

## Press Release

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

(Thursday, 12 October 2023, Berlin, Germany) 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.<sup>1</sup>

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.<sup>1</sup>

As well as a 100% (59/59 cases identified) sensitivity for detecting melanoma - the most serious form of skin cancer<sup>2</sup> - the new software correctly detected 99.5% (189/190) of all skin cancers and 92.5% (541/585) of pre-cancerous lesions.<sup>1</sup>

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 melanoma, 83.8% (903/1078) of all skin cancers and 54.1% (496/917) of pre-cancerous lesions.<sup>1</sup>

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,<sup>3</sup> freeing up more time for patients that need urgent attention."

Whilst the data is incredibly encouraging, the research team note 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'.<sup>2</sup> This further demonstrates the need to have appropriate clinical oversight of the AI.

The 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 healthcare."

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**Note to editors:**

A reference to the EADV Congress 2023 must be included in all coverage and/or articles associated with this study.

For more information or to arrange an expert interview, please contact Phoebe May at [phoebe.may@emotiveagency.com](mailto:phoebe.may@emotiveagency.com) or [press@eadv.org](mailto:press@eadv.org).

**\*Table 1: AI Performance by Version % (n/N), Confidence intervals in square brackets:<sup>1</sup>**

	AI Version 1 (20 Apr 2020 to 14 Jul 2021)	AI Version 2 (15 Jul 2021 to 21 Apr 2022)	AI Version 3 (22 Apr 2022 to 5 Jan 2023)
Melanoma sensitivity	85.9% (195/227) [80.8-89.8%]	97.1% (135/139) [92.8-98.9%]	100% (59/59) [93.9-100%]
All skin cancer sensitivity	83.8% (903/1078) [81.4-85.8%]	98.5% (743/754) [97.4-99.2%]	99.5% (189/190)* [97.1-99.9%]
Pre-malignant sensitivity	54.1% (496/917) [50.9-57.3%]	94.0% (736/783) [92.1-95.5%]	92.5% (541/585) [90.1-94.3%]
Benign lesion specificity	79.7% (2879/3614) [78.3-80.9%]	49.4% (1408/2853) [47.5-51.2%]	75.3% (1856/2465) [73.6-77%]

\*1x basal cell carcinoma diagnosis as benign

**About the study author:**

Dr Kashini Andrew is a Specialist Registrar at University Hospitals Birmingham NHS Foundation Trust, Birmingham, UK.

**About the study co-author:**

Dr Irshad Zaki is a Consultant Dermatologist at University Hospitals Birmingham NHS Foundation Trust, Birmingham, UK.

**About EADV:**

Founded in 1987, EADV is a non-profit organisation with a vision to form a premier European Dermatology-Venereology Society. The Academy counts over 9000 members from 120 countries, providing a valuable service for every type of dermatologist-venereologist professional. The EADV is dedicated to advancing patient

care, education and research by providing a unique platform to bring people together and share ideas.

This year, the EADV Congress will take place in Berlin, Germany, and online from 11–14 October 2023.

Find out more via the EADV website: <https://www.eadv.org/>

### **References:**

1. Andrew, K *et al.* Continued Improvement of Artificial Intelligence in Identifying Skin Cancer (e-poster). Presented at the EADV Congress 2023; 12 October 2023; Berlin, Germany.
2. NHS. Overview: Skin cancer (non-melanoma). (Last updated January 2020). Available at: <https://www.nhs.uk/conditions/non-melanoma-skin-cancer/> (Accessed: September 2023).
3. Andrew, K *et al.* Continued Improvement of Artificial Intelligence in Identifying Skin Cancer (abstract). Presented at the EADV Congress 2023; 12 October 2023; Berlin, Germany.