Table II. Outcome measures by dressing type, n (%)*

Outcome measures	Cavilon†	Hydrocolloid bandages	DuoDERM Extra Thin‡	Mepitac Soft Silicone Tape§	DuoDERM Control Gel Formula‡
Qualitative mask fit test					
Passed all components	22 (88)	21 (84)	18 (72)	16 (64)	14 (56)
Stage failed					
Seal check	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Regular breathing	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Deep breaths	1 (4)	0 (0)	1 (4)	0 (0)	2 (8)
Head side to side	2 (8)	0 (0)	1 (4)	2 (8)	0 (0)
Head up and down	0 (0)	2 (8)	2 (8)	4 (16)	5 (20)
Bending forward	0 (0)	2 (8)	1 (5.9)	2 (8)	4 (16)
Reading passage	0 (0)	0 (0)	1 (5.9)	1 (4)	0 (0)
Comfort of dressing					
Positive	6 (24)	21 (84)	21 (84)	22 (88)	22 (88)
Neutral	13 (56)	3 (12)	4 (16)	2 (8)	1 (4)
Negative	5 (20)	1 (4)	0 (0)	1 (4)	2 (8)
Qualitative negative comments by category					
Sensation on skin	4 (16)	0 (0)	0 (0)	0 (0)	0 (0)
Feeling of mask fit/seal quality	0 (0)	3 (12)	3 (12)	3 (12)	10 (40)
Dressing adhesiveness	4 (16)	0 (0)	4 (16)	0 (0)	1 (4)
Dressing odor	8 (32)	0 (0)	0 (0)	0 (0)	0 (0)

*Primary outcome measures of qualitative fit test with failure rates for respective testing maneuvers and secondary outcomes of comfort of skin protectants and comments regarding comfort.
†3M, St Paul, MN.
‡ConvaTec, Oklahoma City, OK.
§Mölnlycke, Gothenburg, Sweden.

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Dermatoses of the world: Burden of skin disease and associated socioeconomic status in the world

To the Editor: Resources exist describing the prevalence and incidence of skin disease globally, but the global burden of skin disease and how it relates to socioeconomic status is largely unknown.[1] A measurement of the morbidity of skin disease is disability-adjusted life years (DALYs), defined as years of life lost because of premature mortality in the population plus the years lost due to disability for people living with a health condition or its consequences. This observational study seeks to compare the relationship between the burden of skin disease in 195 countries worldwide and socioeconomic status in 2017.

The factor used to measure socioeconomic status was 2017 gross domestic product (GDP) per capita data from the World Bank.[2] Information on the DALYs of the most common dermatoses was obtained from the latest Global Burden of Disease Study (GBD) 2017 data sets. Three categories of dermatoses were analyzed for each country: neoplastic, inflammatory, and infectious. Countries were ordered in a heat table with rows from highest (most wealthy) to lowest (least wealthy), and each country was numerically ranked in the world from 1

Country	Neoplastic				Inflammatory									Infectious						
	MEL	BCC	SCC	ORA	ACN	PSO	SEB	CON	ALO	PRU	DEC	ATO	URT	CEL	PYO	VIR	SCA	FUN	SYP	HIV
Qatar	184	126	188	192	83	69	68	69	36	68	135	143	125	157	157	175	135	191	190	174
Luxembourg	21	18	77	57	6	10	33	27	15	89	63	30	183	137	132	115	182	111	142	152
Singapore	135	115	162	164	13	160	14	8	3	85	45	119	168	28	185	70	171	170	157	150
Andorra	25	14	65	70	18	7	32	21	14	83	60	41	191	55	126	133	189	101	172	151
United States	26	1	8	77	5	3	1	1	1	102	33	55	174	17	113	3	163	194	154	112
New Zealand	1	3	1	89	22	27	12	7	13	49	119	22	152	11	149	45	162	143	161	168
Italy	28	21	52	61	28	23	7	30	23	53	58	130	195	121	135	139	193	45	175	127
Spain	44	42	54	51	29	22	29	18	20	73	31	164	193	78	110	136	190	135	169	116
Puerto Rico	71	77	37	71	36	38	138	65	116	10	16	124	159	45	13	194	61	39	109	84
Israel	36	33	67	159	8	25	36	31	34	144	15	43	184	49	136	66	176	60	149	149
Belarus	31	53	22	12	132	44	151	50	63	20	140	160	119	105	187	174	159	117	153	103
Turkmenistan	118	60	126	75	92	91	186	99	88	98	186	175	25	176	190	104	127	151	150	114
Iran	125	79	157	181	105	57	61	62	42	41	87	165	47	181	186	146	129	175	188	132

Fig 1. Abbreviated version of global heat table. Rows run from highest (most wealthy) to lowest (least wealthy), and each country is numerically ranked in the world from 1 (red, highest disability-adjusted life years) to 195 (blue, lowest highest disability-adjusted life years) for each disease in 2017. The 195 countries and territories worldwide were divided into sextiles, with 5 countries per sextile included in this abbreviated table. The full version provided in Supplemental Table I (available via Mendeley at https://doi.org/10.17632/crhk7kwt8z.1). *ACN*, Acne; *ALO*, alopecia areata; *ATO*, atopic dermatitis; *BCC*, basal cell carcinoma; *CEL*, cellulitis; *CON*, contact dermatitis; *DEC*, decubitus ulcer; *FUN*, fungal skin disease; *MEL*, melanoma; *ORA*, oral/lip cancer; *PRU*, pruritus; *PSO*, psoriasis; *PYO*, pyoderma; *SCA*, scabies; *SCC*, squamous cell carcinoma; *SEB*, seborrheic dermatitis; *SYP*, syphilis; *URT*, urticaria; *VIR*, viral skin disease.

(red, highest DALYs) to 195 (blue, lowest DALYs) for each disease. Statistical analyses of correlations (Pearson *r*) between DALYs and GDP per capita were performed using a 2-tailed linear regression using SPSS Statistics, version 25.0 (IBM, Armonk, NY).

There was a negative correlation between GDP per capita and DALYs for urticaria (−0.779), syphilis (−0.767), scabies (−0.583), viral skin infections (−0.499), HIV (−0.545), and pyoderma (−0.412) (Fig 1). There was a positive correlation between GDP per capita and DALYs for contact dermatitis (0.846), alopecia (0.817), psoriasis (0.787), pruritus (0.707), acne (0.690), melanoma (0.516), basal cell carcinoma (0.561), and squamous cell carcinoma (0.409).

Our results show that wealthier countries have higher DALYs of cutaneous neoplasms and certain inflammatory dermatoses (contact dermatitis, alopecia, acne, psoriasis, and pruritus). Skin cancers have previously been reported to be higher in more affluent countries, possibly due to intermittent intense ultraviolet exposure such as during sun-seeking vacations among the affluent.[3] Fitzpatrick skin type as well as several other environmental factors, including climate change and arsenic levels in drinking water, may also play a role.[4] In contrast, less affluent countries have higher DALYs for

Mexico	91	26	75	166	50	142	157	107	123	43	42	158	66	41	94	142	104	165	94	96
Azerbaijan	108	54	70	117	94	79	183	72	59	64	185	186	67	194	194	140	133	150	121	164
Bosnia and Herzegovina	39	29	27	53	136	56	146	45	68	23	99	181	137	151	174	184	149	113	145	195
Tunisia	139	91	158	121	127	84	57	68	47	57	117	96	82	172	155	147	128	171	156	120
Dominica	79	84	68	34	49	76	162	84	118	40	2	98	149	10	8	165	41	75	97	80
Saint Vincent/Grenadines	64	87	26	16	63	96	165	100	122	52	7	90	134	24	29	158	40	89	87	49
Namibia	50	93	29	26	78	103	106	137	147	129	56	8	74	57	75	85	94	41	67	5
Samoa	60	164	91	145	175	176	44	144	149	139	70	81	73	23	43	8	17	139	69	95
Republic of Congo	115	90	99	111	143	99	124	152	154	148	112	45	71	21	15	49	97	31	18	11
Tonga	107	176	16	106	154	164	42	124	129	127	59	101	96	19	26	16	14	137	102	128
Moldova	46	48	38	22	152	63	159	51	53	33	149	161	121	16	145	173	144	125	128	91
Pakistan	117	195	148	1	145	131	182	185	167	125	195	71	12	160	114	90	68	46	45	110
Chad	178	152	181	175	184	179	100	194	194	192	179	51	9	128	51	23	70	6	28	28
Uganda	93	186	149	119	168	183	120	190	192	189	130	14	13	97	54	7	63	51	8	16
Zimbabwe	66	170	51	122	141	139	109	164	171	168	84	4	39	126	88	54	74	9	47	10
Mali	119	134	173	173	149	150	97	191	191	187	176	105	15	117	39	33	71	1	4	30
Solomon Islands	129	185	113	123	192	193	48	159	145	166	113	74	60	66	33	5	2	118	1	94

Fig 1. (*continued*).

dermatology-related infectious diseases (scabies, viral skin infections, syphilis, and HIV) and 2 inflammatory dermatoses (urticaria and pyoderma). This may stem from lack of resources, public education, and specialty care, contributing to a lack of timely and definitive management.[5]

Limitations of the GBD Studies have been described, including inconsistent reporting of mortality by skin disease in assessing DALYs.[5] Disability reflects only (1) symptoms such as itch and (2) appearance including disfigurement, not capturing other complications such as secondary infection, mental illness, etc. Despite these limitations, understanding the relationship between socioeconomic status and geographic burden of common skin diseases is an essential component in developing measurable, impactful, and sustainable interventions to reduce disease morbidity in both resource-rich and resource-poor countries.

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A single-center, retrospective record review of malignancy prevalence in patients with dermatomyositis with anti-transcription intermediary factor 1γ antibodies via line immunoassay versus immunoprecipitation

To the Editor: The association of dermatomyositis (DM) with malignancy has been well established, with a prevalence between 11% and 42%.[1] Patients with DM with transcription intermediary factor 1γ (TIF-1γ) antibodies appear to be at greater risk of malignancy than the broader population of patients with DM, with a malignancy prevalence between 42% and 100%.[2]

The TIF-1 family, consisting of TIF-1α (p140), TIF-1β, and TIF-1γ (p-155), is a subgroup of transcription factors that play crucial propagative and inhibitory roles in carcinogenesis. Cancer-associated myositis is hypothesized to result from the misdirection of an antitumor immune response toward regenerating muscles. It stands to reason that autoantibodies to these proteins may occur as part of an antitumor immune response and lead to the onset of cancer-associated DM.[3]

Previous studies evaluating the prevalence of malignancy in patients with DM positive for TIF-1γ measured TIF-1γ antibodies via immunoprecipitation (IP), but commercially available testing often reports TIF-1γ antibodies via line immunoassay (LIA). The positive percentage agreement between LIA and IP for TIF-1γ antibodies ranges from 50.0% to 73.3%.[4,5] Only 1 small study has evaluated the prevalence of malignancy with TIF-1γ antibodies via LIA testing.[5] Given the reported high prevalence of malignancy in patients with DM with positive TIF-1γ antibodies and the frequent use of LIA testing by commercial laboratories, we aimed to achieve a greater understanding of the clinical utility of commercially available TIF-1γ antibody testing via LIA in predicting cancer.

We performed a retrospective medical record review of patients with DM with positive TIF-1γ antibodies via LIA or IP between January 1, 2014, and September 30, 2019, at the University of Utah. This study was approved by the University of Utah Institutional Review Board. The following information was extracted: age, sex, race, DM diagnosis date, associated malignancies, and date of diagnosis. We excluded those with less than 1 year of follow-up after the DM diagnosis unless malignancy was identified before that time (3 patients). Malignancy screening was not standardized, but generally consisted of age-appropriate cancer screening, computed tomography of the chest, abdomen, and pelvis, and transvaginal ultrasound for women yearly for the first 3 years after diagnosis.

We identified 26 patients using the methods described above (Table I).[6] The average age was 53.3 years, 16 patients were women, and 22 patients were white. All patients were positive for anti—TIF-1γ via IP, and 17 of 21 patients tested were positive for anti—TIF-1γ via LIA. Three patients had a malignancy diagnosis (1 urothelial, 1 gastric, 1 ovarian). The malignancy prevalences among patients positive for TIF-1γ via IP and LIA were 11.5% and 17.6%, respectively. The positive percentage agreement between these 2 methods using paired observation was 81% in the 21 patients in whom both tests were performed.

Our study is one of the largest studies to date evaluating malignancy prevalence in patients with DM who are positive for anti—TIF-1γ and one of the