

The **DETECT-2 Collaboration** is one of the principal studies underpinning the adoption of **HbA1c ≥6.5% (48 mmol/mol)** as the diagnostic threshold for diabetes.

Colagiuri S, Lee CMY, Wong TY, Balkau B, Shaw JE, Borch-Johnsen K; DETECT-2 Collaboration. **Glycemic thresholds for diabetes-specific retinopathy.** *Diabetes Care.* 2011;34(1):145–150. doi:10.2337/dc10-1206.

Key findings

| Feature      | Finding                                                                                                       |
|--------------|---------------------------------------------------------------------------------------------------------------|
| Design       | Pooled international analysis of <b>9 population-based studies</b> from <b>5 countries</b>                    |
| Participants | <b>44,623</b> adults with retinal photography and glycaemic measurements                                      |
| Outcome      | Presence of <b>moderate or worse diabetic retinopathy</b> (chosen because it is highly specific for diabetes) |
| Main result  | Retinopathy prevalence remained low below HbA1c ~6.0%, then increased sharply between <b>6.3% and 6.7%</b>    |
| ROC analysis | Optimal HbA1c threshold <b>6.4%</b>                                                                           |
| Conclusion   | The combined evidence supported <b>HbA1c 6.5%</b> as an appropriate diagnostic cut-off for diabetes.          |

Why this study is influential

Rather than selecting an arbitrary HbA1c value, the investigators anchored the diagnostic threshold to the point at which a **diabetes-specific complication**—moderate diabetic retinopathy—became substantially more prevalent. This complication-based approach is considered more clinically meaningful than defining diabetes solely by population glucose distributions.

How DETECT-2 influenced current practice

The findings from DETECT-2 were a major component of the evidence reviewed by the **International Expert Committee (2009)** and the **WHO (2011)** when they endorsed **HbA1c ≥6.5% (48 mmol/mol)** as the diagnostic threshold. More recently, longitudinal cohort studies have also shown that an HbA1c of approximately **6.5%** predicts future incident retinopathy, providing prospective support for the same threshold.