Quest Diagnostics™

Digital Behavioral Counseling in a Workforce Setting Reduces 8-year Risk of Developing Type 2 Diabetes

Background

- Digital behavioral counseling programs aim to improve behavior by coupling digital devices (eg, scales, pedometers, mobile devices) with online support (eg, lessons, communities, health coaches).
- This approach, when applied to lifestyle modification and sustained weight loss, has been shown to reduce levels of diabetes risk factors, including fasting glucose and HbA1c.[1]
- **Objective:** The investigators of this study evaluated whether a digital behavioral counseling program could help decrease the 8-year risk of developing T2DM within the first year of participation.

Methods

- Study participants had to meet the following criteria:
  - Be enrolled in an employer-sponsored wellness program with year-end biometric screening from 2016 to 2018
  - Have a body mass index (BMI) ≥25 kg/m^2 at the end of 2017
  - Have a prediabetes range of fasting glucose (FG, 100-125 mg/dL), HbA1c (5.7% -6.4%), or both
- Pre-test (before intervention, from 2016 to 2017) and post-test (after intervention, from 2017 to 2018) changes in diabetes risk factors and 8-year risk of diabetes were calculated.[2]
- Paired t-tests were used to compare changes before and after intervention.

Results

- Among the study participants, 631 participated in ≥1 lesson, 536 in ≥4 lessons, 460 in ≥9 lessons, and 357 in ≥16 lessons.
- In all 4 groups (≥1, ≥4, ≥9, ≥16 lessons), biometric variables included in the 8-year risk model (fasting glucose, HbA1c, HDL, triglycerides) shifted in favorable directions after participation (2017-2018). In contrast, the variables shifted in unfavorable directions in the year before participation (2016-2017).
- The 8-year risk of diabetes fell in all 4 populations after participation in the program. In contrast, risk increased in the year before participation.
  - Post-test changes ranged from -0.03 in individuals completing ≥1 lesson to -1.56 in individuals completing ≥16 lessons.
- Weight decreased in all 4 groups after participation in the program. In contrast, weight increased in the year before participation.
  - Post-test changes ranged from -1.5% in individuals completing ≥1 lesson to -2.9% in individuals completing ≥16 lessons.

Conclusions

- Digital behavioral counseling for diabetes prevention can reduce diabetes risk factors and the 8-year risk of diabetes during the first year of the program.

References
1. Birse CE, Lagier RJ, Chew P, et al. [ADA abstract]. *Diabetes.* 2018;67(suppl 1).
2. Leong A, Daya N, Porneala B, et al. *Diabetes Care.* 2018;41:60-68.