

## INTRODUCTION

### Background:

- Medications in certain classes, such as antipsychotics, antidepressants, antihyperglycemics, antihypertensives, and corticosteroids, have been linked to significant weight gain.<sup>1</sup>
- This weight gain can increase the risk of metabolic disorders, including prediabetes and type 2 diabetes (T2D), affecting 38% US adults and 11% of US population in 2019, respectively.<sup>2</sup>
- The National Diabetes Prevention Program (DPP) was created by CDC in 2010 to address the increasing burden of prediabetes and T2D in the United States. One key feature of the DPP is the lifestyle change program, focusing on 7% weight loss through healthy eating and physical activity.<sup>3</sup>
- East Carolina University (ECU) Family Medicine started its DPP in 2017 and obtained full CDC recognition in 2023. So far more than 150 patients have enrolled this year-long program.
- Considering that almost half of individuals in the United States took prescription drugs within the past 30 days,<sup>4</sup> it is crucial to investigate the potential impact of ongoing medication use on weight management efforts.

### Objective/Hypothesis:

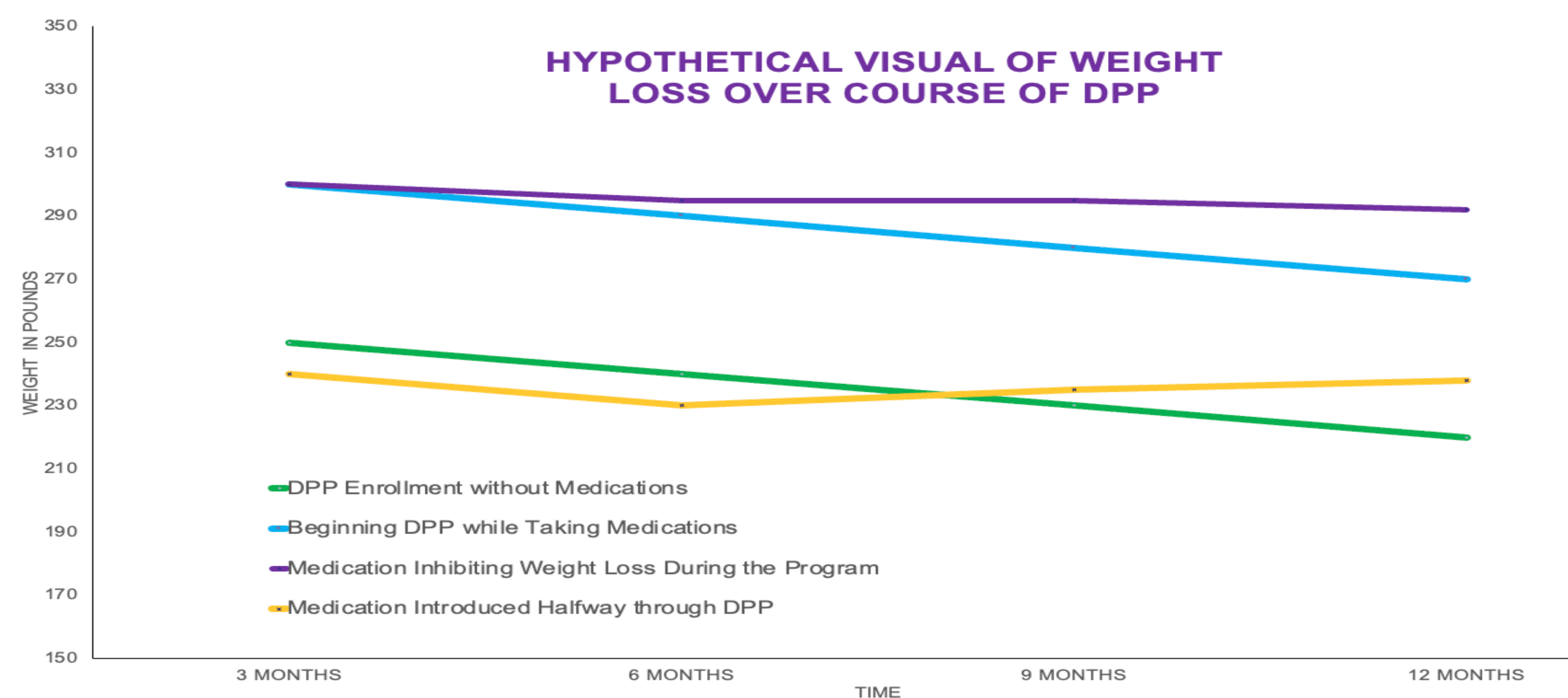
- Our study will investigate whether ongoing medication use among DPP participants is associated with their weight change during participation in the program. We hypothesize that patients who take medications causing weight gain do not lose expected 7% weight from baseline to completion of the DPP.

## MATERIALS & METHODS

**Study Design:** Retrospective review of Electronic Health Records (EHR) of adult patients with prediabetes who completed DPP at ECU Family Medicine Center from 2017 - 2024.

Data are being collected on patients' demographic and socio-economic characteristics, health conditions, medications, weight, blood pressure, laboratory values, and number of DPP sessions completed.

## RESULTS



### Baseline/Preliminary results:

Data extraction from EHR is currently undergoing analysis. So far, we have complete baseline and final weight data on 113 patients (n=113).

- Average age: 51 years
- Gender: Females 98 (87%) , Male 15 (13%)
- Race: Black/African American 86 (76%), White 19 (17%), Other 8 (7%)
- Average number of DPP sessions attended: 15.25 (out of minimum 22 sessions offered over 12 months)
- Average baseline weight: 229 lbs.
- Average weight after DPP: 197 lbs. (average weight loss 14%)
- 81 (72%) patients lost weight, **weight remained the same in 5 patients (4%), and 27 (24%) patients gained weight despite completing DPP.**

### Case:

- Ms. BC, 28-year-old African American female with a history of gestational hypertension during her first pregnancy, obesity (BMI 56 kg/m<sup>2</sup>) and prediabetes (hemoglobin A1c 6.1%) was referred to diabetes prevention program (DPP) at ECU Family Medicine by her primary care provider.
- Her first DPP session was in 12/2020 when her baseline weight was 332 lbs. She attended a total of 24 DPP sessions over the next year until 11/2021 when her weight was 336 lbs. at the end of the DPP. She gained 4 lbs. despite being engaged in lifestyle modifications as instructed during her enrollment in DPP.
- Chart review revealed that she was taking DEPO-PROVERA (medroxyprogesterone) 150 mg intramuscularly every 12 weeks for contraception. Long-term use of this hormonal contraceptive is known to cause weight gain.

## DISCUSSION

- Understanding whether certain medications, such as antihypertensives, antidepressants, antipsychotics, and corticosteroids, hinder weight loss despite completion of DPP is crucial for optimizing the effectiveness of lifestyle interventions targeting weight management in individuals at risk of T2D.
- By identifying potential barriers posed by medication use, healthcare professionals can develop tailored strategies to address weight management challenges in these at-risk populations.
- Moreover, this research can contribute to personalized treatment plans by helping clinicians make informed decisions regarding medication selection and monitoring their effect on weight.
- If a certain medication cannot be avoided or substituted, additional interventions may need to be considered (e.g., addition of a weight loss medication).

## REFERENCES

- 1) Domecq, J. P., Prutsky, G., Leppin, A., et al. (2015). Clinical review: Drugs commonly associated with weight change: a systematic review and meta-analysis. *The Journal of clinical endocrinology and metabolism*, 100(2), 363–370.
- 2) Centers for Disease Control and Prevention. National Diabetes Statistics Report website. <https://www.cdc.gov/diabetes/data/statistics-report/index.html> (Accessed February 14, 2023)
- 3) <https://www.cdc.gov/diabetes/prevention/index.html> (Accessed February 14, 2023)
- 4) Center for Disease Control and Prevention Staff Therapeutic Drug Use (2019) [Accessed Feb 2023]. <https://www.cdc.gov/nchs/fastats/drug-use-therapeutic.html>

## ACKNOWLEDGEMENTS

ECU Family Medicine Diabetes Prevention Program