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Autonomous AI could create capacity for thousands more dermatology appointments, real-world study finds

(Vienna, Austria, Wednesday, 30 September 2026) A real-world study of 8,391 patients found that autonomous artificial intelligence (AI) could free up enough clinical capacity to provide more than 8,500 additional face-to-face dermatology appointments across two UK hospitals over 16 months.¹

The findings, presented today at the European Academy of Dermatology and Venereology (EADV) Congress 2026, suggest that an autonomous AI as a medical device (AlaMD) could help address growing pressure on dermatology services. By identifying patients with benign lesions referred on urgent suspected skin cancer pathways, the technology could enable safe management without specialist review, allowing dermatologists to focus their expertise on patients who need it most.

Urgent suspected skin cancer referrals in England have almost tripled since 2009, yet around only 6% result in an urgent skin cancer diagnosis.² At the same time, approximately one in four dermatologist roles in the UK is unfilled, creating a growing imbalance between demand and specialist capacity.³

The autonomous AI-supported pathway managed 8,391 patients, representing 94% of urgent suspected skin cancer referrals across the two hospitals. Overall, 86% of patients consented to autonomous decision-making. According to the researchers, this represents the first large-scale dataset from a prospective real-world deployment of autonomous AI within a cancer pathway.

Following an initial validation period, a CE-marked Class III AI medical device was introduced across the two sites. Using clinical and dermoscopic smartphone images, the system classified skin lesions, autonomously discharging benign cases while referring higher-risk cases for teledermatologist review.

After exclusions, the AI autonomously discharged 31% and 25% of patients at the two hospitals without clinician review. Teledermatologists subsequently discharged a further 24% and 25%, respectively.

Compared with standard teledermatology, the autonomous pathway reduced the proportion of patients requiring routine follow-up from 27% to 12%. Biopsy rates were also lower at 27% compared with 43% for conventional face-to-face care.

Overall, the autonomous pathway was estimated to save 2,851 hours of clinician time compared with a traditional face-to-face pathway, representing an approximate 62% gain in clinical capacity. Based on 20-minute consultations, this was equivalent to more than 8,500 additional face-to-face appointments over the 16-month study period.

Dr Lucy Thomas, lead author, explained, "We believe the greatest value of autonomous AI lies not in the technology itself, but in the specialist capacity it unlocks. Every hour saved reviewing low-risk lesions can be reinvested in patients with skin cancer, helping them access timely treatment to improve prognosis, and in patients with severe inflammatory skin disease, where earlier access to specialist care and effective treatments can transform quality of life."

Ongoing safety monitoring of the autonomous pathway was also a key part of the study. In a national dataset including both study sites, sensitivity exceeded 98% for invasive melanoma, squamous cell carcinoma (SCC) and basal cell carcinoma (BCC), with a specificity of 72.1%. Six false-negative cases were discharged from the pathway – five basal cell carcinomas and one melanoma in situ – which were identified through post-market surveillance, with no adverse outcomes identified within the available follow-up.

"One of the key lessons for us is that deploying an AI system safely isn't a one-off exercise," said Dr Thomas. "You need to keep monitoring it, understand when things go wrong, learn from those cases and make sure patients themselves know what to look out for."

"If these findings are replicated across larger populations and different healthcare settings, autonomous AI could become an important part of creating a more sustainable dermatology service – not by replacing dermatologists, but by allowing scarce specialist expertise to be focused where it can make the greatest difference to patients' lives," Dr Thomas concluded.

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Note to editors:

A reference to the EADV Congress 2026 must be included in all coverage and/or articles associated with this study.

For more information or to arrange an expert interview, please contact press@eadv.org.

About the study authors:

Dr Lucy Thomas is a consultant dermatologist at Chelsea & Westminster Hospital NHS Foundation Trust and honorary clinical lecturer at Imperial College London. A recognised leader in digital dermatology and artificial intelligence, she has led the development of pioneering teledermatology and AI-enabled skin cancer services within the NHS, including the world's first autonomous AI skin cancer pathway. She has received support from L'Oréal through an innovative NHS-industry partnership focused on service transformation and digital innovation. Her work has received national recognition, including HSJ Awards for improving cancer outcomes and clinical safety, and a National Clinical Impact Award. Dr Thomas is lead co-author of the *NHS AI in Dermatology Implementation Toolkit* and advises on digital dermatology strategy and innovation. She also serves as an

independent consultant and sits on the Clinical Advisory Board for Skin Analytics Ltd.

About the study:

The study used a CE-marked AI medical device funded by Chelsea & Westminster Hospital NHS Foundation Trust and the study was partly supported by a grant from La Roche-Posay (L'Oreal Dermatological Beauty). La Roche-Posay's mission has long centred on making dermatology more accessible, supporting people of all ages and skin tones, including those living with skin conditions or undergoing cancer treatment. Through this collaboration, the brand is supporting Trust-led research and education that builds on existing NHS innovation and helps advance skin cancer care responsibly.

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 12,000 members from all around the globe, 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 Vienna, Austria, and online from 30 September - 3 October 2026. Find out more: <https://eadv.org/congress/>

References:

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2. Mitra, A., van Bodegraven, B., Venables, Z.C. (2026). P206 Conversion rates for urgent suspected skin cancer referrals in England 2009–2023. *British Journal of Dermatology*. 2026;195(Suppl 1). doi:10.1093/bjd/ljag086.233.
3. Levell, N. (2021). *Dermatology GIRFT Programme National Specialty Report*. GIRFT, NHS England. Available at: https://gettingitrightfirsttime.co.uk/medical_specialties/dermatology/