**Literature review**

<https://www.bbc.com/news/articles/cj620yl96kzo-> August 31, 2024

Artificial intelligence (AI) has the potential to assist GPs in identifying patients most at risk of developing conditions that could lead to fatal heart problems. A notable example is the AI system Optimise, which was trained by the University of Leeds and has analyzed the health records of over two million individuals.

<https://www.ahajournals.org/doi/10.1161/CIR.0000000000001201#:~:text=A%20major%20focus%20of%20academia,%20industry,%20and> - 28 February 2024

The article focuses on developing AI and advanced analytical tools in healthcare, particularly for cardiovascular and stroke care. The American Heart Association supports precision medicine tools to enhance research, prevention, and individualized care. Despite potential benefits, challenges remain in the broad adoption of AI tools. The statement explores the current use of AI in diagnosing and treating cardiovascular diseases and aims to improve clinical insights, address biases, and enhance education. It seeks to identify best practices and challenges to advance the field further.

[Adopting artificial intelligence in cardiovascular medicine: a scoping review | Hypertension Research (nature.com)](https://www.nature.com/articles/s41440-023-01469-7#:~:text=We%20analyzed%20cardiovascular%20research%20in) - Published: 31 October 2023

Cardiovascular medicine has significantly transformed in recent years due to artificial intelligence (AI) advances. A review of 140 studies reveals a more than tenfold increase in AI applications across multiple subspecialties, such as general cardiology and heart failure, with deep learning playing a pivotal role. Most AI efforts aim to improve diagnostics and prognostics using hospital datasets and imaging technologies. Despite progress, AI's full integration into clinical decision-making remains limited, highlighting the need to align technological advancements with medical ethics.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9947926/#:~:text=A%20large%20number%20of%20studies%20have%20reported>

Artificial intelligence (AI) is increasingly used in biomedical fields, particularly cardiovascular care. AI techniques help identify patients at risk for cardiovascular disease (CVD) more precisely than traditional methods. However, successful AI applications require understanding potential pitfalls to ensure safe and effective clinical use. This review discusses the pros and cons of AI methods in developing predictive models and risk assessment tools for cardiovascular applications. AI's role in cardiovascular research and patient care is growing. Machine learning models may outperform traditional models, but this can vary by setting. Understanding AI fundamentals is crucial for applying these techniques and evaluating related research.

<https://www.sciencedirect.com/science/article/pii/S2772442522000016#:~:text=The%20paper%20focuses%20on%20the%20construction%20of> - November 2022

The paper details developing an AI-based heart disease detection system using machine learning algorithms. It discusses a Python application for healthcare research, outlining data processing with categorical variables and the main development phases: database collection, logistic regression, and dataset evaluation. A random forest classifier is implemented, achieving approximately 83% accuracy on training data. The results show improved diagnostic accuracy. The paper concludes with objectives, limitations, and research contributions.