**Supplementary**

**Table S1.** Prediction of filaggrin gene loss-of-function mutation (homozygous, compound heterozygous, or heterozygous) for both thenar eminence and palmar images using hyperlinearity scores and age with logistic regression and linear support vector machine classification

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Classifier | Thenar images | | | | Palmar images | | | |
| Accuracy | Sensitivity | Specificity | Area under curve (AUC) | Accuracy | Sensitivity | Specificity | Area under curve (AUC) |
| Logistic regression | 65.6% (±6.4) | 57.7% (±10.5) | 70.9% (±10.3) | 76.9% (±4.5) | 62.7% (±7.8) | 51.5% (±10.1) | 70.3% (±9.8) | 62.8% (±8.8) |
| Support vector machine (linear) | 74.2% (±3.1) | 52.0% (±6.7) | 89.3% (±7.5) | 70.3% (±6.7) | 70.2% (±4.8) | 47.7% (±4.5) | 85.5% (±7.4) | 74.5% (±6.2) |

Presented as percentage (standard deviation)

**Table S2.** Prediction of filaggrin gene loss-of-function mutation (homozygous, compound heterozygous, or heterozygous) for both thenar eminence and palmar images with logistic regression and linear support vector machine classification using expanded variable set (hyperlinearity score, age, sex, Eczema Area and Severity Index (EASI), presence of asthma, presence of hayfever, and presence of food allergy)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Classifier | Thenar images | | | | Palmar images | | | |
| Accuracy | Sensitivity | Specificity | Area under curve (AUC) | Accuracy | Sensitivity | Specificity | Area under curve (AUC) |
| Logistic regression | 72.0% (±7.8) | 57.2% (±11.6) | 81.0% (±10.2) | 74.1% (±10.9) | 64.6% (±9.6) | 46.2% (±12.1) | 76.3% (±8.7) | 63.8% (±12.5) |
| Support vector machine (linear) | 74.8% (±6.3) | 52.7% (±11.9) | 88.8% (±6.1) | 70.3% (±6.7) | 70.5% (±9.2) | 50.4% (±16.1) | 83.5% (±8.1) | 72.6% (±11.1) |

Presented as percentage (standard deviation)