

# Diabetic retinopathy evidence gap map brief | November 2022

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Diabetic retinopathy (DR), a common complication of both type 1 and type 2 diabetes, is recognised as one of the leading causes of blindness and visual impairment globally. (1, 2) Timely diagnosis and treatment are critical to slow disease progression and prevent blindness and visual impairment. (3) DR is a common complication associated with diabetes mellitus (DM), being one of the main reasons behind sight loss. In 2019, the global population with DM was estimated to be 463 million and projected to increase to 700 million by 2045. (3)

In 2020, it was estimated that 103 million adults worldwide were living with DR. (4) A 2021 meta-analysis reported a global DR prevalence of 22%, with 6.17% facing vision-threatening DR, among people with DM. (5) The study, which aimed to assess the prevalence of DR across the different regions according to the International Diabetes Federation regions, found the highest prevalence of DR in Africa (36%). DR prevalence for the remaining regions was 19% for Western Pacific, 19% for Europe, 17% for Southeast Asia and 13% for South and Central America. People with diabetes living in Latin America and the Middle East have a higher risk of developing DR compared to those living in Asia. (5) Projections indicate that by 2045, the number of individuals with DR is expected to increase to 160.50 million, disproportionately affecting people living in the Middle East, North America and the Western Pacific. (5)

When DR is left untreated or undetected, it can lead to serious eye conditions such as diabetic macular oedema, which occurs when blood vessels in the retina leak fluid into the macula, causing blurry vision. To prevent the condition from leading to vision impairment and blindness, screening of all patients with diabetes alongside prompt treatment is essential.

At Sightsavers, our commitment to eye health extends to the development of sustainable, high-quality eye health services and systems. We harness an evidence-based approach to underpin our programmatic decisions, integrating the most reliable evidence from diverse sources into the core of our investment strategies, design and implementation.

The cornerstone of our organisational strategy is an evidence-based methodology. It not only guides well-informed decision-making, but it also identifies innovative methods to fortify eye care within the broader frameworks of health and education systems.

**Evidence gap maps (EGMs)** bring together systematic or literature reviews, a type of desk-based research study done to identify, appraise and synthesise the evidence on a specific topic. When they are done well, these reviews are useful because they identify gaps in knowledge and can inform best practice guidance in a specific area. EGMs provide easy access to these reviews, their methodological quality and the strength of their conclusions.

**This brief presents the findings of our diabetic retinopathy EGM as of November 2022.**

# What is included in the diabetic retinopathy EGM

- Sightsavers' diabetic retinopathy EGM includes 124 reviews on five thematic areas: burden of disease, biomedical research, service delivery, health systems, and impact and economic evaluation.
- To reflect the breadth of synthesis work on diabetic retinopathy, the EGM includes reviews focusing on diabetic macular oedema, a common complication of DR.
- 47% of reviews related to high, middle and low-income settings, 27% do not report the geographical region of included studies, and 13% exclusively include studies from high-income countries. In reading these reviews, it is important to consider if there are factors that make the results only applicable to a specific geographic setting or if they are generalisable.

## Key messages

- No reviews about health systems were identified, which is an important gap in evidence synthesis as we work towards the goals of universal health coverage and health systems strengthening.
- Out of 124 reviews, 93 reached a conclusive answer to the research question. However, we can only be confident in the findings of five reviews, given that the majority of the reviews are either low (51) or medium quality (35).
- The quality of the methodological approach in the available reviews is inconsistent. Out of 124 reviews included in the EGM, only nine are deemed to be of high methodological standard. Given the importance of synthesis work for policy influencing and decision-making, this is an important point to consider. For example:
  - The bulk of the reviews are on the detection of diabetic retinopathy, with 34 reviews. This area witnessed a swift adoption of novel technologies, such as digital diagnostics and artificial intelligence, to improve detection accuracy and efficiency. However, the quality of these reviews underscores the need for high-confidence reviews.
  - Out of 33 reviews reporting treatment of diabetic retinopathy, only four are deemed high quality. Most reviews under this thematic area are of low methodological standard, reporting strong conclusions in response to their research question.
  - The three reviews addressing access to services found strong findings in response to their research question. However, the findings should be analysed with caution due to their low and medium methodological quality standards.
  - A greater focus on equity is needed. Further research to determine the prevalence of diabetic retinopathy and access to services in different population groups is needed. None of the reviews focus on gender equity.

# References

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