



## Artificial Intelligence (AI) tool for measuring eczema severity in diverse skin tones

An AI tool for remote assessment of eczema severity for diverse skin types.

### Proposed use

Eczema is an itchy, chronic inflammatory skin condition that affects approximately 20% of UK children with a high socioeconomic burden. Timely and adequate treatment is critical to manage eczema symptoms to avoid worsening. Tele-dermatology is fast becoming the norm. Eczema severity assessment is critical for deciding which treatments are needed and if specialist referral to secondary care is required.

### Problem addressed

The inaccurate estimation of severity may frequently lead to inappropriate treatments, resulting in either the exacerbation of symptoms through undertreatment or increased costs due to unnecessary interventions. At present, there is a lack of a structured method for assessing eczema severity on 2D images (especially for darker skin tones) and devising individualized treatment strategies. This invention addresses these issues and helps provide timely treatment and referrals.

### Technology overview

This innovative solution introduces a standardised assessment for eczema severity in telemedicine using a convolutional neural network models-based machine learning approach. Furthermore, we are currently in the process of development to generate treatment strategies through the utilization of Bayesian statistical machine learning models that can predict how eczema severity changes over time.

### Inventor information

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### Benefits

- Standardise eczema severity assessment for telemedicine
- Reduce costly in-person assessments
- Allow wider participation in clinical trials
- Help providing timely treatment and referral

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