

## The Effect of Genetic Testing as Part of Personalized Lifestyle and Habit Change Coaching

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### Background

Genetic testing can be used as part of lifestyle intervention programs to provide personalized recommendations with the hope of improving adherence and facilitating changes in lifestyle behaviors. However, little is known about the impact of such testing on the effectiveness of a lifestyle coaching experience.

### Objective

To evaluate whether targeted genetic testing improves weight loss outcomes from a personalized lifestyle and habit change coaching experience.

### Methods

This was a retrospective study of participants who engaged for at least 4 months in a personalized habit change coaching program starting between January 1 and February 28, 2020. Participants were required to have an initial body mass index (BMI) of at least 28 kg/m<sup>2</sup>. All participants were offered genetic testing to optimize the delivery of the personalized coaching. The following three candidate gene variants were assessed based on their documented association with obesity: DRD2/ANKK1 rs1800497, FTO rs9939609 and MC4R rs17782313. Two main outcomes were considered: percent weight loss achieved at 12 months (%WL12) and achieving a minimum of 5% weight loss at 12 months (5%WL12). A generalized linear model was used to assess whether %WL12 differed

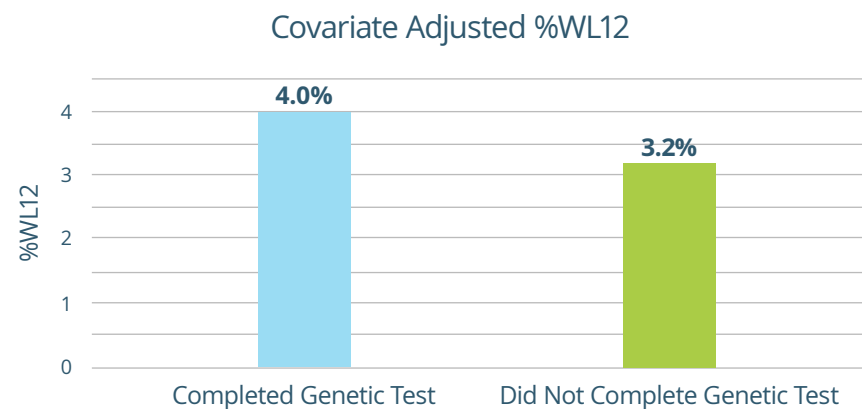
between those who received genetic testing versus those who did not. A logistic model was also used to assess the impact of genetic testing on 5%WL12. Age, sex, ethnic background, initial weight, and personality type were controlled for in all analyses.

### Results

A total of 2297 participants (52% female) met the criteria for inclusion. On average (mean  $\pm$  SD), participants were 45.4  $\pm$  10.7 years and had a BMI of 34.1  $\pm$  5.7 kg/m<sup>2</sup>, respectively. The covariate adjusted %WL12 was significantly higher (p = 0.001) in those taking the test (4.0  $\pm$  0.3) compared to those who did not (3.2  $\pm$  0.2).



The likelihood of achieving 5%WL12 had 1.3 times higher odds in participants taking the genetic test (OR= 1.3; 95%CI: 1.08-1.59) versus those who did not.



### Conclusion

Results suggest that targeted genetic testing can improve the effectiveness of a lifestyle coaching program when properly integrated in terms of the weight loss achieved in response to the experience.

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