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1. Varilux® Physio® extensee™ – in-real life consumer study – Eurosin – 2024 – France (n=79 progressive lens wearers).



I-SCREEN: Transforming Eye Care with AI-Driven AMD Detection

Age-related macular degeneration (AMD) is a leading cause of vision loss among individuals over 50 in Europe, affecting approximately 67 million people across Europe. Often progressing silently until significant vision impairment occurs, AMD presents a substantial public health challenge. The I-SCREEN project, funded under the European Union's Horizon Europe Framework Programme (GA No 101130093), aims to revolutionise the early detection and management of AMD through the integration of artificial intelligence (AI) and cloud-based technologies.

Project Overview

Launched on January 1, 2024, the I-SCREEN project is a four-year initiative, supported by the European Innovation Council's Pathfinder programme. The project brings together a multidisciplinary consortium of twelve institutions from across Europe, led by the Medical University of Vienna (Austria), and including other partners from Austria (RetInSight), France (Centre Hospitalier Reg Universitaire Dijon), Slovenia (Univerzitetni Klinični Center Ljubljana), Spain (Fundacio de Recerca Clinic Barcelona-Institut D Investigacions Biomediques August Pi I Sunyer and Hospital Clinic De Barcelona), Germany (Eurice European Research and Project Office GmbH), Croatia (Research and Innovation Services doo za usluge) and Switzerland (European Council of Optometry and Optics). The primary objective is to develop an AI-based infrastructure capable to screen for and predict the progression of AMD. This will support the delivery of accessible, shared care across Europe.

Innovative Approach

I-SCREEN leverages AI algorithms to analyse Optical Coherence Tomography (OCT) images, enabling the early identification and risk assessment of AMD. This approach empowers opticians and optometrists to participate actively in primary eye care, enhancing early detection rates and ensuring timely referrals for treatment.



By integrating these AI tools into OCT scanners commonly found in local optometry practices, the project facilitates real-world screening and monitoring of AMD progression. This approach empowers opticians and optometrists to participate actively in primary eye care, enhancing early detection rates and ensuring timely referrals for treatment.

ECOO plays a big role in leading a part of the study, which is pivotal in establishing and managing a network of optical and optometric practices across Europe to facilitate the early detection of Age-Related Macular Degeneration (AMD). There are currently 22 optometric sites across 6 European countries, including Slovenia, Austria, Switzerland, France, Spain and United Kingdom, who are collecting OCT images from 5000 individuals aged 55 and older who maintain good functional vision. Those images are uploaded via a dedicated platform to retinal experts at the Medical University of Vienna for review and give feedback to the optometrist sites.

Shared Care Model

A cornerstone of the I-SCREEN project is the implementation of an AI-driven shared care model. This model promotes collaboration between community-based eye care professionals and specialized ophthalmologists, ensuring that patients receive comprehensive care throughout the disease continuum. By decentralizing AMD detection and monitoring, the project aims to make eye care more accessible and cost-effective, particularly for populations in underserved areas.



Research and Development

The consortium is conducting extensive research to refine AI algorithms for accurate detection and progression prediction of AMD. Clinical sites, for instance, are recruiting a cohort of patients with intermediate AMD to monitor over two years, aiming to identify early transitions to late-stage AMD. These insights will inform the development of AI models suitable for community-based screening programs.

Impact and Future Implications

The successful implementation of the I-SCREEN project has the potential to transform eye care delivery across Europe. By enabling early detection and intervention, the project seeks to reduce the burden of AMD-related vision loss, improve patient outcomes, and alleviate pressures on healthcare

systems. Furthermore, the project serves as a proof of concept for the integration of trustworthy autonomous AI systems in disease detection, setting the stage for broader applications in healthcare.

Conclusion

The I-SCREEN project represents a significant advancement in the fight against age-related macular degeneration. Through the integration of AI and collaborative care models, it aims to enhance early detection, improve patient outcomes, and make eye care more accessible across Europe. As the project progresses, it holds promise for reshaping the landscape of ocular healthcare and serving as a model for future AI-driven healthcare initiatives.

To learn more, we invite you to explore the project's official website: <https://www.i-screen.eu/>

