

Title	Diabetes screening equipment
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Aim

To assess the safety, effectiveness and cost effectiveness of this device in assessing the risk for diabetes mellitus to be used in the Ministry of Health hospitals in Malaysia.

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Conclusions and results

There was limited fair level evidence which indicated that this device could be potentially useful in detecting risk for diabetes mellitus with moderate sensitivity, (67% to 81%) and specificity (54% to 72%) but wide ranges, depending on the cut-off value or positivity threshold as compared to HbA1c (glycated haemoglobin) and fasting plasma glucose. However, there are other possible factors such as patient factors (for example people with local skin condition such as psoriasis, hypohydrosis or hyperhydrosis) and environment factors (for example temperature variation) which may interfere with the validity of the results and device performance. There was no retrievable evidence on its safety and cost effectiveness. Since there was only limited fair level of evidence retrieved, the effectiveness and safety of this device is inconclusive.

Methods

Literature was searched through electronic databases which included PubMed, Medline, Cochrane Database of Systematic Reviews, Cochrane Database of Controlled Trial, Health Technology Assessment, National Horizon Scanning, other websites; INAHTA, ASERNIP-S, CADTH, FDA, MHRA and general databases such as Google. Additional articles retrieved from reviewing the bibliographies of retrieved articles or contacting the authors. A critical appraisal of all relevant literature was performed using Critical Appraisal Skills Programme (CASP) checklists and the evidence graded according to the NHS Centre for Reviews and Dissemination (CRD) University of York, Report Number 4 (2nd Edition) for diagnostic accuracy studies.

Further research/reviews required

Further high quality evidence from larger prospective studies with longer follow-up is required to ascertain its effectiveness and cost-effectiveness in detecting the risk of having prediabetes and diabetes conditions in local population.