

Revolutionising Alzheimer's Diagnosis with Light-Based Blood Test



A team of researchers are exploring the possibility of creating a blood test aimed at early Alzheimer's detection. The group from the University of York is exploring the use of light-based technology to identify specific disease-related protein levels in blood samples. Additionally, they are working on a portable device that could offer diagnoses in mere seconds. Funding for this innovative research is provided by both the Alzheimer's Society and Alzheimer's Research UK.

Advancements in Non-Invasive Alzheimer's Diagnosis Technology

Dr. Steven Quinn, a member of the University's School of Physics, Engineering, and Technology, highlighted the potential of this technology to diagnose Alzheimer's without the need for invasive and expensive hospital procedures. He also mentioned its capacity to enhance the monitoring of patients undergoing treatment by detecting fluctuations in the levels of disease-associated proteins in the bloodstream. The team at the University of York behind this groundbreaking test believes it will offer a more cost-effective, accurate, and less invasive alternative to traditional brain scans or lumbar punctures.

Critical Need for Early Detection and Monitoring of Alzheimer's Disease

The method operates by directing light beams onto a chemical-coated sensor that captures amyloid and tau proteins. Subsequent measurements of light property changes indicate the presence of biomarkers indicative of Alzheimer's-related brain changes. Its sensitivity allows for the detection of low-concentration proteins and their ratios in the blood. The global prevalence of Alzheimer's is expected to nearly triple by 2050, underscoring the urgency for early detection tools. Dr. Quinn emphasised the urgency of the situation, revealing that the number of people with Alzheimer's in the UK is anticipated to rise from 900,000 to 1.6 million by 2040. He stressed the importance of early diagnosis, which could facilitate prompt intervention as emerging treatments become available. Dr. Richard Oakley from the Alzheimer's Society described dementia as the leading cause of death in the UK, noting that one-third of affected individuals remain undiagnosed. This lack of diagnosis deprives them of essential care, support, and potential future treatments.

Sheona Scales, Director of Research at Alzheimer's Research UK, emphasised the importance of early and accurate dementia diagnosis, especially with emerging treatments targeting early-stage Alzheimer's. While no blood tests for Alzheimer's have been validated in the UK, ongoing research aims to provide the necessary evidence for implementing blood-based diagnostic methods into healthcare systems.

Source: [University of York](#)

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