

## The Metabolic Risk Impact from Personalized Lifestyle and Habit Change Coaching

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### Background

Metabolic Syndrome is a serious condition that raises the risk of developing heart disease, diabetes, stroke, and other health problems. Effective interventions to reduce metabolic risk and prevent, reverse, and slow the progression of chronic disease can offer significant benefits to the healthcare system including individuals and payers. This study evaluates the impact of personalized lifestyle and habit change coaching on biometric risk factors in an employer population.

### Methods

This was a retrospective study of participants who enrolled in a personalized habit change coaching program from January 2017 through February 2020 and who also had specific biometrics assessed at an employer sponsored biometric screening. The program was designed to reduce overall metabolic risk through improved habit change to nutrition, exercise, and well-being. Eligible participants with at least one abnormal biometric measure were invited to participate. Participants needed a baseline assessment before the start of the program, be actively engaged for a minimum of 6 months and have a follow-up assessment a minimum of 180 days after beginning the program. In addition to age and sex, the biometrics measured and included in the model were waist circumference, systolic blood pressure, HDL, triglycerides, and fasting glucose. The metabolic syndrome severity score was used to assess overall metabolic risk.<sup>1</sup> For comparative purposes we calculated the MetS Severity Score from NHANES data sets.

### Results

753 participants met the criteria for inclusion. The average age of participants was 46.3 years (SD ±9.4), and 85% were female. Comparing baseline to follow-up, all biometrics significantly improved (p < .01). Further, participants in the program decreased their metabolic syndrome severity score by 14.5% (p < .0001). These results exceed an initial trend of -9.9% reported in a published study from a Diabetes Prevention Program non-intervention group.<sup>2</sup> In addition, the natural progression of MetS Severity Score calculated from the NHANES data showed an average increase of ~1.7% per year.



Newtopia's decrease of 14.5% exceeded an initial trend of -9.9% reported in placebo published study and NHANES natural progression score.

### Change in Biometric Measures

| BIOMETRIC MEASURE        | % IMPROVEMENT |
|--------------------------|---------------|
| Waist Circumference (in) | 1.9%          |
| Systolic BP (mmHg)       | 1.8%          |
| HDL (mg/dL)              | 2.2%          |
| Triglycerides (mg/dL)    | 4.7%          |
| A1c %                    | 6.1%          |



### Conclusion

Results suggest that metabolic disease can be prevented and reversed by participating in and adhering to personalized coaching centered on habit change.

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<sup>1</sup> Gurka MJ, Lilly CL, Oliver MN, DeBoer MD. An examination of sex and racial/ethnic differences in the metabolic syndrome among adults: a confirmatory factor analysis and a resulting continuous severity score. *Metabolism*. 2014 Feb;63(2):218-25. doi: 10.1016/j.metabol.2013.10.006. Epub 2013 Oct 24. PMID: 24290837; PMCID: PMC4071942.

<sup>2</sup> DeBoer MD, Filipp SL, Gurka MJ. Use of a Metabolic Syndrome Severity Z Score to Track Risk During Treatment of Prediabetes: An Analysis of the Diabetes Prevention Program. *Diabetes Care* 2018;41:2421-30. doi:10.2337/dc18-1079 PMID: http://www.ncbi.nlm.nih.gov/pubmed/30275282