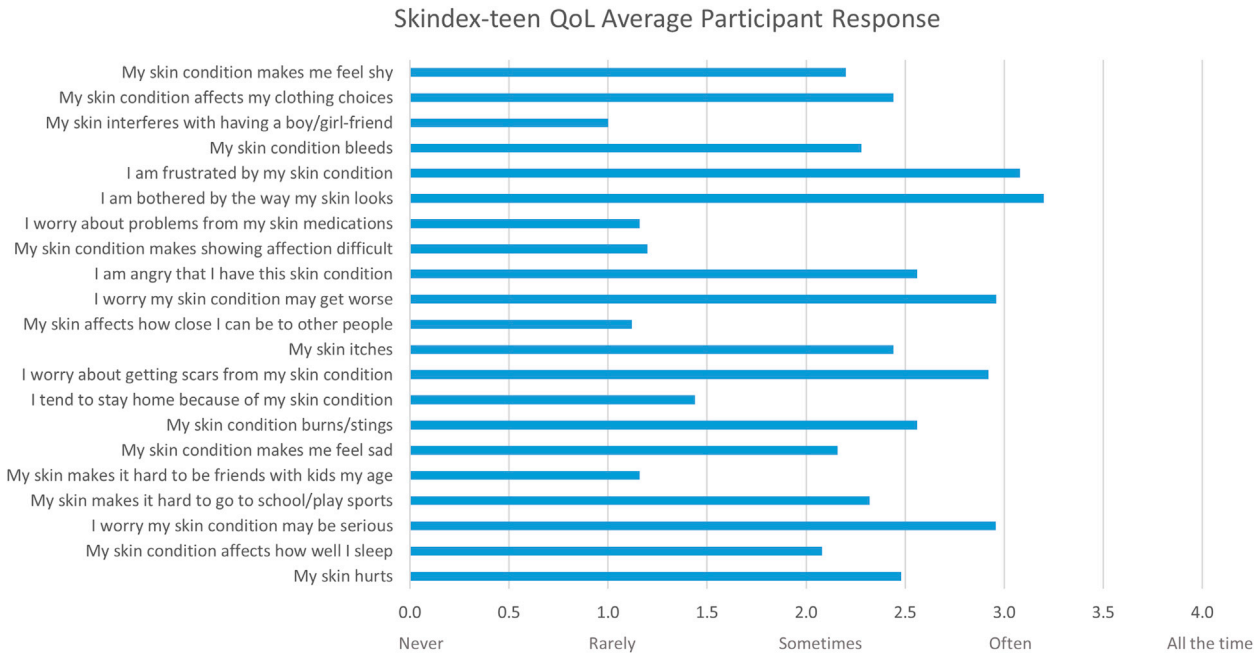

Fig 1. Average participant responses on the Skindex-Teen questionnaire.

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Low rate of conversion to positive tuberculosis status among patients with psoriasis on biologic therapies: A retrospective study from a US academic medical center

To the Editor: Biologic therapies have revolutionized the treatment of psoriasis, yet these medications are not without risk. Patients on biologics are at risk of reactivation of latent tuberculosis (TB) infection (LTBI).[1] Dermatologists routinely perform TB screening before initiation of biologics and annually thereafter for patients with psoriasis. Historically, recommendations to screen annually were written when first-generation (anti—tumor necrosis factor α) biologics dominated the market. In recent years, second-generation biologics, drugs that target interleukins 17, 23, or 12/23, have become more common. Additionally, recent studies suggest that anti—tumor necrosis factor α therapy is associated with a low TB conversion rate in the United States, a low-risk TB area.[1] Some second-generation biologics have been shown to have a decreased risk of active TB or reactivation of LTBI compared to first-generation biologics.[2] Currently, data are lacking regarding TB screening and seroconversion among

Table I. Baseline demographics and characteristics (N = 316)

Variable	Value
Age at initiation of first biologic therapy, y, median (range [IQR])	49.0 (10.4-93.6 [37.3-58.0])
Male, n (%)	127 (54.4)
Race, n (%)	
White	274 (86.7)
Black	5 (1.6)
Asian	9 (2.8)
American Indian/Alaska Native	1 (0.3)
Unknown/other (not listed)	27 (8.5)
Preferred language, n (%)	
English	294 (93.0)
Spanish	14 (4.4)
Vietnamese	3 (0.9)
Polish	2 (0.6)
Albanian	1 (0.3)
American Sign Language	1 (0.3)
Unknown	1 (0.3)
Ethnic group, n (%)	
Hispanic or Latino	33 (10.4)
Not Hispanic or Latino	279 (88.3)
Unknown	4 (1.3)
Birthplace, n (%)	
Documented born in the United States	199 (63.0)
Born outside the United States	19 (6.0)
Unknown	98 (31.0)
Immunosuppression, n (%)	
Current use of prednisone >5 mg orally daily × ≥3 months	6 (1.9)
HIV positive	0 (0)
History of organ transplant	0 (0)
Comorbidities, n (%)	
Psoriatic arthritis	168 (53.2)
Rheumatoid arthritis	7 (2.2)
Inflammatory bowel disease	10 (3.2)
Ankylosing spondylitis	2 (0.6)
Biologic therapies, n (%)*	
Adalimumab	228 (72.2)
Brodalumab	1 (0.3)
Certolizumab	3 (0.9)
Etanercept	109 (34.5)
Guselkumab	10 (3.2)
Infliximab	26 (8.2)
Ixekizumab	34 (10.8)
Secukinumab	55 (17.4)
Tildrakizumab	0 (0)
Ustekinumab	105 (33.2)
Ever positive TB test result, n (%)	6 (1.9)
Confirmed positive TB test result, n (%)	4 (1.3)
Type of most recent TB test, n (%)	
QuantiFERON-TB Gold (Qiagen, Hilden, Germany)	303 (95.9)
Purified protein derivative	12 (3.8)
T-Spot (Oxford Immunotec, Milton, UK)	1 (0.3)
Cumulative length of time on biologic therapy, months, median (IQR)	55.9 (31.2-94.9)

IQR, Interquartile range; *TB,* tuberculosis.
*Percentages do not add up to 100% because some patients switched biologic agents during the study timeframe.

those treated with second-generation biologics. Given varying recommendations regarding TB screening, we examined the rate of conversion to positive TB test results among patients with psoriasis on biologics.

A retrospective chart review at an academic institution was performed to identify patients with psoriasis who had been on ≥1 year of biologics from 2014 to 2019 with ≥2 TB tests that were 1 year apart after initiation of biologics. Exclusion criteria included positive TB test result at baseline.

Overall, 316 patients were included. The median age at therapy initiation was 49 years (range, 10 to 94), and the majority were white (87%) and English speaking (93%) (Table I). The most common treatments were adalimumab (72%) and etanercept (35%). Patients were treated for a mean of 65 months (standard deviation, 43). Six patients (2%) with a negative baseline TB test result developed a positive test result after initiation of biologics. Of these, 4 of 6 had a second positive test result and were diagnosed with LTBI and initiated on treatment. There was 1 LTBI per 428 patient-years on biologics. All 4 patients with confirmed positive TB test conversion were born outside of the United States. Their detailed characteristics can be found in Table II.

TB has varying prevalence rates in different geographic areas. Based on the low conversion to positive TB test results among our study population, it would be reasonable to consider only performing annual TB testing on those at greatest risk of TB, including individuals born outside the United States from areas with a high incidence of TB, recent travel to areas with high prevalence of TB, those taking multiple immunosuppressing drugs or who are otherwise immunocompromised, and residents/employees of congregate or institutional settings. TB testing before initiating biologics should still be performed on all patients.

Recently updated guidelines from the American Academy of Dermatology and National Psoriasis Foundation[3] support the American College of Rheumatology's recommendation for patients taking both first- and second-generation biologics:

Table II. Demographic and clinical characteristics of patients with confirmed positive TB test result (n = 4)

Patient	Sex	Age at initiation of first biologic, y	Race	Ethnic group	Preferred language	Birthplace	Length of time on biologic at time of positive TB test result, months	Type of TB test	All biologics patient has used (amount of time, months)	Biologic at time of positive TB test result	Comorbidities*	Immuno suppression†	BCG vaccination status	Other risk factors
1	Male	68.5	Asian	Non—Hispanic/Latino	Vietnamese	Vietnam	12.8	QuantiFERON-TB Gold	Adalimumab (12.8)	Adalimumab	None	None	Possible but unknown‡	Documented travel to Vietnam preceding positive test result
2	Male	58.7	White	Hispanic/Latino	English	Colombia	50.4	QuantiFERON-TB Gold	Etanercept (28.0) Ustekinumab (29.0)	Ustekinumab	None	None	Vaccinated	Documented travel to Colombia several times but not directly before a positive test result
3	Male	58.0	Other	Hispanic/Latino	Spanish	El Salvador	35.4	QuantiFERON-TB Gold	Adalimumab (35.4)	Adalimumab	None	None	Vaccinated	Documented travel to El Salvador preceding positive test result
4	Female	34.0	White	Non—Hispanic/Latino	English (patient is nonverbal, history provided by caretaker)	United Kingdom	14.9	QuantiFERON-TB Gold	Adalimumab (15.1)	Adalimumab	None	None	Possible but unknown‡	Attended adult day program

BCG, Bacillus Calmette-Guérin; *TB*, tuberculosis.

*Comorbidities examined were psoriatic arthritis, rheumatoid arthritis, inflammatory bowel disease, and ankylosing spondylitis.

†Immunosuppression was defined as current use of prednisone >5 mg orally daily × ≥ 3 months, HIV positive, or history of organ transplant.

‡Born and lived in a country during a time period where BCG vaccination was part of routine vaccination schedule.

annual testing for LTBI only among high-risk patients (e.g., patients who live, work, or travel where TB exposure is likely).[4] Given that the estimated total medical expenditure among US employer-based privately insured individuals was $52.6 million in 1 year for the 3 most common TB tests,[5] significant cost savings may result by limiting testing to high-risk individuals and avoiding unnecessary tests.

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Practice habits of Mohs surgeons treating melanoma with Mohs surgery: A cross-sectional survey

To the Editor: Mohs micrographic surgery (MMS) is increasingly used to treat melanoma in the United States.[1] Recent studies have shown lower recurrence rates and improved survival outcomes for melanoma treated with MMS compared to wide local excision.[2,3] Given the variations in practice patterns of MMS for melanoma combined with a lack of best practice guidelines,[1] this survey of Mohs surgeons sought to elucidate the practice habits used by Mohs surgeons who treat in situ and invasive melanoma with MMS.

This study was a nationwide cross-sectional survey of Mohs surgeons with membership in the American College of Mohs Surgery (ACMS). An anonymous survey was developed and distributed to all ACMS members (N = 1630) during March 2020 through May 2020 by using ACMS mailing lists. MMS was defined as Mohs surgery with intraoperative

Table I. Practice habits of Mohs surgeons treating melanoma with Mohs surgery (N = 363)

Characteristic	Mohs surgeons treating melanoma with MMS, n (%)
Subtypes treated*	
LM	348 (95.9)
MIS (subtypes excluding LM)	332 (91.5)
T1	216 (59.5)
T2 and/or greater	76 (20.9)
Anatomic location	
Head and neck	360 (99.2)
Trunk and extremities (excluding hands and feet)	174 (47.9)
Hands, feet, genitalia	259 (71.3)
Number of cases treated with MMS per year	
≤40	204 (56.2)
41-120	118 (32.5)
121-200	21 (5.8)
>200	20 (5.5)
IHC staining	
Yes	273 (75.2)
No	90 (24.8)
IHC stains used	
MART-1	261 (95.6)
MITF	11 (4.0)
S-100	11 (4.0)
HMB-45	3 (1.1)

IHC, Immunohistochemical; *LM,* lentigo maligna; *MIS,* melanoma in situ; *MMS,* Mohs micrographic surgery.
*Based on American Joint Committee on Cancer, 8th Edition staging criteria.