

AI software shows significant improvement in skin cancer detection, new study shows

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Skin cancer detection using artificial intelligence (AI) software has rapidly improved, new research has shown, with the latest software reaching a 100% detection rate for melanoma.

The study, presented today at the [European Academy of Dermatology and Venereology \(EADV\) Congress 2023](#), assessed 22,356 patients with suspected [skin cancers](#) over a 2.5-year period.

As well as a 100% (59/59 cases identified) sensitivity for detecting melanoma, the most serious form of skin cancer, the new software correctly detected 99.5% (189/190) of all skin cancers and 92.5% (541/585) of pre-cancerous lesions.

The third version of the AI software marks a significant improvement from the first model, tested in 2021, which detected 85.9% (195/227) of cases of melanoma, 83.8% (903/1078) of all skin cancers and 54.1% (496/917) of pre-cancerous lesions.

Lead author Dr. Kashini Andrew, Specialist Registrar at University Hospitals Birmingham NHS Foundation Trust, comments, "This study has demonstrated how AI is rapidly improving and learning, with the high accuracy directly attributable to improvements in AI training techniques and the quality of data used to train the AI. The latest version of the [software](#) has saved over 1,000 face-to-face consultations in the secondary care setting between April 2022 and January 2023, freeing up more time for patients that need urgent attention."

While the data is incredibly encouraging, the research team notes that AI should not be used as a standalone detection tool without the support of a Consultant Dermatologist. Of the basal cell carcinoma cases, a single case was missed out of 190, which was later identified at a second read by a dermatologist "safety net." This further demonstrates the need to have appropriate clinical oversight of the AI.

Co-author Dr. Irshad Zaki, Consultant Dermatologist at University Hospitals Birmingham NHS Foundation Trust, also explains, "We would like to stress that AI should not be used as a standalone tool in skin

cancer detection and that AI is not a substitute for Consultant Dermatologists."

"The role of AI in dermatology and the most appropriate pathway are debated," says Dr. Andrew. "Further research with appropriate clinical oversight may allow the deployment of AI as a triage tool. However, any pathway must demonstrate [cost-effectiveness](#), and AI is currently not a stand-alone tool in dermatology. Our data shows the great promise of AI in future provision of health care."

Provided by European Academy of Dermatology and Venereology

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