

DIPSOC Supplementary 1

Diagnostic accuracy of the predictive model stratified for subgroups

The sensitivity, specificity and AUC for <10 years vs ≥10 years were as follows: 65.7% vs 85.3%, 89.8% vs 76.6%, 0.83 (0.77, 0.89) vs 0.87 (0.81, 0.93). The sensitivity, specificity and AUC for males vs females were as follows: 64.2% vs 76.1%, 89.5% vs 74.6%, 0.86 (0.80, 0.92) vs 0.82 (0.75, 0.89). The sensitivity, specificity and AUC for dermatology background vs no dermatology background were as follows: 78.9% vs 66.7%, 77.3% vs 87.3%, 0.85 (0.79, 0.90) vs 0.84 (0.78, 0.90).

Worked examples using the predictive criteria

A child with all 7 best predictive criteria has a 99% probability of having psoriasis. Linear predictor = $-1.717 + 0.595(1) + 0.644(1) + 1.013(1) + 1.173(1) + 0.701(1) + 1.05(1) + 1.276(1) = 4.735$. Probability of having psoriasis = $\exp(4.735)/(1 + \exp(4.735)) = 0.99$.

A child with the following 2 diagnostic criteria “scale and erythema on the scalp involving the hairline” and “positive family history” has a 54% probability of psoriasis. Linear predictor = $-1.717 + 0.595(1) + 1.276(1) = 0.154$. Probability of having psoriasis = $\exp(0.154)/(1 + \exp(0.154)) = 0.54$.

Table S1 Internal validation of the predictive model

	Mean	95%CI
Apparent performance		
c-statistic	0.85	0.78, 0.91
Calibration in the large (CITL)	2.24	-6.22, 1.62
Calibration slope	1	1, 1
Original sample		
c-statistic	0.84	0.80, 0.85
Calibration in the large (CITL)	0.02	-0.36, 0.45
Calibration slope	0.93	0.67, 1.17
Optimism in the performance		
C-statistic	0.01	-0.06, 0.07
Calibration in the large (CITL)	-0.02	-0.45, 0.36
Calibration slope	0.07	-0.17, 0.33

Table S2 Interobserver variability

Diagnostic criteria	Kappa*	% agreement
DC1*	0.69	84.6
DC2	0.49	74.4
DC3*	0.68	84.6
DC4	0.56	81.1
DC5*	0.64	82.1
DC6	0.45	89.7
DC7	0.59	84.2
DC8*	0.62	92.3
DC9*	0.38	69.2
DC10	0.21	79
DC11	0.23	87.2
DC12	0.65	97.5
DC13	0	97.4
DC14	0.47	77.1
DC15*	0.59	86.5
DC16	0.54	89.2
DC17	-0.0354	92.3
DC18a*	1	64.5
DC18b*	1	57.4

*One of the seven best predictive criteria. 18a and 18b were combined as one diagnostic criterion "family history".