

## Risk of Type 2 Diabetes Is Reduced in the Second Year of a Digital Diabetes Prevention Program in a Workplace Setting

### 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.<sup>1</sup>
- Previously, the investigators of this study showed that implementing a digital diabetes prevention program (dDPP) in a workplace setting reduced the 8-year risk of type 2 diabetes within the first year.<sup>2</sup>
- **Objective:** In the current study, the investigators sought to determine if the dDPP also reduced the risk of developing type 2 diabetes in the second year after implementation.

### Methods

- Study participants had to meet the following requirements:
  - Be enrolled in an employer-sponsored wellness program with year-end biometric screening from 2016 to 2019
  - Have a body mass index (BMI)  $\geq 25$  kg/m<sup>2</sup> at the end of 2017
  - Have a prediabetes range of fasting glucose (FG, 100-125 mg/dL), HbA1c (5.7% -6.4%), or both
  - Completed  $\geq 9$  lessons in the dDPP that began in 2018
- Changes in diabetes risk factors and 8-year risk of diabetes were calculated<sup>3</sup> for the year before implementing the dDPP (from 2016 to 2017) and for the second year after implementation (from 2018 to 2019).
- Paired t-tests were used to compare changes before intervention to those for the second year after implementation.

### Results

- Among the 401 qualifying study participants, mean age was 50 years (standard deviation [SD]=9), 77% were women, and an average of 25 dDPP lessons were completed (SD=12).
- Compared to changes before implementing the dDPP (2016 to 2017), changes in the second year after implementation (2018 to 2019) shifted in favorable directions for the following biomarkers (all components of the 8-year diabetes risk score):
  - BMI: -0.4 kg/m<sup>2</sup> (+0.5 vs +0.1;  $P=0.02$ )
  - FG: -4 mg/dL (+4 vs 0;  $P=0.001$ )
  - Triglycerides: -11 mg/dL (+6 vs -5;  $P=0.01$ )
  - HDL-C: +1 mg/dL (0 vs +1;  $P=0.02$ )
- Similarly, year-to-year change in 8-year diabetes risk score improved by a net 4% after DPP implementation: from +4% the year before implementing dDPP to 0% in the second year after implementation ( $P<0.0001$ ).

### Conclusions

- The results of this study indicate that the risk of developing type 2 diabetes in a US workforce was reduced in the second year of a dDPP.

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[https://diabetes.diabetesjournals.org/content/69/Supplement\\_1/59-LB](https://diabetes.diabetesjournals.org/content/69/Supplement_1/59-LB)

#### References

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2. Birse CE, Fragala MS, Satish A, et al. Digital behavioral counseling in a workforce setting reduces 8-year risk of developing type 2 diabetes. *Diabetes*. 2019;68(Suppl1):77-LB.
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