarborough, P. (2024). Impact of the UK soft drinks industry levy on health and health inequalities in children and adolescents in England: An interrupted time series analysis and population health modelling study. *PLoS medicine*, 21(3), pp.e1004371–e1004371. doi:<https://doi.org/10.1371/journal.pmed.1004371>

(14) NHS (2022). The truth about sweeteners. [online] nhs.uk. Available at: <https://www.nhs.uk/live-well/eat-well/food-types/are-sweeteners-safe/>

(15) Coccurello, R. (2025). Disrupting the Gut–Brain Axis: How Artificial Sweeteners Rewire Microbiota and Reward Pathways. *International Journal of Molecular Sciences*, 26(20), p.10220. doi:<https://doi.org/10.3390/ijms262010220>.

(16) Thomas, T. (2024). UK sugar tax explained: what is it and has it worked? *The Guardian*. [online] 9 Jul. Available at: <https://www.theguardian.com/business/article/2024/jul/09/uk-sugar-tax-explained-what-is-it-and-has-it-worked>.

(17) Health (2026). Landmark junk food ad ban to protect kid’s health. [online] GOV.UK. Available at: <https://www.gov.uk/government/news/landmark-junk-food-ad-ban-to-protect-kids-health>.

(18) NIHR Evidence. (2022). TfL advertising ban lowered purchases of unhealthy food. [online] Available at: <https://evidence.nihr.ac.uk/alert/advertising-ban-was-linked-to-lower-purchases-of-unhealthy-food-and-drink/>.

(19) Farhat, F., Gonzalez, P., Ravin, A.B., Foo, F.F., Patel, S., Cheng, J., Holland, S.W., Chinnici, A. and Abu Homoud, A. (2024). 7529 A Silent Menace Of Mounjaro: Acute Renal Failure Associated With Tirzepatide. *Journal of the Endocrine Society*, 8(Supplement_1). doi:<https://doi.org/10.1210/jendso/bvae163.1027>.

(20) Neil, Tronieri, J.S., Ungar, L. and Chandra, G.S. (2026). Self-Reported Side Effects of Semaglutide and Tirzepatide in Online Communities. [online] arXiv.org. Available at: <https://arxiv.org/abs/2603.12341> [Accessed 22 Mar. 2026].

(21) The Pharmaceutical Journal. (2026). Almost half of weight-loss drug users modify doses, finds survey. [online] Available at: <https://pharmaceutical-journal.com/article/news/almost-half-of-weight-loss-drug-users-modify-doses-finds-survey> [Accessed 22 Mar. 2026].

(22) Jia, I.-I.-T.T., Bloomfield, G.C., Chen, M.Y., Cunningham, M.H., Azagury, D.E., Alimi, Y.R. and Prindeze, N.J. (2025). Analysis of the long-term impact of glucagon-like peptide-1 (GLP-1) receptor agonists for control of obesity and obesity-related comorbidities: a meta-analysis. *Surgical endoscopy*, [online] pp.10.1007/s00464-02512086–5. doi:<https://doi.org/10.1007/s00464-025-12086-5>.

(23) Clinic, C. (2023). International Clinical Trial Finds that Semaglutide Reduced Cardiovascular Events by 20% in Adults with Overweight or Obesity Who Don’t Have Diabetes. [online] Cleveland Clinic. Available at: <https://newsroom.clevelandclinic.org/2023/11/11/international-clinical-trial-finds-that-semaglutide-reduced-cardiovascular-events-by-20-in-adults-with-overweight-or-obesity-who-dont-have-diabetes>.

(24) Seijas-Amigo, J., Salgado-Barreira, Á., Castelo-Dominguez, R., Pérez-Álvarez, M.T., Ponce-Piñón, B., Fernández-Silva, M., Rodríguez-Barreiro, M., Pereira-Pía, M., Iglesias-Moreno, J.M., Gago-García, M., Montáns-García, R., Fernandez-Perez, A., Fraga-Gayoso, D., Fernandez-Montenegro, M., Riveiro-Barciela, B., Rilla-Villar, N., Cardeso-Paredes, B., Ribeiro-Ferreiro, M., Rodriguez-Penas, D. and Cordero, A. (2025). Effects of GLP-1 agonists on 10-year cardiovascular risk reduction in primary prevention: A 44-week open label prospective study. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews*, 19(9), p.103312. doi:<https://doi.org/10.1016/j.dsx.2025.103312>.

