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Perspective

Weight Loss Drugs Are Not Enough: Patients Need Rehabilitation

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Abstract: Metabolic syndrome leading to type 2 diabetes has become one of the defining health challenges of our time. It emerges from the interaction between genetic susceptibility, behavior, and the exposome. Glucagon-like peptide-1 (GLP-1) receptor agonists represent a major pharmacological advance, inducing marked weight loss and improved glycemic control. However, their long-term effectiveness remains limited by poor adherence, high cost, and relapse after discontinuation. Pharmacotherapy alone addresses symptoms, not causes. Sustainable recovery from metabolic disorders therefore requires a rehabilitative approach. This includes structured behavioral change, nutritional adaptation, and metabolic re-education. Therapeutic fasting provides a model for such rehabilitation, promoting rapid metabolic improvements through energy deficit, hepatic lipid mobilization, and enhanced insulin sensitivity. Emerging evidences suggest that repeated fasting interventions can induce durable remission of type 2 diabetes. Beyond individual biology, true sustainability demands that medicine itself reduce its ecological footprint, as pharmaceuticals and other xenobiotics increasingly contribute to global pollution and greenhouse gas emissions. Integrating pharmacological and non-pharmacological strategies offers a pathway toward a medicine of recovery rather than dependency.

Keywords: exposome; obesity; GLP-1 agonist; fasting; type 2 diabetes; rehabilitation

1. Conventional Medicine Falls Short against Metabolic Syndrome

Metabolic syndrome is one of the great health challenges of our time which pushes millions of people toward type 2 diabetes and heart disease [1]. Behind this medical jargon are patients who feel exhausted, depend on pills to manage their symptoms, and believe their condition can only get worse. This human burden is only the visible part of the problem. The epidemic of chronic diseases which affects healthy lifespan also entails tremendous costs for national healthcare systems.

Chronic disease does not arise in isolation. It develops over time through the interaction of genetic susceptibility, behaviour, and the environments in which people live. Diet quality, physical inactivity, chronic stress, and exposure to air, water and food pollution all contribute to the gradual loss of metabolic resilience. This broader context is sometimes captured by the concept of the exposome [2], which describes the cumulative influence of environmental factors across the life course.

For decades, medicine offered little more than "management". Doctors prescribed drugs for blood sugar, blood pressure, and cholesterol. Several new tools are now available to fight the roots of obesity and diabetes [3]. Traditionally, diets, in their many forms, including calorie restriction, low carbohydrate, intermittent fasting, have always been the first line of defence. Bariatric surgery can bring even faster and larger changes. Yet in an

environment dominated by cheap, highly palatable, and addictive foods, these strategies often failed to produce durable results.

The last decade saw the introduction of what is seen by many as a revolution.

2. The GLP-1 Revolution

GLP-1 receptor agonists such as semaglutide and tirzepatide reduce hunger, lower blood sugar, and lead to significant weight loss. They have been long difficult to manage by patients because they had to be injected, but this year so the publication of the first results of an oral version of these drugs [4]. Is it the iPhone moment for weight loss drugs? This opens the possibility of causing weight loss in millions of people with a simple pill.

Is this the long-awaited magic solution? The reality is more complex. Benefits are often transient. Patients relapse. The weight comes back, and with it the pills. Studies already show that adherence drops sharply after two years. In a large U.S. claims analysis of adults with obesity but without diabetes, only 32% were still on any GLP-1 at 12 months; proportion of days covered averaged 51%, and just 27% met standard adherence [5]. Many patients stop because of cost, side effects, or frustration. Many feel like Sisyphus in Greek mythology, condemned to push his boulder up the mountain only to see it roll down again. There are endless debates about what is the best tool for weight loss. But the question is not only whether we have the right tools. It is whether we are using them in the right way.

3. Medicine of Symptoms or Medicine of Recovery?

Pills and injections primarily treat symptoms. This is also true for most drugs used to manage diabetes or hypertension. They are valuable and sometimes lifesaving, but they rarely address the underlying causes of disease. They function like painkillers for a chronic injury. If a patient with a torn ligament were sent home with analgesics but no physiotherapy, we would consider this inadequate care. Yet this is how obesity and type 2 diabetes are often managed.

GLP-1 drugs are for sure one of the most efficient ways of provoking weight loss. But if we treat them as the end point, we risk locking patients into lifelong dependency. The better path is to see them as scaffolding in severe cases, useful at the beginning, but not the whole story.

Rehabilitation implies something different: a structured, guided process of recovery.

4. Rehabilitation through Fasting: A Case Example

In recent years, fasting has attracted growing scientific interest for its potential therapeutic effects on metabolic health, including weight loss, improved insulin sensitivity, and better glycemic control [6].

A growing body of evidence suggests that fasting may contribute to the treatment and even remission of type 2 diabetes. This effect appears to stem from the rapid reversal of hepatic insulin resistance following a sudden reduction in calorie intake [7,8], and is further supported by studies showing that sustained remission of diabetes can be achieved through weight loss and the reduction of excess visceral fat [9,10].

We recently published the case of a man with type 2 diabetes who achieved remission through repeated fasting cures [11]. His family history was grim: generation after generation with diabetes, insulin use, and poor health. He felt condemned to the same fate.

He had tried everything: pills, exercise, diets. Nothing worked. Hunger was constant. Weight always returned. Out of desperation, he came to us in 2019. He tried pills, he tried dieting, he tried fasting-mimicking diets at home. After his first fast, he lost seven kilograms, but regained it within two months. Instead of giving up, he came back. He extended his food reintroduction phases, sought support from his wife, and worked with us to build a new routine.

Over time, his body changed. Cravings shifted. “At first, I dreamed of pizza”, he told me. “Later, I dreamed of roasted cauliflower with olive oil. I was not fighting hunger anymore. It felt natural”. After several fasting cycles with careful food reintroduction, the patient gradually shifted to healthier food choices, with reduced hunger and a lasting change in his relationship with food, likely supported by a more balanced gut microbiota. Step by step, his diabetes went into remission.

This is rehabilitation: not a miracle, but a process of training and support to achieve sustainable lifestyle changes.

The debate is heated, and it should be. But the real question is not GLP-1 versus bariatric surgery versus fasting or dieting. It is whether we build a medicine of dependency, or a medicine of recovery.

The real weakness of our health system is not the existence of drugs. It is the absence of true rehabilitation. Too often, patients are left with prescriptions but no long-term guidance.

5. The Exposome and the Illusion of Sustainable Medicine

The exposome further adds to the complexity of obesity by including environmental chemicals known as obesogens, which can disrupt metabolic regulation and promote weight gain [12].

Evidence from dietary intervention studies indicates that pollutants such as perfluorinated alkyl substances (PFASs) can hinder weight loss maintenance, as higher plasma PFAS concentrations were associated with greater post-diet weight regain [13], highlighting the potential obesogenic effects of environmental pollutants. High intake of ultra-processed foods is associated with increased exposure to diverse xenobiotics, including processing-related toxic compounds, packaging-derived endocrine disruptors, and multiple food additives, resulting in higher internal burdens of potentially harmful chemicals [14].

Beyond its metabolic effects, the exposome also influences pharmacological responses by interacting with drug-metabolizing enzymes, xenobiotic-sensing receptors, and transporters. These drug–exposome interactions can alter therapeutic efficacy, contribute to drug resistance, or amplify adverse effects [15].

If the exposome explains the origins of disease, it also illuminates the hidden costs of its treatment. Pharmacological interventions, while valuable, add to the exposome themselves. Active pharmaceutical ingredients are now routinely detected in surface and drinking water, influencing microbial communities and fostering antibiotic resistance [16]. From 1995 to 2019, the global pharmaceutical greenhouse gas footprint grew by 77% [17]. Each pharmacological intervention carries an unseen energetic shadow: manufacturing, packaging, and distribution rely on the fossil subsidy that sustains our economy and our pollution [18].These environmental externalities remain largely invisible in discussions of medical progress.

By ignoring the exposome, we distort our sense of what sustainable health means. We optimise short-term biomarkers while amplifying the ecological stressors that perpetuate disease. In contrast, non-pharmacological interventions such as fasting act within the body's intrinsic regulatory networks without expanding the chemical and energetic footprint of care [19,20].

6. The Path Forward

A truly sustainable medicine must act on two levels. It should restore internal metabolic balance while reducing the external exposures that undermine it.

The future must combine approaches. GLP-1 drugs can serve as scaffolding for those who need urgent help. Non-pharmacological tools like fasting cures can provide the deeper reset that teaches people that they have the ability to heal themselves. With proper support, these strategies together can change the course of metabolic disease. To face the enormous challenge of chronic illnesses linked to excess weight, every effective tool should be considered.

Our patient said it best: "I did not just lose weight, I gained back control of my life". That is the future patients deserve: Not resignation, but recovery.

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Use of AI and AI-Assisted Technologies

During the preparation of this work, the author used ChatGPT 5.2 (OpenAI) to improve the quality of the English language. After using this tool/service, the author reviewed and edited the content as needed and takes full responsibility for the content of the published article.

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