**Clinical Research in Practice**
**The Journal of Team Hippocrates**
VOL 11 ISS 1 / eP3597 / APRIL 11, 2025
https://doi.org/10.22237/crp/1743681720

# Off-label long-term use of phentermine for weight management

MONIQUE MORIN, Michigan State University College of Osteopathic Medicine, morinmon@msu.edu
YAMINI PANDEY, Michigan State University College of Osteopathic Medicine, pandeypyamini@gmail.com
SARAH BDEIR, Wayne State University School of Medicine, sarah.bdeir@med.wayne.edu
RUMYAH RAFIQUE, Wayne State University School of Medicine, gh1907@wayne.edu
TAIM-ALLAH AL-JARRAH, Wayne State University School of Medicine, gb1890@wayne.edu
ALI A. FARHAT, M.D., Corewell Wayne Family Medicine Residency, ali.farhat2@corewellhealth.org

**ABSTRACT** A clinical decision report using:

Hendricks EJ, Greenway FL, Westman EC, Gupta AK. Blood pressure and heart rate effects, weight loss and maintenance during long-term phentermine pharmacotherapy for obesity. *Obesity*. 2011;19(12):2351-2360 https://doi.org/10.1038/oby.2011.94

for a patient struggling at the intersection of weight loss and financial instability.

***Keywords***: *phentermine, weight loss, obesity, medication management*

## Clinical-Social Context

Ms. Addie Johnson (pseudonym) is a 36-year-old African American female who presented to our community care clinic for help with weight loss. She has a past medical history of hypertension, hypercholesterolemia, obstructive sleep apnea, and class 2 obesity with a BMI of 35.3kg/m$^2$.

She states that a couple of years ago she used Adipex® (phentermine) for weight loss and she was able to lose 15lbs over the 12-week treatment period. She is frustrated because since stopping the phentermine she now weighs 20lbs heavier than she did before initially taking the phentermine. She is unable to lose weight again despite attempting to eat healthier and exercising more often. She has been counseled by her primary care doctor on lifestyle modifications she can implement such as the type of oil she uses, choosing light alternatives, and portion reduction. When asked about her diet and exercise she states that she walks around her neighborhood for 30 minutes a day, but also states she is constantly on her feet as she has three children aged 2, 3, and 6. She cannot afford a fitness center membership and struggles to find time for additional routine exercise amidst her busy schedule. She insists she "has tried every diet" and "nothing works." She is discouraged by the lack of progress she has made despite her efforts and is requesting pharmacological help. She has requested a GLP-1 agonist from her insurance, but prior authorizations were denied as her A1C taken 1 month prior was 5.4%, which is not within a diabetic or prediabetic range. Her doctor prescribed her Qsymia® (Phentermine 7.5mg/ Topiramate 46mg), but it cost $149 for a month supply with the use of an online "GoodRx" coupon. She shows her coupon phone application in which the Qsymia prices start at $149 USD, while generic phentermine (phentermine) ranges

*MONIQUE MORIN and YAMINI PANDEY are 3rd year medical students at the Michigan State University College of Osteopathic Medicine. SARAH BDEIR, RUMYAH RAFIQUE, and TAIM-ALLAH AL-JARRAH are 3rd year medical students at the Wayne State University School of Medicine. ALI A. FARHAT, MD, is a resident with the Corewell Wayne Family Medicine Residency.*

ISSN: 2379-4550
http://digitalcommons.wayne.edu/crp, 

**Clinical Research in Practice**
**The Journal of Team Hippocrates**
VOL 11 ISS 1 / eP3597 / APRIL 11, 2025
https://doi.org/10.22237/crp/1743681720

from $10-20 for a month supply. She is unable to afford the Qsymia® out of pocket; she works as a cashier at a local department store and is supporting her children. She is now requesting a phentermine refill because "it worked before" and she was able to afford it at the time it was prescribed. She would like to be on the phentermine long term because she experienced weight gain after stopping the phentermine after the 12-week treatment.

Her medications include lisinopril, atorvastatin and she currently uses a CPAP machine at night. Insurance is covered by Medicaid with Priority Health Choice.

## Clinical Question

Is off-label long term use of phentermine for weight management safe and effective?

## Research Article

Hendricks EJ, Greenway FL, Westman EC, Gupta AK. Blood pressure and heart rate effects, weight loss and maintenance during long-term phentermine pharmacotherapy for obesity. *Obesity*. 2011;19(12):2351-2360 https://doi.org/10.1038/oby.2011.94 [1]

## Description of Related Literature

In the United States, obesity is extensively complicated. It is an epidemic, a public health priority, a social disease, and a pharmaceutical-capitalist enterprise. For patients and doctors, dealing with the health consequences of obesity can be frustrating.

This case is typical of many patients seen in primary care. There are structural barriers to pharmacotherapy of obesity, yet it is increasingly recognized that the biopsychosocial phenomenon requires such treatment. The available clinical research is not particularly helpful answering the clinical question most relevant for Ms. Johnson. Phentermine is approved by the FDA for 12 weeks of therapy, leading to the myth that "...a short-term boost will help initiate a behavior change." This myth ignores the CNS receptors thought to be active for long term weight management. This short-term treatment risks rebound-weight gain; also, it is not particularly truthful. We attempted to find clinical research that would help us estimate the risk of longer-term treatment with phentermine.

The CONQUER trial was a randomized placebo-controlled trial of longer duration, but it explored the use of a medication combination that could support a pharmaceutical patent, making it unavailable for our patient.[2]

Leblanc, et. al. performed a USPSTF review, but the results were inconclusive in many ways, making the information less useful for clinical decision making.[3]

Using repetitive queries, we were able to find two observational studies exploring the longer-term effects of phentermine use for weight management. A PCORI sponsored study found no increased risk with long term use of phentermine.[4]

We chose the second study because it more richly described the clinical setting that we believed could be replicated at our clinic—a primary care site willing to prescribe weight management medication and make a long-term commitment to behavior change.[1] Hendricks et al. reviewed records of 300 patients at a private medical bariatric practice, one group treated with phentermine for a period of over 12 weeks with lifestyle modifications while the untreated group underwent lifestyle changes alone. The mean systolic and diastolic blood pressures fell in both groups as they lost weight; there was not a significant difference in this drop between groups. There was only one instance in this study in which a prehypertensive patient became hypertensive after phentermine use for one year. This patient lost 15% of his body weight and elected to continue on phentermine with a low dose lisinopril, which controlled his hypertension. Additionally, at week 26 there were no significant changes in HR between treated and untreated subjects. This study suggests that phentermine use for obesity does not correlate with increases in blood pressure and heart rate, rather increased weight loss may be associated with favorable shifts in these parameters.

ISSN: 2379-4550

**Clinical Research in Practice**
**The Journal of Team Hippocrates**
VOL 11 ISS 1 / eP3597 / APRIL 11, 2025
https://doi.org/10.22237/crp/1743681720

According to the strength recommendation taxonomy (SORT), long-term phentermine for weight loss and maintenance falls within the Level B strength of recommendation based on observational studies.[5]

## Critical Appraisal

This is a retrospective cohort study, meaning it falls into Level 2 study quality based on the SORT criteria.[5] This design is used because there are no long-term randomized control trials of phentermine. The study uses phentermine monotherapy for weight loss, which is feasible in our outpatient family medicine practice.

Study participants were selected from a pool of patients at a bariatric medicine clinic in a consecutive manner based on date of appearance. Participants needed to be enrolled in a weight management program, needed to return at least 6 times in the 12 weeks following the initial visit, and had to be on phentermine monotherapy or no pharmacotherapy for weight loss. This design favors patients that are more conscious about their health and more compliant with their treatment as they needed very regular program attendance during the first 12 weeks. One factor of interest is the study protocol states they excluded patients on drugs that affect weight. However, they explicitly did not exclude antidepressants. This is noteworthy because many antidepressant medications are associated with weight gain which could have had an effect on blood pressure and heart rate.

Since the study is not randomized, the initial provider could have chosen to prescribe phentermine to patients that have less cardiovascular risk factors due to fear of adverse events. Thus, there could be some element of indication and survivorship bias and the patients enrolled might not be representative of the general population. The study is also not blinded, meaning the provider could be expecting an increase in blood pressure during the time of measurement. This would bias the results to show an increase in blood pressure on phentermine.

The patients enrolled were dissimilar to Ms. Johnson because they were on a stricter weight management program that utilized a very low carbohydrate keto diet. Yet, we have clinicians willing to advise patients with this type of dietary advice. On the other hand, the patients were similar to ours in that they presented to a bariatric medicine clinic, meaning they all needed additional help losing weight.

The attrition rates for the study increased steadily beyond 12 weeks. For the treatment group retention was 81, 65, and 37% at 26, 52, and 104 weeks. For the untreated group retention was lower during the same time frame at 61, 48, and 16%. It is important to note that attrition rates were highest in patients who did not observe steady weight loss, skewing the conclusion of the study. In those patients there would be no weight-loss related drop in blood pressure and heart rate to offset any potential increase caused by phentermine.

One of the most important aspects of this study is that the providers were willing to prescribe long-term phentermine. Treatment holidays were acceptable, lending itself to a newer model of prescribing. Furthermore, they all followed regularly at the bariatric clinic with a maximum allowed treatment hiatus of 1 year.

The authors included some qualitative descriptions of the patient's experience. In addition to the appetite and hunger suppression effect, longer-term use of phentermine was associated with "...improved or stronger control of eating, diminution or absence of food cravings, or improved ability to follow their eating plan."

In summary, this report gives credence to the idea that there is no increased cardiovascular risk to long term phentermine use.

## Clinical Application

Addie Johnson presented to the office requesting a prescription for phentermine, citing challenges in achieving weight loss through lifestyle modifications alone. She noted previous success with phentermine for weight management and expressed a preference for it due to its affordability out-of-pocket (OOP). Other weight-loss medications, such as Qsymia and GLP-1 agonists, had been denied by her insurance, and she was unable to cover the cost OOP.

ISSN: 2379-4550

**Clinical Research in Practice**
**The Journal of Team Hippocrates**
VOL 11 ISS 1 / eP3597 / APRIL 11, 2025
https://doi.org/10.22237/crp/1743681720

Given her desire for long-term weight management and the findings from Hendricks et al., the clinical team discussed the possibility of extended phentermine use, provided she tolerated it well. Ms. Johnson was thoroughly educated on the potential side effects of phentermine, including palpitations, dry mouth, and constipation. It was emphasized that phentermine is FDA-approved for short-term use (12 weeks), and long-term use would be off-label. However, based on the evidence from Hendricks et al., the team explained that long-term use of phentermine appears to be safe under close monitoring.

Ms. Johnson agreed to the trial of phentermine for long-term use. She was pleased with the affordable, long-term treatment option that contributed to her weight loss and overall health improvement.

## New Knowledge Related to Clinical Decision Science

There are many different approaches physicians take when helping their patients lose weight. Primary care physicians have the flexibility to try different approaches with patients, depending on each patient's background and goals, as long as patients are committed to their weight loss goals. The first step often involves behavioral interviewing, which can significantly vary across different physicians.

For example, in the clinic described in the clinical scenario, several different approaches are used all emphasizing overall lifestyle modification but in using different techniques:

- Dr. Fraz [pseudonym] advocates for the benefits of a healthy diet and frequent exercise. He recommends walking at least 30 minutes, five days per week, especially after meals. He emphasizes coupling exercise with a low-sugar, high-protein, whole food diet while reducing snacking and consuming excessive calories through drinks. Hunger is a crucial player that makes weight loss difficult so starting a meal with a big glass of water and eating a high volume of cheaper vegetables like cabbage, lettuce, spinach and fiber supplements like Metamucil can reduce hunger.

- Dr. Bulla [pseudonym] provides her patients with an exercise prescription and adds learning materials to the patients after-visit summary to supplement her counseling in office. She recommends more protein at the start of meals to make patients feel fuller. Additionally, meal prepping helps make it easier to stay on track with weight loss goals.

- Dr. Yeshi [pseudonym] asks his patients about their current habits and then shows a series of five simple exercises that patients can easily add to their daily routine, such as while they are watching television.

- Dr. Rezzi [pseudonym] recommends patients to stop buying the unhealthy snacks, making it easier not to consume them, and to focus on lean meats, fruits, vegetables, prioritizing whole wheat in comparison to white, and starting meals with cucumbers to feel full faster and get the nutrients without the calories.

There are many reasons as to why patients are unable to adhere fully to successful behavioral interventions. Socioeconomic factors like lack of access to healthy fruits and vegetables, inaccessible grocery stores, inadequate transportation, unsafe neighborhoods to exercise in, time to engage in healthy eating and exercise habits, and more are all essential to consider.

This critical appraisal highlights the importance for primary care physicians to be well-versed in facilitating patient behavioral change, and if necessary, incorporating pharmacotherapy based on each patient's circumstances. Though much evidence points to the success of GLP-1 agonists in weight loss, more research must be done to find viable long-term therapies such as phentermine that can be options for low-income and uninsured individuals.

The most significant lesson learned from this Clinical Decision Report is that we, as physicians, should be more honest with our patients by educating them about the fact that 12-week therapy with phentermine is not helpful towards the ultimate goal of long-term weight loss.

ISSN: 2379-4550

**Clinical Research in Practice**
**The Journal of Team Hippocrates**
VOL 11 ISS 1 / eP3597 / APRIL 11, 2025
https://doi.org/10.22237/crp/1743681720

## Conflict Of Interest Statement

The authors declare no conflicts of interest.

## References

1. Hendricks EJ, Greenway FL, Westman EC, Gupta AK. Blood pressure and heart rate effects, weight loss and maintenance during long-term phentermine pharmacotherapy for obesity. *Obesity*. 2011;19(12):2351-2360 https://doi.org/10.1038/oby.2011.94
2. Gadde KM, Allison DB, Ryan DH, et al. Effects of low-dose, controlled-release, phentermine plus topiramate combination on weight and associated comorbidities in overweight and obese adults (CONQUER): a randomised, placebo-controlled, phase 3 trial. *Lancet*. 2011 Apr 16;377(9774):1341-52. https://doi.org/10.1016/S0140-6736(11)60205-5
3. LeBlanc EL, Patnode CD, Webber EM, et al. Behavioral and Pharmacotherapy Weight Loss Interventions to Prevent Obesity-Related Morbidity and Mortality in Adults: An Updated Systematic Review for the U.S. Preventive Services Task Force. *U.S. Preventive Services Task Force Evidence Syntheses, formerly Systematic Evidence Reviews*. September 2018:18-05239-EF-1. https://www.ncbi.nlm.nih.gov/books/NBK532379/
4. Lewis KH, Fischer H, Ard J, et al. Safety and Effectiveness of Longer-Term Phentermine Use: Clinical Outcomes from an Electronic Health Record Cohort. *Obesity* (Silver Spring). 2019 Apr;27(4):591-602. https://doi.org/10.1002/oby.22430
5. Ebell MH, Siwek J, Weiss BD, et al. Strength of recommendation taxonomy (SORT): a patient-centered approach to grading evidence in the medical literature. *J Am Board Fam Pract*. 2004;17(1):59-67. https://doi.org/10.3122/jabfm.17.1.59

ISSN: 2379-4550