

Time Trends and Demographic Disparities in Blindness Incidence Among Diabetic Patients in Israel, 2012–2024

A Nationwide Population-Based Analysis of the Israeli National Diabetes Registry (INDR)

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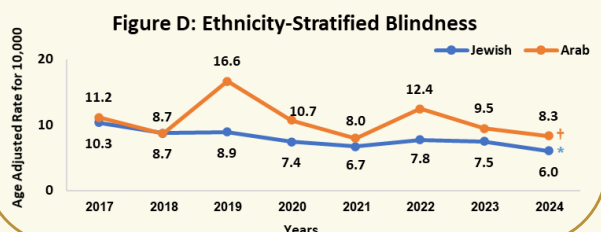
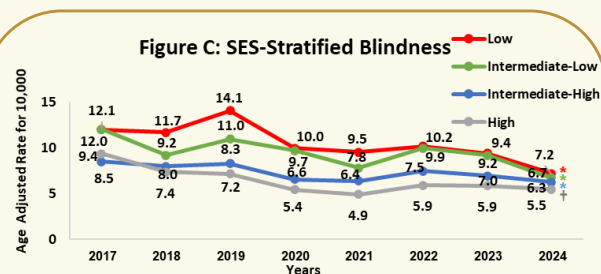
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Scientific Background

- The National Trend:** National all-cause blindness decline in Israel has plateaued between 2009–2020 per prior study, suggesting "exhaustion" of preventive strategies at the national level.
- Evolving Diabetes Care:** Preserving visual function is a public health priority. As diabetes is a leading cause of preventable vision loss – Does the national plateau holds true for the diabetic population despite the inclusion of advanced vision-preserving technologies (e.g. Anti-VEGF injections, GLP-1 RA) in the National Health Basket?
- Study Objective:** To evaluate blindness incidence trends and to identify sectoral disparities among patients in the Israeli National Diabetes Registry (INDR) using real-world data (RWD) over a thirteen-year period.

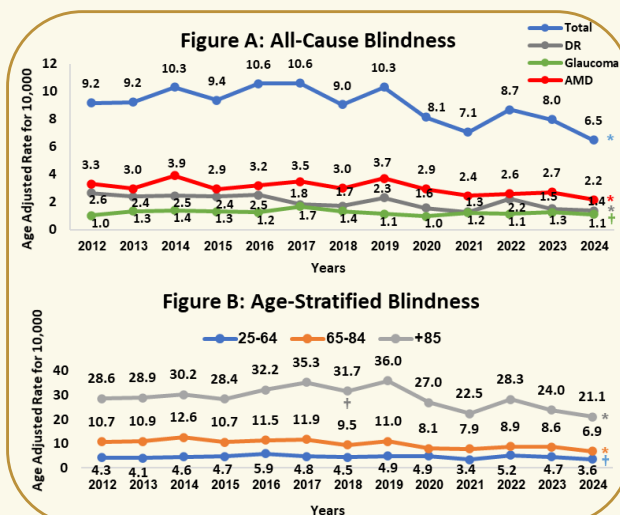
Methods

- This Nationwide population-based cohort study cross-linked the Israeli National Diabetes Registry (comprising annual data from all Health Maintenance Organizations) with the National Registry of the Blind (2012–2024).
- Annual age-standardized incidence was stratified by demographics, socioeconomic status (SES), and etiology (Diabetic Retinopathy [DR], Glaucoma, and Age-related Macular Degeneration [AMD]).
- Joinpoint regression models determined significant inflection points and the Annual Percent Change (APC).



Results

- Overall Trends:** Despite a 41% increase in diabetes prevalence, age-standardized blindness incidence significantly declined from 9.2 to 6.5 per 10,000 (APC = -2.6%, P = 0.01) (Fig. A).
- Clinical Etiology:** Significant declines were observed in Diabetic Retinopathy (APC = -4.9%, P < 0.05) and AMD (APC = -2.9%, P < 0.05), while Glaucoma rates remained stable (Fig. A).
- Demographics:** Reductions were most notable among males, ages 65–84 (Fig. B), and low-to-mid socioeconomic groups (Fig. C).
- Disparities:** A significant decline in the Jewish population (APC = -5.8%, P < 0.01) was evident, while in the Arab population, non-significant trend was observed (P = 0.41) (Fig. D).



* significant trend (P < .05), † non-significant trend (P ≥ .05)

Conclusions

- Successful Trends:** Despite rising diabetes prevalence, age-standardized blindness incidence significantly declined, suggesting a positive impact of robust prevention efforts and expanded coverage of National Health Basket vision-preserving technologies.
- Sectoral Disparities:** The lack of decline within the Arab population highlights persistent healthcare disparities that have not been bridged by general national trends.
- Policy Directive:** Achieving health equity necessitates dedicated policy and targeted interventions alongside continued longitudinal surveillance to address sector-specific barriers.

Policy Implication



Universal Access: Declining blindness incidence highlights the real world value of the National Health Basket; sustaining investment in and universal access to vision-preserving technologies remains a public health priority.



Addressing Sectoral Disparities: Stagnant trends in the Arab population necessitate targeted sectoral interventions, including culturally adapted screening and enhanced healthcare accessibility, to ensure health equity.



Proactive Surveillance: Ongoing monitoring of etiology-specific trends and disparities is key to informing policy-decision makers on national healthcare resource allocation and support the evidence-based evaluation of clinical practices.

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