Literature review of Diabetes noninvasive screening tools for previously undiagnosed. Scoping review

# Introduction

**Background information on the topic of the review**

Diabetes is a devastating chronic disease. According to a [CDC report](https://www.cdc.gov/diabetes/data/statistics-report/index.html), 11.3% of the US population have Diabetes, and 38.0% of the adult US population has [prediabetes status](https://www.cdc.gov/diabetes/data/statistics-report/index.html). Its prevalence is rising more rapidly worldwide. The existing diabetic patient evaluation, intervention, and monitoring method does not adequately address [the problem](https://scholar.google.com/scholar?hl=en&as_sdt=0%2C47&q=2.%09World+health+Organization.+World+health+statistics+2016%3A+monitoring+health+for+the+SDGs+sustainable+development+goals.+World+Health+Organization%3B+2016+Jun+8&btnG=). So, we need to engage in its prevention proactively. However, the current Diabetes screening method is invasive (blood drawing and test for blood glucose) provided that scarcity of resources and high cost of test kit makes it nonpractical to frequently checkups, which is a hurdle to early detection of the deviation of metabolic status from the typical normal set point. So, it is better to have a self-administered, noninvasive screening tool to be used frequently at a convenience. Thus, this review is designed to answer the question: What is an available Diabetes noninvasive screening tool for undiagnosed?

This review search is intended to determine the presence of self-administered Diabetes noninvasive screening tools for the general population use from previous studies. Therefore, the rationale for this review is to look for tools that are easy for self-administered Diabetes screening to effectively prevent this silent killer disease by detecting its early marker of metabolic abnormality. Knowing the regular status of Diabetes vulnerability in a very accessible way can enable early detection of this metabolic abnormality and facilitate the correction and prevention endeavor.

**Aim**: Searching for reliable research articles on Diabetes noninvasive screening tools for undiagnosed.

**Objective of the study**: to determine the research availability on noninvasive diabetes screening tool

by a systematic process, transparent strategy, standardized data extraction methods and present summary of findings.

**Methodology**

**The search strategy**:

* I developed a search strategy for this systematic search to identify relevant literature.

This search strategy was tailored to five databases: PubMed, MEDLINE, CINAHL, Embase, and SCOPUS.

* The search terms used will be the following: “Diabetes”, “Diabetes screening”, and “Diabetes AND noninvasive AND screening tool.”
* All searches spanned from the inception of the database until 2023 and include Journal articles, review papers, and Research reports Published in English.

**Selection criteria**:

* The selection criteria were based on the [PRISMA framework statement](https://www.acpjournals.org/doi/full/10.7326/0003-4819-151-4-200908180-00135).
* The search mainly focused on Mapping existing literature on Diabetes noninvasive screening in Medicine and Public health.
* The search then narrowed to the subject area to the health-related databases.
* The search span was from inception to 2023.

**Data extraction process**:

In the data extraction phase: -

* The Article must be an original paper, review paper, conference paper, published reports, and case studies.
* The Article must be in English and from the Medicine and Public health field.
* The data extraction includes all-time relevant articles as long as it
  + fulfills the inclusion criteria and the study's objective.
* The extraction will include papers published from all countries.

**Quality assessment**:

* The study is based only on original research articles, review papers, and conference papers.
* All duplicates will be checked thoroughly and removed to maintain the quality of the review.
* The abstracts of the articles were checked deeply for the analysis and purification of the articles to ensure the quality and relevance of academic literature to be included in the review process.
* A careful evaluation of each research paper will be carried out at every stage.
* The exclusion criterion limits papers published in the English language only.

**Limitation of the review**:

* Time constraints may limit the quality of the output
* The search does not include studies in a language other than English, which narrows the available target tool type.