

Researchers identify optimal threshold for HbA1c test for prediabetes

March 13 2012

The American Diabetes Association recommends hemoglobin A1c (HbA1c) testing as one basis for identifying diabetes and prediabetes. Setting a specific HbA1c cutoff threshold for prediabetes, which could be used to determine eligibility for interventions to prevent progression to more serious type 2 diabetes, has generated much debate, with at least three different cutoffs recommended by different professional organizations. A new study led by the Centers for Disease Control and Prevention demonstrates that lowering the cutoff increases the health benefits of preventive interventions, although at higher cost. It concludes that a cutoff level of 5.7% would be cost-effective. The research is published in the April issue of the *American Journal of Preventive Medicine*.

"Large-scale implementation of evidence-based type 2 [diabetes prevention](#) initiatives depends on a clear and efficient strategy to identify individuals at high risk for type 2 diabetes and refer them for intervention. This is the first study to examine the population-level impact and cost effectiveness of using alternative HbA1c cutoffs to determine eligibility for type 2 diabetes preventive interventions," explains lead investigator Xiaohui Zhuo, PhD, from the Division of Diabetes Translation, Centers for Disease Control and Prevention.

The research team used a [simulation model](#) to examine the cost effectiveness associated with each progressive 0.1% decrease in the HbA1c cutoff from 6.4% to 5.5% (6.5% is currently the diagnostic cutoff for diabetes). The simulation used the data of nondiabetic

American adults from the National Health and Nutritional Examination Survey (NHANES 1999-2006). People identified as having [prediabetes](#) were assumed to receive preventive intervention. The study looked at two different interventions: a high cost resource-intensive approach that would cost on average almost \$1,000 per year, and a low cost intervention with an annual cost of \$300 per year.

Researchers measured the cost per each quality-adjusted life year (QALY), a measure of the quality and quantity of life generated by a medical intervention, at each HbA1c cutoff for both interventions. They found that cutoffs of 5.7% and above were cost effective, based on the conventional \$50,000/QALY cost-effectiveness benchmark. Further, the results suggested that the optimal cutoff may be lower if the cost of preventive interventions could be lowered without compromising effectiveness.

Leading clinical and policy-guiding organizations have recommended the HbA1c as an additional diagnostic tool. Its use will likely increase as a screening tool to identify those at high risk for type 2 diabetes.

"Therefore, the economic implications of its use need to be well understood. This study will hopefully stimulate more research on the best strategy for optimizing benefits from type 2 diabetes prevention programs at minimum cost," says Dr. Zhuo.

Provided by Elsevier

Citation: Researchers identify optimal threshold for HbA1c test for prediabetes (2012, March 13) retrieved 28 April 2024 from <https://medicalxpress.com/news/2012-03-optimal-threshold-hb1c-prediabetes.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.
