

Does the HbA_{1c} Criterion for Prediabetes Predict Incident Diabetes?

Measuring both fasting glucose and glycosylated hemoglobin levels might be the best method.

The American Diabetes Association recently added a new criterion for diagnosis of prediabetes — glycosylated hemoglobin (HbA_{1c}) level of 5.7% to 6.4%. To evaluate this new criterion, Japanese investigators studied 6241 people who had five or six consecutive annual health examinations that included measurements of fasting glucose and HbA_{1c} levels.

At their baseline examinations, 2092 patients were identified as prediabetic: 60% by impaired fasting glucose (IFG; 100–125 mg/dL) alone, 20% by HbA_{1c} alone, and 20% by both tests.

During a mean 4.7-year follow-up, 338 patients progressed to diabetes, of whom 292 (86%) had been identified as prediabetic at baseline: 32% by IFG alone, 9% by HbA_{1c} alone, and 46% by both tests. Both IFG alone and HbA_{1c} alone predicted incident diabetes equally strongly, with multivariate-adjusted hazard ratios of about 6, compared with that for baseline normoglycemia. Patients who were prediabetic by both criteria at baseline were 32 times more likely to progress to diabetes than those who were normoglycemic.

Comment: These results are similar to those from a U.S. data set ([Diabetes Care 2010; 33:2190](#)). Impaired fasting glucose and HbA_{1c} measure different aspects of dysglycemia and, together, provide more sensitive and specific prediction of excess risk for diabetes than does either one alone. However, whether this accuracy improves clinically meaningful long-term outcomes remains unclear.

— [Bruce Soloway, MD](#)

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