



Application of an Interactive Diagnosis Ranking Algorithm in a Simulated Vignette-based Environment for General Dermatology

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Supplementary Table 1. Rater characteristics. Information about the five raters with their respective academic title, gender and level of training.

Rater	Title	Gender	Training
1	MD	male	PGY-1
2	MD	female	PGY-2
3	MD	male	PGY-3
4	MD	female	PGY-4
5	MD	female	board-certified

MD = medical doctor; PGY = post-graduate year of dermatology residency.

Supplementary Table 2. Included Patient Vignettes. Alphabetic list of diagnosis vignettes with their allocated disease category, and demographic data. The skin-type is provided on the Fitzpatrick-Scale, as assessed by author PT on digital images.

Diagnosis	Category	Age	Age group	Sex	Skin Type
Acne vulgaris	Inflammatory	17	adolescent	female	I-II
Allergic contact dermatitis	Inflammatory	57	adult	male	I-II
Amyloidosis, primary systemic	Other	47	adult	male	I-II
Angiosarcoma, cutaneous of the elderly	Malignant	78	elder	male	III-IV
Arthropod Assault, general	Exogenous	23	adult	male	I-II
Ashy dermatosis	Exogenous	34	adult	male	I-II
Basal cell carcinoma, general	Malignant	53	adult	female	I-II
Basal cell carcinoma, pigmented	Malignant	61	adult	male	I-II
Basal cell carcinoma, ulcerated	Malignant	47	adult	male	I-II
Borreliosis, general	Infections	27	adult	male	I-II
Bullous pemphigoid, vesiculo-bullous stage	Autoimmune	68	elder	male	I-II
Candidiasis, mucocutaneous	Infections	43	adult	female	I-II
Darier disease	Hereditary	63	adult	male	I-II
Deep fungal Infection	Infections	34	adult	male	I-II
Dermatitis herpetiformis	Autoimmune	24	adult	male	I-II
Dermatofibroma	Benign	30	adult	male	I-II
Dermatofibrosarcoma protuberans	Malignant	28	adult	male	I-II
Dermatomyositis	Autoimmune	47	adult	male	I-II
Dermatophytosis, general	Infections	53	adult	female	I-II
Drug eruption, general	Allergic	67	elder	male	I-II
Dyshidrotic dermatitis	Inflammatory	24	adult	male	I-II
Epidermal nevus	Benign	17	adolescent	male	I-II
Epidermolysis bullosa junctional, lethal subtype (letalis)	Hereditary	1	infant	female	I-II
Erysipelas	Infections	53	adult	female	I-II
Erythema annulare centrifugum	Inflammatory	37	adult	female	I-II
Erythema multiforme, general	Allergic	23	adult	female	I-II
Erythema nodosum	Inflammatory	35	adult	female	I-II
Fibrous papule of the face	Benign	53	adult	female	I-II
Folliculitis, general	Infections	26	adult	male	I-II
Graft-versus-host disease, acute	Inflammatory	57	adult	male	I-II
Granuloma annulare, localized	Inflammatory	34	adult	female	I-II
Hemorrhage, subungual	Exogenous	32	adult	male	I-II

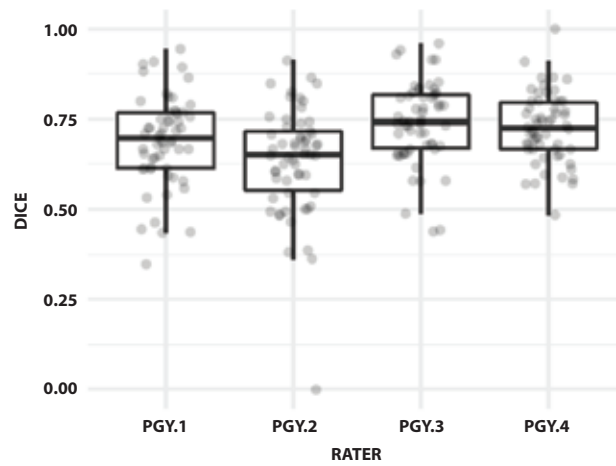
Supplementary Table 2 continues

Diagnosis	Category	Age	Age group	Sex	Skin Type
Herpes simplex virus infection, disseminated	Infections	78	elder	male	I-II
Herpes zoster	Infections	12	child	male	I-II
Impetigo contagiosa	Infections	8	child	female	I-II
Kaposi sarcoma, AIDS-related epidemic type	Malignant	47	adult	male	I-II
Keloid	Exogenous	21	adolescent	female	I-II
Keratosis pilaris	Hereditary	15	adolescent	female	III-IV
Leishmaniasis, cutaneous	Infections	23	adult	male	I-II
Lentigo simplex	Benign	23	adult	male	I-II
Lentigo, solar	Benign	72	elder	male	I-II
Leukocytoclastic vasculitis	Inflammatory	39	adult	female	I-II
Lichen planus, general	Inflammatory	37	adult	male	I-II
Lichen planus, oris	Inflammatory	37	adult	male	I-II
Lupus erythematosus, subacute cutaneous	Autoimmune	23	adult	female	I-II
Lymphoma, general	Malignant	66	elder	female	I-II
Mammary Paget's disease	Malignant	53	adult	female	I-II
Melanoma in situ, general	Malignant	57	adult	male	I-II
Melanoma in situ, lentigo maligna	Malignant	72	elder	male	I-II
Melanoma, acral lentiginous type	Malignant	34	adult	female	I-II
Melanoma, lentigo maligna type	Malignant	82	elder	female	I-II
Melanoma, superficial spreading type	Malignant	34	adult	male	I-II
Melasma	Other	50	adult	female	V-VI
Molluscum contagiosum	Infections	5	infant	male	I-II
Mycosis fungoides, plaque stage	Malignant	45	adult	female	III-IV
Mycosis fungoides, patch stage	Malignant	66	elder	female	I-II
Necrobiosis lipoidica	Inflammatory	55	adult	female	I-II
Nummular dermatitis	Inflammatory	62	adult	male	I-II

Supplementary Table 3. Rank changes after omission of subsections of the questionnaire. Results of all users are pooled. P values refer to the Wilcoxon signed rank test.

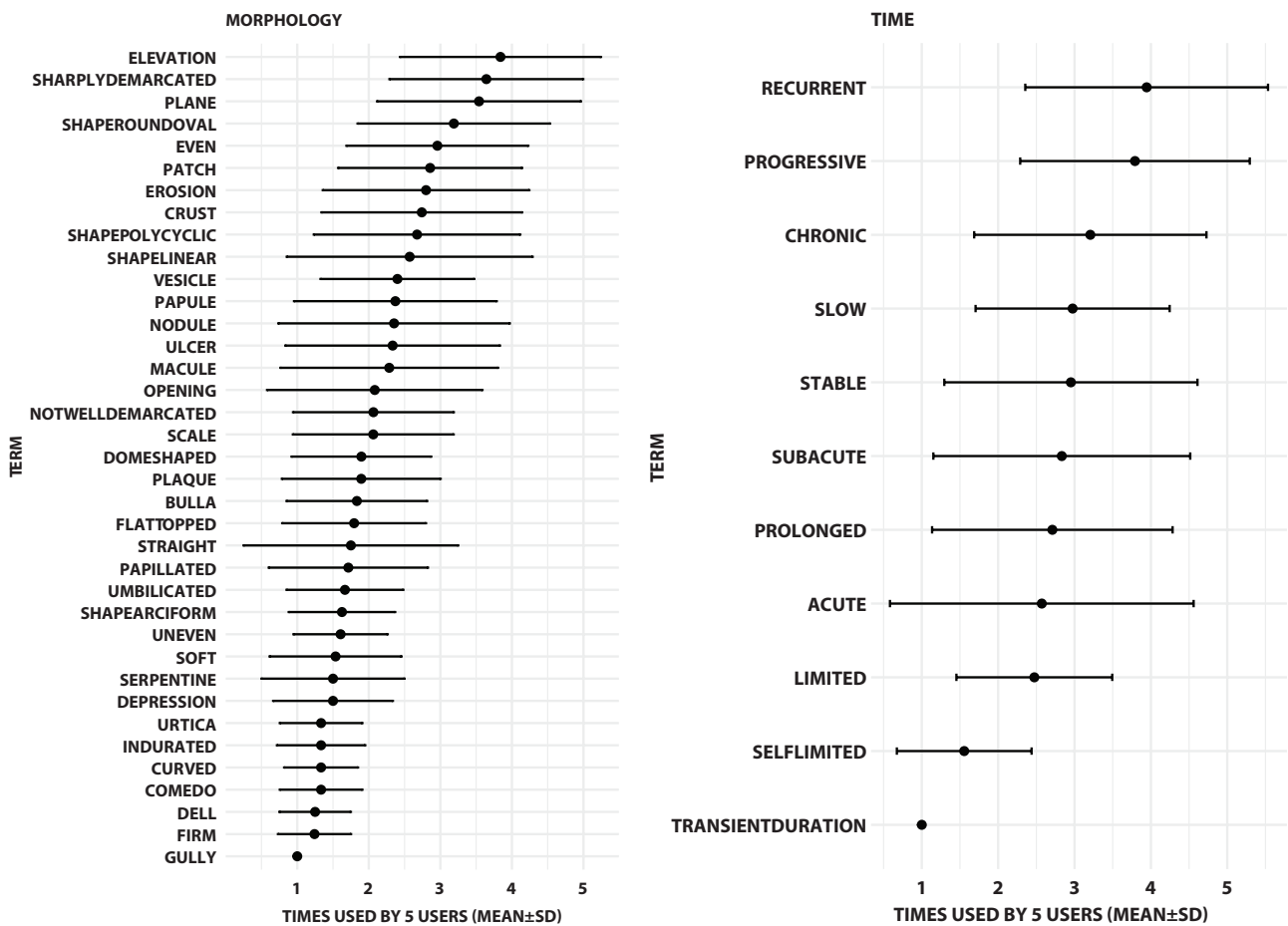
Section omitted	Rank change	P
Epidemiology	Median: 0.00 (IQR: 1.00)	< 0.001
Arrangement	Median: 0.00 (IQR: 1.00)	< 0.001
Localization	Median: -1.00 (IQR: 4.00)	< 0.001
Morphology	Median: -1.00 (IQR: 3.00)	< 0.001
Color	Median: 0.00 (IQR: 1.00)	< 0.001
Time	Median: 0.00 (IQR: 1.00)	< 0.001
Signs and Symptoms	Median: 0.00 (IQR: 0.00)	< 0.001

IQR = interquartile range.



Supplementary Figure 1. Similarity of full case descriptions between residents and the board-certified dermatologist, measured with the Sørensen-Dice index. Boxplots denote median and IQR, dots denote the value of a single case description comparison.

IQR = interquartile range; PGY = post-graduate year of dermatology residency.



Supplementary Figure 2. Term frequency per case as a surrogate for robustness. Minimum is 1, as only terms used at least once were included, maximum is 5 as five raters participated. In case a term is used only within one case, no distribution measurement such as standard deviation (SD) can be calculated.