

Revolutionising Eye Health: New I-SCREEN Project Integrates Artificial Intelligence (AI) for Early Detection of Age-Related Macular Degeneration

Leading the charge in redefining eye care, the innovative EU project I-SCREEN sets out to tackle age-related macular degeneration (AMD), the predominant cause of severe vision loss in individuals aged 55 and above.

[Vienna, 25 March 2024] – With a mission to transform eye care, the I-SCREEN project is pioneering an AI-based infrastructure to identify and monitor age-related macular degeneration (AMD) at its earliest stages. AMD is a prevalent condition affecting an estimated 67 million citizens in the EU28, including the UK, making it a significant public health concern.

Utilising the precision of AI, the project aims to revolutionise AMD care by introducing a unique AI-powered platform compatible with optical coherence tomography (OCT) scanners found in community-based eye-care professional offices. This approach empowers non-clinical eye care professionals, improving early detection rates and facilitating timely treatment.

Bringing together twelve partnering institutions from across Europe, I-SCREEN will receive more than EUR 4.7 million from the prestigious European Innovation Council's (EIC) Pathfinder programme over the next four years. An important pillar of the European Union's Horizon Europe Framework Programme for Research and Innovation, the EIC Pathfinder programme targets visionary and disruptive innovations that can bring about decisive societal transformations while addressing global challenges.

Addressing a Silent Threat

AMD poses a significant healthcare challenge, often slipping under the radar until severe vision loss occurs. The I-SCREEN project is dedicated to addressing this silent threat, leveraging AI and cloud technology to make early AMD detection and treatment accessible to citizens through their local optician or optometrist.

The project's unique approach involves developing AI-powered diagnostic tools for OCT image analysis complementary to the clinical setting, introducing a new concept of AI-driven shared care. This initiative seeks to transform the management of AMD and provide a therapeutic chance of benefit for affected individuals to experience timely referral to therapeutic intervention whenever needed.

Beyond Eye Health: A Comprehensive Approach

The economic and social impact of the I-SCREEN project extends beyond eye health. By enabling opticians and optometrists to contribute to primary care through AI-based disease detection, the project supports a shift in care-sharing.

Introducing AI-based decision support systems, the project brings precision medicine to ocular and systemic disease management. This system significantly reduces the disease burden, enabling early asymptomatic disease diagnosis with optimal cure perspectives.

Scientific Advancements and Future Implications

Serving as a proof of concept for trustworthy autonomous AI systems in disease detection, the I-SCREEN team contributes to the broader field of AI in healthcare. The reported sensitivity and specificity of AI systems influence the adoption rate among healthcare professionals, setting the stage for scientific advancements in the knowledge of AMD pathomechanisms.

I-SCREEN coordinator Professor Ursula Schmidt-Erfurth from Medizinische Universität Wien, highlighted the key objective of the project: *"In AMD, as a population-wide burden, early detection resulting in timely treatment and a wide access to care is paramount. It is our responsibility in healthcare to bundle forces in respect to human expertise and technology to provide life-long vision for the entire society."*

The I-SCREEN project is made possible through the collaboration of a multidisciplinary consortium. This consortium brings together a network of clinical retina experts, computer scientists working at the cutting edge of AI development, an infrastructure of community-based opticians/optometrists, and an SME experienced in clinical decision support systems for ophthalmology. Together, the partners are dedicated to developing innovative and trustworthy AI tools for broad, real-time AMD screening and monitoring via a cloud-based infrastructure with broad access. This collaborative effort underscores the transformative potential of technology in addressing pressing healthcare challenges and reshaping the landscape of eye care delivery on a community base.

For more information about the I-SCREEN project, please visit i-screen.eu or follow us on LinkedIn ([I-SCREEN](#)).

Key facts

Full name

I-SCREEN: A real-world AI-based infrastructure for screening and prediction of progression in age-related macular degeneration (AMD) providing accessible shared care

Start date

1 January 2024

Duration

48 months (1 January 2024 – 31 December 2027)

Budget

4.7 Mil €

Coordinator

Medizinische Universität Wien

Social Media

[LinkedIn](#)

Website

i-screen.eu

Project Partners

- Medizinische Universität Wien (Austria)
- RetInSight GmbH (Austria)
- Centre Hospitalier Universitaire Dijon (France)
- The Queen's University of Belfast (United Kingdom)
- Univerzitetni Klinični Center Ljubljana (Slovenia)
- Fundació De Recerca Clinic Barcelona (Spain)
- Hospital Clínic de Barcelona (Spain)
- EURICE - European Research and Project Office (Germany)
- RISE - Research and Innovation Services (Croatia)
- European Council of Optometry and Optics (Switzerland)
- Universität Zürich (Switzerland)
- Vista Klinik Binningen (Switzerland)

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