Supplemental Online Content

Gómez-Tomás A, Bouwes Bavinck JN, Genders R, et al. External validation of the Skin and UV Neoplasia Transplant Risk Assessment Calculator (SUNTRAC) in a large European solid organ transplant recipient cohort. *JAMA Dermatol*. Published online November 23, 2022. doi:10.1001/jamadermatol.2022.4820

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This supplemental material has been provided by the authors to give readers additional information about their work.

eTable 1. Clinical and Demographic Characteristics of the Validation Cohort by Skin and Ultraviolet Neoplasia Risk Assessment Calculator (SUNTRAC) Risk Group

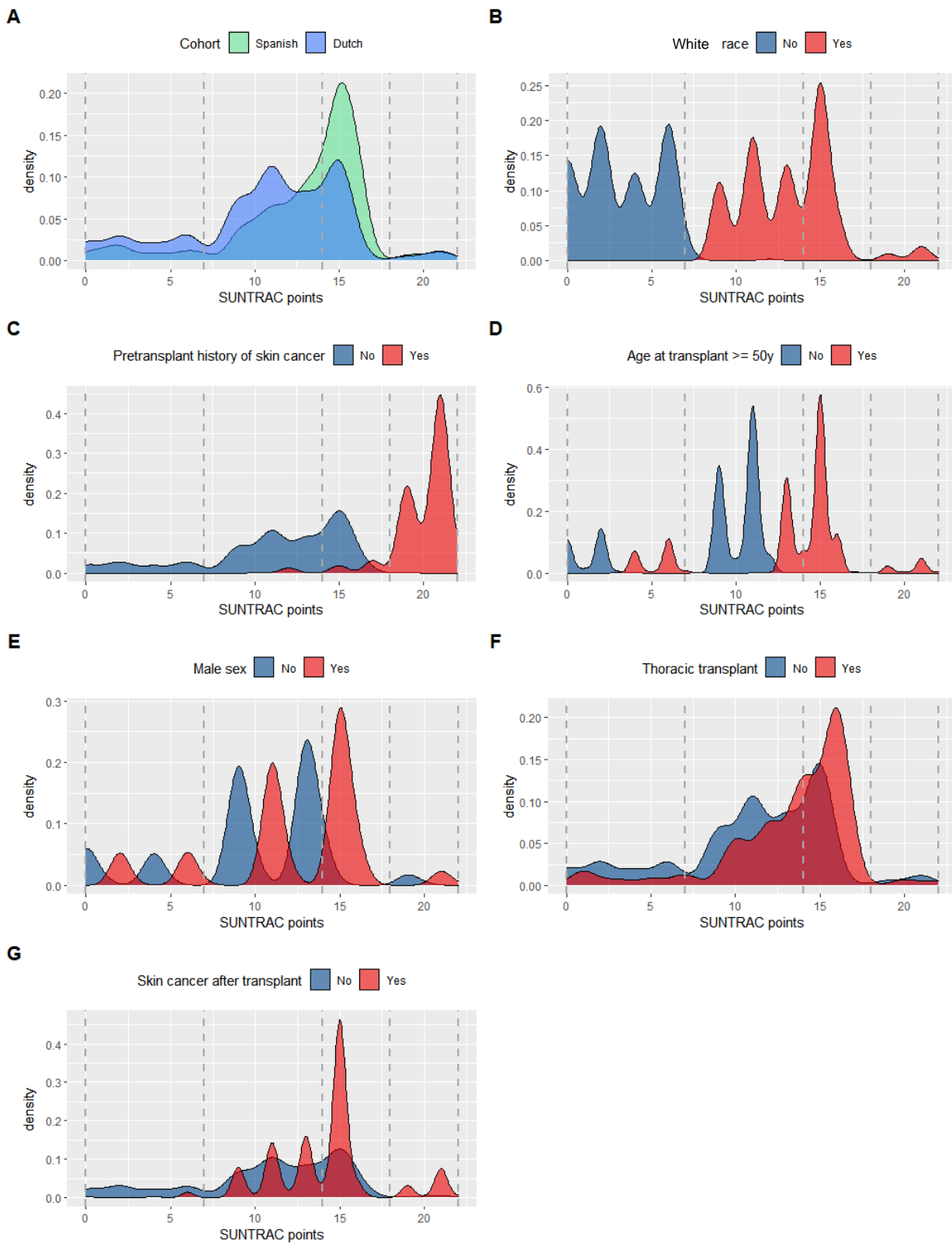|	Low-Risk (N=580)	Medium-Risk (N=1573)	High-Risk (N=1153)	Very-High-Risk (N=115)	P-value
Sex					< 0.001[1]
Female	247 (42.6%)	893 (56.8%)	109 (9.5%)	40 (34.8%)	
Male	333 (57.4%)	680 (43.2%)	1044 (90.5%)	75 (65.2%)	
Age at transplant (years)					< 0.001[2]
Median (Q1-Q3)	49.0 (40.0, 59.0)	44.0 (35.0, 53.0)	60.0 (55.0, 65.0)	66.0 (61.0, 70.0)	
Age at transplant (over 50y)					< 0.001[1]
No	303 (52.2%)	1102 (70.1%)	8 (0.7%)	0 (0.0%)	
Yes	277 (47.8%)	471 (29.9%)	1145 (99.3%)	115 (100.0%)	
Race					< 0.001[1]
Asian	71 (12.2%)	1 (0.1%)	0 (0.0%)	0 (0.0%)	
Black	135 (23.3%)	2 (0.1%)	0 (0.0%)	0 (0.0%)	
Latinx	268 (46.2%)	7 (0.4%)	0 (0.0%)	0 (0.0%)	
Middle Eastern and North African	106 (18.3%)	3 (0.2%)	0 (0.0%)	0 (0.0%)	
White	0 (0.0%)	1560 (99.2%)	1153 (100.0%)	115 (100.0%)	
Type of transplant (abdominal/thoracic)					< 0.001[1]
Abdominal	552 (95.2%)	1453 (92.4%)	862 (74.8%)	104 (90.4%)	
Thoracic	28 (4.8%)	120 (7.6%)	291 (25.2%)	11 (9.6%)	
Pretransplant history of skin cancer					< 0.001[1]
No	580 (100.0%)	1571 (99.9%)	1145 (99.3%)	0 (0.0%)	
Yes	0 (0.0%)	2 (0.1%)	8 (0.7%)	115 (100.0%)	
SUNTRAC score (points)					< 0.001[2]
Median (Q1-Q3)	2.0 (2.0, 6.0)	11.0 (9.0, 13.0)	15.0 (15.0, 15.0)	21.0 (19.0, 21.0)	
Follow-up time (years)					< 0.001[2]
Median (Q1-Q3)	6.3 (3.0, 10.3)	7.0 (3.5, 11.2)	4.3 (2.3, 7.3)	2.0 (1.1, 4.3)	
Skin cancer after transplant					< 0.001[1]
No	568 (97.9%)	1347 (85.7%)	854 (74.1%)	49 (42.6%)	
Yes	12 (2.1%)	226 (14.3%)	299 (25.9%)	66 (57.4%)	
Type of skin cancer (first event)					0.154[1]
Basal cell carcinoma	5 (41.7%)	132 (58.4%)	140 (46.8%)	34 (51.5%)	
Squamous cell carcinoma	6 (50.0%)	88 (38.9%)	149 (49.8%)	30 (45.5%)	
Melanoma	1 (8.3%)	6 (2.7%)	10 (3.3%)	2 (3.0%)	
Merkel cell carcinoma	0 (0%)	0 (0%)	0 (0%)	0 (0%)	

[1]. Fisher's exact test for count data, [2]. Kruskal-Wallis rank sum test

eTable 2. Subdistribution Hazard Ratios (SHR) and Their 95% CIs From a Univariate Competing Risk Regression Analysis Including SUNTRAC Group as Predictor in Validation Cohort and in the TSCN Study

Optimal cut-points of the total SUNTRAC score for our cohort and those proposed by the SUNTRAC tool via recursive partitioning.
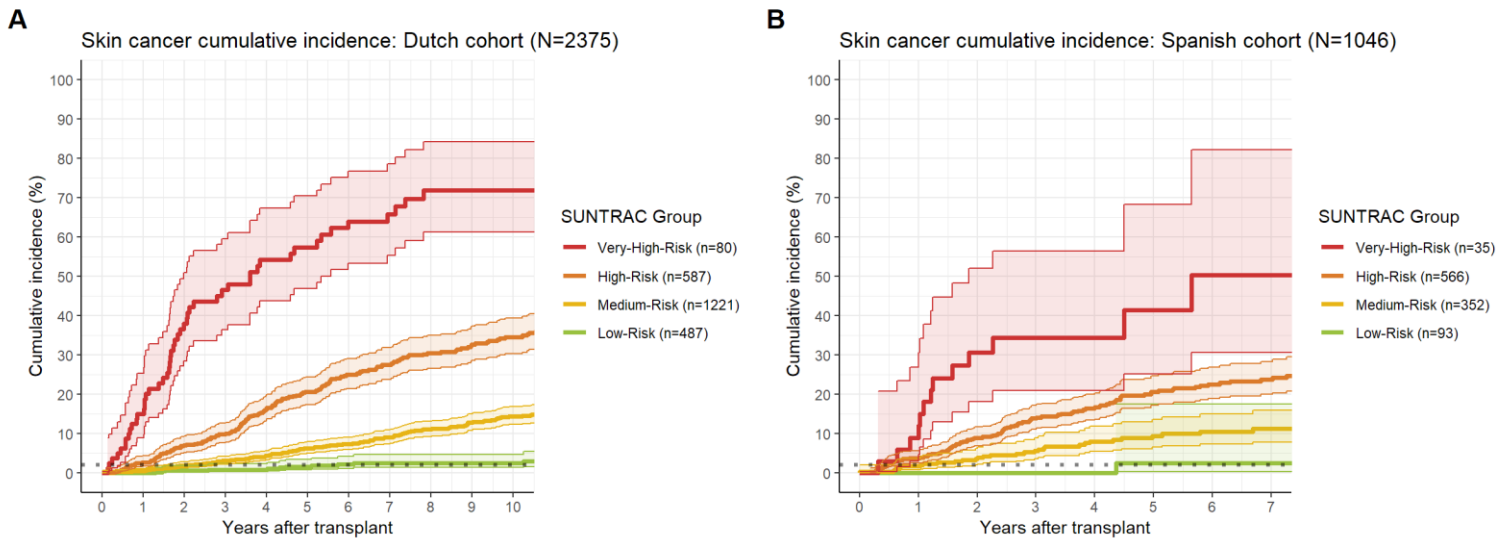
SUNTRAC Risk Groups	SHR (95%CI) in Validation Cohort	P value		Optimal Validation Cohort Cut-points	Original SUNTRAC Cut-points	
Low-Risk	Reference	-		0-5	0-6	
Medium-Risk	6.79 (3.80, 12.14)	<0.001		6-12	7-13	
High-Risk	15.91 (8.91, 28.39)	<0.001		13-17	14-17	
Very-High-Risk	54.76 (29.14, 102.9)	<0.001		18-22	18-22	

eFigure 1. Density Plots Displaying SUNTRAC Score Distribution in Validation Cohort
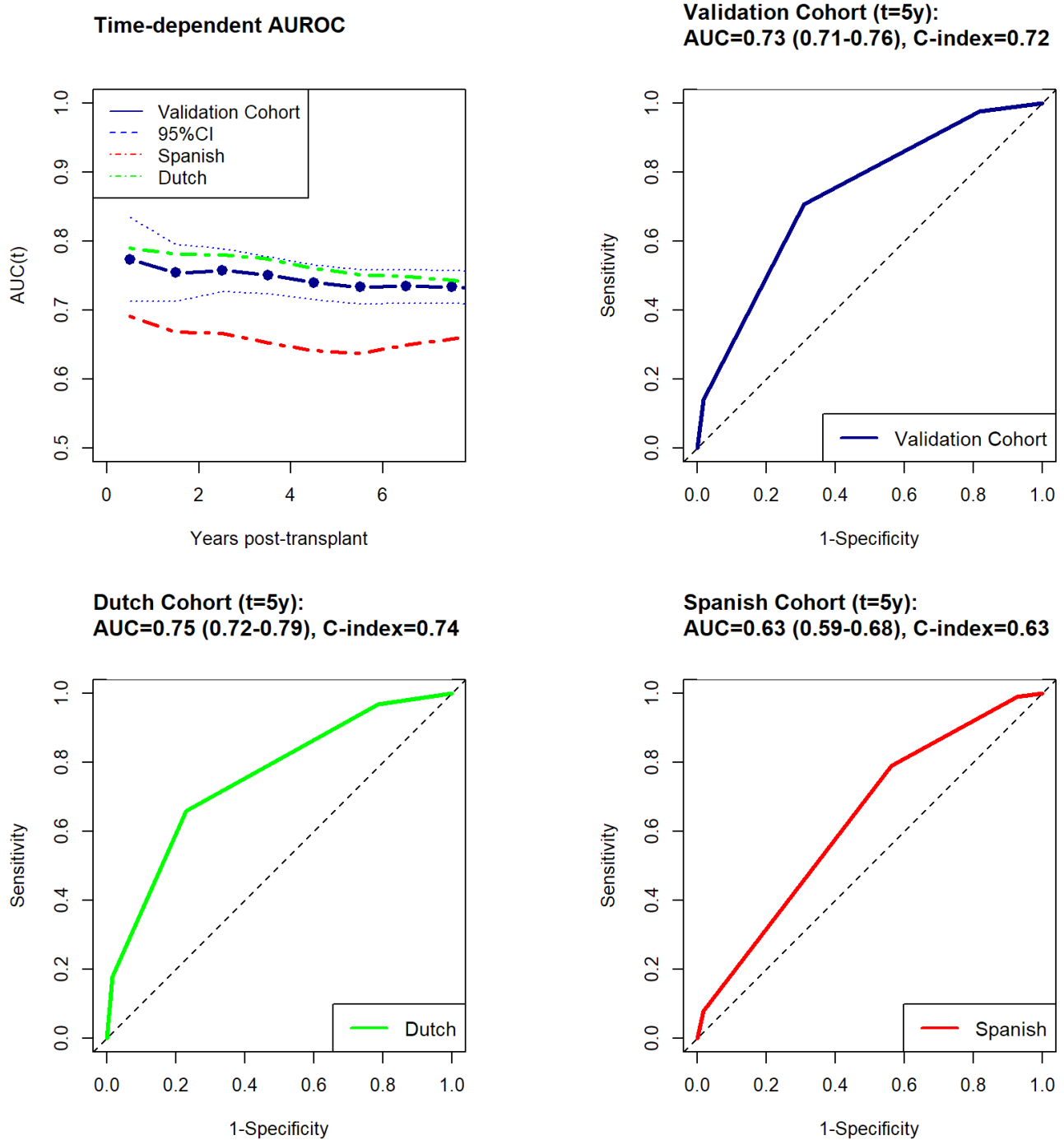

eFigure 1. Density plots displaying SUNTRAC score distribution in validation cohort by country (A), race (B), pretransplant history of skin cancer (C), age at transplant (D), sex (E), type of transplant (F) and skin cancer after transplant (G). Dashed lines indicate cutpoints for the different SUNTRAC risk groups.

eFigure 2. Cumulative Incidence of Skin Cancer After Transplant by SUNTRAC Risk Group and Country

A

Skin cancer cumulative incidence: Dutch cohort (N=2375)

SUNTRAC Group
- Very-High-Risk (n=80)
- High-Risk (n=587)
- Medium-Risk (n=1221)
- Low-Risk (n=487)

B

Skin cancer cumulative incidence: Spanish cohort (N=1046)

SUNTRAC Group
- Very-High-Risk (n=35)
- High-Risk (n=566)
- Medium-Risk (n=352)
- Low-Risk (n=93)

eFigure 2. Cumulative incidence of skin cancer after transplant by SUNTRAC risk group and country. A: Dutch Cohort, B: Spanish Cohort. Shaded areas represent 95% confidence intervals. Dotted line indicates screening threshold at 2% cumulative incidence.

eFigure 3. Time-Dependent Area Under the Receiving Operating Characteristic Curve (t-AUROC) After Transplant and ROC Curves at 5 Years After Transplant by Country

eFigure 3. Time dependent Area Under the Receiving Operating Characteristic Curve (t-AUROC) after transplant and ROC curves at five years after transplant by country. Reported performance metrics: area under the ROC curve (AUC) with 95% confidence intervals and Wolber's concordance index (C-index).