Supplementary Online Content

Brinker TJ, Faria BL, de Faria OM, et al. Effect of a face-aging mobile app–based intervention on skin cancer protection behavior in secondary schools in Brazil: a cluster-randomized clinical trial. *JAMA Dermatol*. Published online May 6, 2020. doi:10.1001/jamadermatol.2020.0511

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

Baseline analyses

eTable 1. Intraclass Correlation Coefficents (ICCs) Determined by the ANOVA Method

Cluster Level	Endpoint	ICC value
School	Daily sunscreen use in past 30 days	0.0016
School	Self-skin examination in last 6 months	0.0120
School	Tanning sessions in past 30 days	0.0339
Class	Daily sunscreen use in past 30 days	0.0066
Class	Self-skin examination in last 6 months	0.0185
Class	Tanning sessions in past 30 days	0.0538

(Zou & Donner, 2004).

eTable 2. Bivariate Relations at Baseline (All Cases Including Dropouts)

		Daily sunscreen use in past 30 days	Self-skin examination in last 6 months	Tanning sessions in past 30 days
		Category: Yes	Once or more	One at least
Total sample (N=1573)		14.9%	27.0%	15.7%
Gender	Female (N=812)	20.8%	30.3%	21.1%
	Male (N=761)	8.7%	23.5%	10.0%
	Odds Ratio	0.36	0.71	0.42
	Significance	p=0.000	p=0.003	p=0.000
School grade	9th grade (N=258)	14.3%	30.2%	20.2%
	10th grade (N=452)	13.1%	24.6%	14.8%
	11th grade (N=424)	15.3%	26.9%	15.8%
	12th grade (N=439)	16.9%	27.8%	13.9%
	Odds Ratio	1.10	0.99	0.89
	Significance	p=0.179	p=0.911	p=0.077

Odds ratios and significances were computed using Binary Logistic Regression with targets as dependent dichotomous variables.

eTable 3. Perception of Students on the Intervention–Immediate Postintervention Survey

Immediately after the intervention was finished, the perception of the students was measured anonymously via a questionnaire with 4 items on a 5-point Likert scale.

Item	Strongly agree or agree n/N(%)	Neutral n/N(%)	Strongly disagree or disagree n/N(%)
"The intervention was fun"	690/734 (94.0%)	23/734 (3.1%)	21/734 (2.9%)
"I learned new benefits of sun protection"	701/734 (95.5%)	30/734 (4.1%)	3/734 (0.4%)
"The animation of my 3D selfie motivates me to use daily sunscreen"	662/734 (90.2%)	57/734 (7.8%)	15/734 (2.0%)
"The intervention motivates me to check my skin with the ABCDE rule in the next 6 months"	668/734 (91.0%)	51/734 (7.0%)	15/734 (2.0%)

Primary end point: daily sunscreen use at 6 months follow-up

eTable 4. Descriptive Characteristics of Pupils With Daily Use of Sunscreen During the Past 30 Days at Baseline and 3- and 6-Month Follow-up

95% confidence intervals were calculated using the Clopper and Pearson method.

		Time Point*	Intervention Group	95%CI	Control Group	95%CI
Total		B	110/734 (15.0%)	12.5 – 17.8 %	125/839 (14.9%)	12.6 – 17.5 %
		F3	136/618 (22.0%)	18.8 – 25.5 %	103/784 (13.1%)	10.9 – 15.7 %
		F6	139/607 (22.9%)	19.6 – 26.5 %	114/787 (14.5%)	12.1 – 17.1 %
Gender	Male	B	31/336 (9.2%)	6.4 – 12.8 %	35/425 (8.2%)	5.8 – 11.3 %
		F3	28/275 (10.2%)	6.9 – 14.4 %	22/395 (5.6%)	3.5 – 8.3 %
		F6	31/269 (11.5%)	8.0 – 16.0 %	30/392 (7.7%)	5.2 – 10.7 %
	Female	B	79/398 (19.8%)	16.0 – 24.1 %	90/414 (21.7%)	17.9 – 26.0 %
		F3	108/343 (31.5%)	26.6 – 36.7 %	81/389 (20.8%)	16.9 – 25.2 %
		F6	108/338 (32.0%)	27.0 – 37.2 %	84/395 (21.3%)	17.3 – 25.6 %
School grade	9th grade	B	14/145 (9.7%)	5.4 – 15.7 %	23/113 (20.4%)	13.4 – 29.0 %
		F3	27/126 (21.4%)	14.6 – 29.6 %	17/108 (15.7%)	9.4 – 24.0 %
		F6	28/126 (22.2%)	15.3 – 30.5 %	20/108 (18.5%)	11.7 – 27.1 %
	10th grade	B	33/221 (14.9%)	10.5 – 20.3 %	26/231 (11.3%)	7.5 – 16.1 %
		F3	43/181 (23.8%)	17.8 – 30.6 %	22/218 (10.1%)	6.4 – 14.9 %
		F6	41/189 (21.7%)	16.0 – 28.3 %	25/213 (11.7%)	7.7 – 16.8 %
	11th grade	B	24/178 (13.5%)	8.8 – 19.4 %	41/246 (16.7%)	12.2 – 21.9 %
		F3	23/149 (15.4%)	10.0 – 22.3 %	33/231 (14.3%)	10.0 – 19.5 %
		F6	28/147 (19.0%)	13.0 – 26.3 %	39/237 (16.5%)	12.0 – 21.8 %
	12th grade	B	39/190 (20.5%)	15.0 – 27.0 %	35/249 (14.1%)	10.0 – 19,0 %
		F3	43/162 (26.5%)	19.9 – 34.0 %	31/227 (13.7%)	9.5 – 18.8 %
		F6	42/145 (29.0%)	21.7 – 37.1 %	30/229 (13.1%)	9.0 – 18.2 %
Fitzpatrick Skin Type	Type I or II	B	11/46 (23.9%)	12.6 – 38.8 %	18/70 (25.7%)	16.0 – 37.6 %
		F3	12/39 (30.8%)	17.0 – 47.6 %	14/64 (21.9%)	12.5 – 34.0 %
		F6	14/37 (37.8%)	22.5 – 55.2 %	14/65 (21.5%)	12.3 – 33.5 %
	Type III	B	43/256 (16.8%)	12.4 – 22.0 %	42/293 (14.3%)	10.5 – 18.9 %
		F3	51/210 (24.3%)	18.6 – 30.7 %	45/275 (16.4%)	12.2 – 21.3 %
		F6	56/211 (26.5%)	20.7 – 33.0 %	46/273 (16.8%)	12.6 – 21.8 %
	Type IV	B	49/368 (13.3%)	10.0 – 17.2 %	56/421 (13.3%)	10.2 – 16.9 %
		F3	67/316 (21.2%)	16.8 – 26.1 %	36/393 (9.2%)	6.5 – 12.5 %
		F6	61/311 (19.6%)	15.3 – 24.5 %	45/396 (11.4%)	8.4 – 14.9 %
	Type V	B	7/64 (10.9%)	4.5 – 21.2 %	9/55 (16.4%)	7.8 – 28.8 %
		F3	6/53 (11.3%)	4.3 – 23.0 %	8/52 (15.4%)	6.9 – 28.1 %
		F6	8/48 (16.7%)	7.5 – 30.2 %	9/53 (17.0%)	8.1 – 29.8 %

* All available cases were included in the calculations at all times (intention-to-treat analysis). B = baseline F3 = 3-mo follow-up F6 = 6-mo follow-up

eTable 5. Comparison of the Change of Daily Sunscreen Use Between the Intervention and Control Groups

Pairwise Contrasts								
Treatment group	Survey Wave pairwise Contrasts	Contrast Estimate	Std. Error	t	df	Adj. Sig.	95% Confidence Interval	
							Lower	Upper
Control	6-month follow-up - Baseline	-0.005	0.013	-0.370	1432	0.711	-0.030	0.020
Intervention	6-month follow-up - Baseline	0.077	0.016	4.684	1181	<0.001	0.045	0.109
Difference in change between intervention and control		0.082	0.0205	3.986	2611	<0.001	0.0415	0.122
The sequential Šidák adjusted significance level is .05.								
Confidence interval bounds are approximate.								

eTable 7 shows that the school grade had no significant influence on the use of the sunscreen. Therefore, this feature was removed from the model that was used for the pairwise contrasts related to the primary end point (eTables 5-6).

eTable 6. Gender-Specific Comparison of the Change of Daily Sunscreen Use Between the Intervention and Control Groups

	Pairwise Contrasts							
Gender & Treatment group	Survey Wave pairwise Contrasts	Contrast Estimate	Std. Error	t	df	Adj. Sig.	95% Confidence Interval	
							Lower	Upper
Female Control	6-month follow-up - Baseline	-0.003	0.022	-0.118	1423	0.906	-0.045	0.040
Female Intervention	6-month follow-up - Baseline	0.125	0.025	4.913	1386	<0.001	0.075	0.175
Female	Change difference Intervention-Control	0.128	0.335	3.816	2807	<0.001	0.0621	0.193
Male Control	6-month follow-up - Baseline	-0.007	0.015	-0.489	1445	0.625	-0.037	0.022
Male Intervention	6-month follow-up - Baseline	0.026	0.020	1.290	1487	0.197	-0.014	0.066
Male	Change difference Intervention-Control	0.033	0.025	1.322	2930	0.186	-0.0161	0.0827
The sequential Šidák adjusted significance level is .05.								
Confidence interval bounds are approximate.								

eTable 7. Analysis of the Influence of Different Factors on the Primary End Point

Fixed Effects[a]			
Source	F	df1	df2	Sig.
Corrected Model	11.149	10	146	<0.001
Wave	10.770	1	1483	0.001
Interv_Control	2.810	1	48	0.100
Wave * Interv_Control	14.422	1	1483	<0.001
Gender	70.148	1	1558	<0.001
School grade	0.554	3	48	0.648
Fitzpatrick Skin Type	3.664	3	1549	0.012
Probability distribution: Binomial				
Link function: Logit				
a. Target: Daily sunscreen use				

Secondary end point: daily sunscreen use at 3 months follow-up

eTable 8. Analysis of the Influence of Different Factors on the Secondary End Point "Daily Sunscreen Use at 3-mo Follow-up"

Fixed Effects[a]				
Source	F	df1	df2	Sig.
Corrected Model	11.925	10	139	<0.001
Wave	5.320	1	1495	0.021
Interv_Control	3.535	1	46	0.066
Wave * Interv_Control	17.482	1	1495	<0.001
Gender	80.211	1	1576	<0.001
School grade	0.529	3	46	0.665
Fitzpatrick Skin Type	3.170	3	1556	0.023
Probability distribution: Binomial				
Link function: Logit				
a. Target: Daily Sunscreen use				

eTable 8 shows that the school grade had no significant influence on the use of the sunscreen. Therefore, this feature was removed from the model that was used for the pairwise contrasts related to the secondary end point "daily sunscreen use at 3-month follow-up" (eTables 9-10).

eTable 9. Comparison of the Change of Daily Sunscreen Use Between the Intervention and Control Groups

Pairwise Contrasts								
Treatment group	Survey Wave pairwise Contrasts	Contrast Estimate	Std. Error	t	df	Adj. Sig.	95% Confidence Interval	
							Lower	Upper
Control	3-month follow-up - Baseline	-0.015	0.012	-1.328	1475	0.184	-0.038	0,007
Intervention	3-month follow-up - Baseline	0.065	0.015	4.381	1171	<0.001	0.036	0,094
Difference in change between intervention and control		0.081	0.0186	4.338	2644	<0.001	0.0442	0.117
The sequential Šidák adjusted significance level is .05.								
Confidence interval bounds are approximate.								

eTable 10. Gender-Specific Comparison of the Change of Daily Sunscreen Use Between the Intervention and Control Groups

							95% Confidence Interval	
Pairwise Contrasts								
Gender & Treatment group	Survey Wave pairwise Contrasts	Contrast Estimate	Std. Error	t	df	Adj. Sig.	Lower	Upper
Female Control	3-month follow-up - Baseline	-0.004	0.021	-0.209	1439	0.835	-0.045	0.036
Female Intervention	3-month follow-up - Baseline	0.120	0.024	4.998	1354	<0.001	0.073	0.167
Female	Change difference Intervention-Control	0.124	0.032	3.941	2791	<0.001	0.062	0.186
Male Control	3-month follow-up - Baseline	-0.028	0.013	-2.147	1484	0.032	-0.054	-0.002
Male Intervention	3-month follow-up - Baseline	0.009	0.018	0.488	1488	0.626	-0.027	0.044
Male	Change difference Intervention-Control	0.037	0.022	1.660	2970	0.097	-0.007	0.081
The sequential Šidák adjusted significance level is .05.								
Confidence interval bounds are approximate.								

Secondary end point: self-skin examinations

eTable 11. Descriptive Characteristic of Pupils With at Least 1 Skin Self-examination in the Past 6 Months at Baseline and 3- and 6-Month Follow-up

		Time Point*	Intervention Group	95%CI	Control Group	95%CI
Total		B	184/734 (25.1%)	22.0 – 28.4 %	241/839 (28.7%)	25.7 – 31.9 %
		F3	255/618 (41.3%)	37.3 – 45.3 %	213/784 (27.2%)	24.1 – 30.4 %
		F6	300/607 (49.4%)	45.4 – 53.5 %	211/787 (26.8%)	23.7 – 30.1 %
Gender	Male	B	75/336 (22.3%)	18.0 – 27.2 %	104/425 (24.5%)	20.5 – 28.8 %
		F3	102/275 (37.1%)	31.4 – 43.1 %	92/395 (23.3%)	19.2 – 27.8 %
		F6	110/269 (40.9%)	35.0 – 47.0 %	87/392 (22.2%)	18.2 – 26.6 %
	Female	B	109/398 (27.4%)	23.1 – 32.1 %	137/414 (33.1%)	28.6 – 37.9 %
		F3	153/343 (44.6%)	39.3 – 50.0 %	121/389 (31.1%)	26.5 – 36.0 %
		F6	190/338 (56.2%)	50.7 – 61.6 %	124/395 (31.4%)	26.8 – 36.2 %
School grade	9th grade	B	38/145 (26.2%)	19.3 – 34.2 %	40/113 (35.4%)	26.8 – 45.0 %
		F3	54/126 (42.9%)	34.1 – 52.0 %	34/108 (31.5%)	22.9 – 41.1 %
		F6	64/126 (50.8%)	41.7 – 59.8 %	31/108 (28.7%)	20.4 – 38.2 %
	10th grade	B	54/221 (24.4%)	18.9 – 30.6 %	57/231 (24.7%)	19.3 - 30.8 %
		F3	70/181 (38.7%)	31.5 – 46.2 %	54/218 (24.8%)	19.2 – 31.1 %
		F6	90/189 (47.6%)	40.3 – 55.0 %	48/213 (22.5%)	17.1 – 28.7 %
	11th grade	B	43/178 (24.2%)	18.1 – 31.1 %	71/246 (28.9%)	23.3 – 35.0 %
		F3	54/149 (36.2%)	28.5 – 44.5 %	60/231 (26.0%)	20.4 – 32.1 %
		F6	68/147 (46.3%)	38.0 – 54.7 %	65/237 (27.4%)	21.8 – 33.6 %
	12th grade	B	49/190 (25.8%)	19.7 – 32.6 %	73/249 (29.3%)	23.7 – 35.4 %
		F3	77/162 (47.5%)	39.6 – 55.5 %	65/227 (28.6%)	22.8 – 35.0 %
		F6	78/145 (53.8%)	45.3 – 62.1 %	67/229 (29.3%)	23.5 – 35.6 %
Fitzpatrick Skin Type	Type I or II	B	14/46 (30.4%)	17.7 – 45.8 %	20/70 (28.6%)	18.4 – 40.6 %
		F3	20/39 (51.3%)	34.8 – 67.6 %	16/64 (25.0%)	15.0 – 37.4 %
		F6	20/37 (54.1%)	36.9 – 70.5 %	17/65 (26.2%)	16.0 – 38.5 %
	Type III	B	68/256 (26.6%)	21.3 – 32.4 %	103/293 (35.2%)	29.7 – 40.9 %
		F3	91/210 (43.3%)	36.5 – 50.3 %	90/275 (32.7%)	27.2 – 38.6 %
		F6	102/211 (48.3%)	41.4 – 55.3 %	86/273 (31.5%)	26.0 – 37.4 %
	Type IV	B	87/368 (23.6%)	19.4 – 28.3 %	103/421 (24.5%)	20.4 – 28.9 %
		F3	127/316 (40.2%)	34.7 – 45.8 %	96/393 (24.4%)	20.3 – 29.0 %
		F6	159/311 (51.1%)	45.4 – 56.8 %	97/396 (24.5%)	20.3 – 29.0 %
	Type V	B	15/64 (23.4%)	13.8 – 35.7 %	15/55 (27.3%)	16.1 – 41.0 %
		F3	17/53 (32.1%)	19.9 – 46.3 %	11/52 (21.2%)	11.1 – 34.7 %
		F6	19/48 (39.6%)	25.8 – 54.7 %	11/53 (20.8%)	10.8 – 34.1 %

* Because the dropouts do not distort the secondary objectives, all available cases were included in the calculations at all times (intention-to-treat analysis).

95% confidence intervals were calculated using the Clopper and Pearson method.

B = baseline 3F= 3-mo follow-up 6F = 6-mo follow-up

eTable 12. Comparison of the Change of the Prevalence of Pupils With at Least 1 Skin Self-examination Between the Intervention and Control Groups

Pairwise Contrasts								
Treatment group	Survey Wave pairwise Contrasts	Contrast Estimate	Std. Error	t	df	Adj. Sig.	95% Confidence Interval	
							Lower	Upper
Control	6-month follow-up - Baseline	-0.020	0.017	-1.209	1449	0.227	-0.054	0,013
Intervention	6-month follow-up - Baseline	0.243	0.021	11.571	1266	<0.001	0.202	0,284
Difference in change between intervention and control		0.264	0.027	9.869	2713	<0.001	0.211	0.316
The sequential Šidák adjusted significance level is .05.								
Confidence interval bounds are approximate.								

eTable 14 shows that the school grade had no significant influence on self-skin examination. Therefore, this feature was removed from the model that was used for the pairwise contrasts related to the secondary end point "skin self-examinations" (eTables 12-13). The Fitzpatrick skin type does not have a significant effect (see eTable 14), but was left in the model for adjustment.

eTable 13. Gender-Specific Comparison of the Change of the Prevalence of Pupils With at Least 1 Skin Self-examination Between the Intervention and Control Groups

Gender & Treatment group	Survey Wave pairwise Contrasts	Contrast Estimate	Std. Error	t	df	Adj. Sig.	95% Confidence Interval	
Pairwise Contrasts							Lower	Upper
Female Control	6-month follow-up - Baseline	-0.017	0.025	-0.693	1434	0.488	-0.066	0.031
Female Intervention	6-month follow-up - Baseline	0.282	0.028	10.178	1476	<0.001	0.228	0.337
Female	Change difference Intervention-Control	0.300	0.037	8.037	2908	<0.001	0.227	0.373
Male Control	6-month follow-up - Baseline	-0.023	0.023	-1.036	1460	0.300	-0.068	0.021
Male Intervention	6-month follow-up - Baseline	0.192	0.030	6.354	1455	<0.001	0.132	0.251
Male	Change difference Intervention-Control	0.215	0.038	5.710	2913	<0.001	0.141	0.289
The sequential Šidák adjusted significance level is .05.								
Confidence interval bounds are approximate.								

eTable 14. Analysis of the Influence of Different Factors on the Secondary End Point "Skin Self-examination Within the Past 6 Months"

Source	F	df1	df2	Sig.
Fixed Effects[a]				
Corrected Model	17.307	10	128	<0.001
Wave	59.725	1	1496	<0.001
Interv_Control	9.739	1	46	0.003
Wave * Interv_Control	87.814	1	1496	<0.001
Gender	18.260	1	1561	<0.001
School grade	0.823	3	46	0.488
Fitzpatrick Skin Type	1.846	3	1560	0.137
Probability distribution: Binomial				
Link function: Logit				
a. Target: At least one self-skin examination in the last 6 months				

Secondary end point: tanning sessions

eTable 15. Descriptive Characteristic of Pupils With at Least 1 Tanning Session in the Past 30 Days at Baseline and 3- and 6-Month Follow-up

		Time Point*	Intervention Group	95%CI	Control Group	95%CI
Total		B	138/734 (18.8%)	16.0 – 21.8 %	109/839 (13.0%)	10.8 – 15.5 %
		F3	74/618 (12.0%)	9.5 – 14.8 %	90/784 (11.5%)	9.3 – 13.9 %
		F6	92/607 (15.2%)	12.4 – 18.3 %	107/787 (13.6%)	11.3 – 16.2 %
Gender	Male	B	41/336 (12.2%)	8.9 – 16.2 %	35/425 (8.2%)	5.8 – 11.3 %
		F3	28/275 (10.2%)	6.9 – 14.4 %	22/395 (5.6%)	3.5 – 8.3 %
		F6	24/269 (8.9%)	5.8 – 13.0 %	21/392 (5.4%)	3.3 – 8.1 %
	Female	B	97/398 (24.4%)	20.2 – 28.9 %	74/414 (17.9%)	14.3 – 21.9 %
		F3	46/343 (13.4%)	10.0 – 17.5 %	68/389 (17.5%)	13.8 – 21.6 %
		F6	68/338 (20.1%)	16.0 – 24.8 %	86/395 (21.8%)	17.8 – 26.2 %
School grade	9th grade	B	35/145 (24.1%)	17.4 – 31.9 %	17/113 (15.0%)	9.0 – 23.0 %
		F3	14/126 (11.1%)	6.2 – 17.9 %	21/108 (19.4%)	12.5 – 28.2 %
		F6	18/126 (14.3%)	8.7 – 21.6 %	22/108 (20.4%)	13.2 – 29.2 %
	10th grade	B	30/221 (13.6%)	9.3 – 18.8 %	37/231 (16.0%)	11.5 – 21.4 %
		F3	23/181 (12.7%)	8.2 – 18.5 %	26/218 (11.9%)	7.9 – 17.0 %
		F6	26/189 (13.8%)	9.2 – 19.5 %	31/213 (14.6%)	10.1 – 20.0
	11th grade	B	39/178 (21.9%)	16.1 – 28.7 %	28/246 (11.4%)	7.7 – 16.0 %
		F3	16/149 (10.7%)	6.3 – 16.9 %	24/231 (10.4%)	6.8 – 15.1 %
		F6	28/147 (19.0%)	13.0 – 26.3 %	26/237 (11.0%)	7.3 – 15.7 %
	12th grade	B	34/190 (17.9%)	12.7 – 24.1 %	27/249 (10.8%)	7.3 – 15.4 %
		F3	21/162 (13.0%)	8.2 – 19.1 %	19/227 (8.4%)	5.1 – 12.8 %
		F6	20/145 (13.8%)	8.6 – 20.5 %	28/229 (12.2%)	8.3 – 17.2 %
Fitzpatrick Skin Type	Type I or II	B	8/46 (17.4%)	7.8 – 31.4 %	9/70 (12.9%)	6.1 – 23.0 %
		F3	2/39 (5.1%)	0.6 – 17.3 %	11/64 (17.2%)	8.9 – 28.7 %
		F6	4/37 (10.8%)	3.0 – 25.4 %	10/65 (15.4%)	7.6 – 26.5 %
	Type III	B	56/256 (21.9%)	17.0 – 27.4 %	41/293 (14.0%)	10.2 – 18.5 %
		F3	26/210 (12.4%)	8.2 – 17.6 %	32/275 (11.6%)	8.1 – 16.0 %
		F6	36/211 (17.1%)	12.2 – 22.8 %	40/273 (14.7%)	10.7 – 19.4 %
	Type IV	B	64/368 (17.4%)	13.7 – 21.7 %	49/421 (11.6%)	8.7 – 15.1 %
		F3	37/316 (11.7%)	8.4 – 15.8 %	41/393 (10.4%)	7.6 – 13.9 %
		F6	41/311 (13.2%)	9.6 – 17.5 %	51/396 (12.9%)	9.7 – 16.6 %
	Type V	B	10/64 (15.6%)	7.8 – 26.9 %	10/55 (18.2%)	9.1 – 30.9 %
		F3	9/53 (17.0%)	8.1 – 29.8 %	6/52 (11.5%)	4.4 – 23.4 %
		F6	11/48 (22.9%)	12.0 – 37.3 %	6/53 (11.3%)	4.3 – 23.0 %

* Because the drop-outs do not distort the secondary objectives, all available cases were included in the calculations at all times (intention-to-treat analysis).

95% confidence intervals were calculated using the Clopper and Pearson method.

B = baseline 3F = 3-mo follow-up 6F = 6-mo follow-up

eTable 16. Comparison of the Change of the Prevalence of Pupils With at Least 1 Tanning Session in the Past 30 Days Between the Intervention and Control Groups

Treatment group	Survey Wave pairwise Contrasts	Contrast Estimate	Std. Error	t	df	Adj. Sig.	95% Confidence Interval	
Pairwise Contrasts without distinction by gender								
							Lower	Upper
Control	6-month follow-up - Baseline	0.006	0.013	0.431	1456	0.667	-0.020	0.031
Intervention	6-month follow-up - Baseline	**-0.035**	0.015	-2.341	1559	**0.019**	-0.065	-0.006
Difference in change F6-B between intervention and control		**-0.041**	0.020	-2.053	3013	**0.040**	-0.080	-0.002
Control	3-month follow-up - Baseline	-0.016	0.012	-1.299	1501	0.350	-0.044	0.012
Intervention	3-month follow-up - Baseline	**-0.062**	0.015	-4.153	1141	**0.000**	-0.098	-0.027
Difference in change F3-B between intervention and control		**-0.046**	0.019	-2.423	2640	**0.015**	-0.083	-0.009
Control	6-month follow-up - 3-month follow-up	0.022	0.008	2.653	1337	0.024	0.002	0.041
Intervention	6-month follow-up - 3-month follow-up	**0.027**	0.009	2.982	1281	**0.006**	0.007	0.048
Difference in change F6-F3 between intervention and control		0.005	0.012	0.416	2616	0.677	-0.019	0.029
The sequential Šidák adjusted significance level is .05.								
Confidence interval bounds are approximate. B = baseline. F3 = 3 months follow-up. F6 = 6 months follow-up.								

eTable 18 shows that the school grade and Fitzpatrick skin type had no significant influence on the tanning sessions. Therefore, these two features were removed from the model that was used for the pairwise contrasts related to the secondary end point "tanning sessions" (eTables 16-17).

eTable 17. Gender-Specific Comparison of the Change of the Prevalence of Pupils With at Least 1 Tanning Session in the Past 30 Days Between the Intervention and Control Groups

Gender & Treatment group	Survey Wave pairwise Contrasts	Contrast Estimate	Std. Error	t	df	Adj. Sig.	95% Confidence Interval	
Pairwise Contrasts with Gender and Treatment Group combined								
							Lower	Upper
Female Control	6-month follow-up - Baseline	0.036	0.023	1.596	1453	0.209	-0.015	0.087
Female Intervention	6-month follow-up - Baseline	-0.044	0.024	-1.810	1537	0.070	-0.092	0.004
Female F6-B	Change difference Intervention-Control	-0.080	0.033	-2.402	2988	0.016	-0.145	-0.015
Female Control	3-month follow-up - Baseline	-0.005	0.022	-0.248	1471	0.804	-0.048	0.037

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Female Intervention	3-month follow-up - Baseline	-0.109	0.023	-4.714	1144	0.000	-0.164	-0.054
Female F3-B	Change difference Intervention-Control	-0.104	0.032	-3.235	2613	0.001	-0.167	-0.041
Female Control	6-month follow-up - 3-month follow-up	0.042	0.015	2.861	1337	0.013	0.007	0.076
Female Intervention	6-month follow-up - 3-month follow-up	0.065	0.015	4.343	1019	0.000	0.031	0.098
Female F6-F3	Change difference Intervention-Control	0.023	0.022	1.065	2354	0.287	-0.019	0.065
Male Control	6-month follow-up - Baseline	-0.023	0.014	-1.690	1504	0.174	-0.054	0.008
Male Intervention	6-month follow-up - Baseline	-0.031	0.020	-1.571	1580	0.310	-0.077	0.016
Male F6-B	Change difference Intervention-Control	-0.008	0.025	-0.325	3082	0.745	-0.056	0.040
Male Control	3-month follow-up - Baseline	-0.026	0.013	-1.968	1506	0.140	-0.059	0.006
Male Intervention	3-month follow-up - Baseline	-0.016	0.020	-0.811	1556	0.443	-0.056	0.024
Male F3-B	Change difference Intervention-Control	0.010	0.024	0.416	3060	0.677	-0.037	0.057
Male Control	6-month follow-up - 3-month follow-up	0.003	0.008	0.421	1341	0.674	-0.012	0.019
Male Intervention	6-month follow-up - 3-month follow-up	-0.015	0.013	-1.142	1390	0.443	-0.043	0.014
Male F6-F3	Change difference Intervention-Control	-0.018	0.015	-1.169	2729	0.242	-0.048	0.012
The sequential Šidák adjusted significance level is .05.								
Confidence interval bounds are approximate. B = baseline. F3 = 3 months follow-up. F6 = 6 months follow-up.								

eTable 18. Analysis of the Influence of Different Factors on the Secondary End Point "at Least 1 Tanning Session Within the Past 30 Days"

Fixed Effects[a]				
Source	F	df1	df2	Sig.
Corrected Model	8.399	10	138	0.000
Wave	1.915	1	1470	0.167
Interv_Control	1.201	1	49	0.279
Wave * Interv_Control	4.051	1	1470	0.044
Gender	69.938	1	1554	0.000
School grade	0.913	3	48	0.442
Fitzpatrick Skin Type	1.469	3	1538	0.221
Probability distribution: Binomial Link function: Logit				
a. Target: At least one tanning session within the last 30 days				

Attrition Analysis

eTable 19. Dropouts in Relation to Assigned Group

a) Crosstab

| | | | Lost to follow-up at 6 months follow-up | | |
			No dropout	Dropout	Total
Group (control or intervention)	Control	Count	787	52	839
		Row %	93,8%	6,2%	100,0%
	Intervention	Count	607	127	734
		Row %	82,7%	17,3%	100,0%
Total		Count	1394	179	1573
		Row %	88,6%	11,4%	100,0%

b) Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	47,871[a]	1	,000		
Continuity Correction[b]	46,777	1	,000		
Likelihood Ratio	48,709	1	,000		
Fisher's Exact Test				**,000**	,000
Linear-by-Linear Association	47,841	1	,000		
N of Valid Cases	1573				

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 83,53.

b. Computed only for a 2x2 table

eTable 20. Dropouts in Relation to Sunscreen Use

a) Crosstab

| | | | Lost to follow-up at 6 months follow-up | | |
			No dropout	Dropout	Total
Daily sunscreen use	No	Count	1185	153	1338
		Row %	88,6%	11,4%	100,0%
	Yes	Count	209	26	235
		Row %	88,9%	11,1%	100,0%
Total		Count	1394	179	1573
		Row %	88,6%	11,4%	100,0%

b) Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	,027[a]	1	,869		
Continuity Correction[b]	,003	1	,957		
Likelihood Ratio	,027	1	,868		
Fisher's Exact Test				**1,000**	,487
Linear-by-Linear Association	,027	1	,869		
N of Valid Cases	1573				

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 26,74.

b. Computed only for a 2x2 table

eTable 21. Dropouts in Relation to Skin Self-examinations

a) Crosstab

| | | | Lost to follow-up at 6 months follow-up | | |
			No dropout	Dropout	Total
Self-skin examination in the previous 6 months	None	Count	1013	135	1148
		Row %	88,2%	11,8%	100,0%
	At least once	Count	381	44	425
		Row %	89,6%	10,4%	100,0%
Total		Count	1394	179	1573
		Row %	88,6%	11,4%	100,0%

b)Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	,609[a]	1	,435		
Continuity Correction[b]	,477	1	,490		
Likelihood Ratio	,619	1	,431		
Fisher's Exact Test				**,475**	,247
Linear-by-Linear Association	,608	1	,435		
N of Valid Cases	1573				

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 48,36.
b. Computed only for a 2x2 table

eTable 22. Dropouts in Relation to Tanning Sessions

a) Crosstab

			Lost to follow-up at 6 months follow-up		Total
			No dropout	Dropout	
Tanning sessions in the past 30 days	No session	Count	1178	148	1326
		Row %	88,8%	11,2%	100,0%
	At least one session	Count	216	31	247
		Row %	87,4%	12,6%	100,0%
Total		Count	1394	179	1573
		Row %	88,6%	11,4%	100,0%

b) Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	,398[a]	1	,528		
Continuity Correction[b]	,273	1	,602		
Likelihood Ratio	,389	1	,533		
Fisher's Exact Test				**,514**	,296
Linear-by-Linear Association	,398	1	,528		
N of Valid Cases	1573				

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 28,11.

b. Computed only for a 2x2 table

eTable 23. Dropouts in Relation to Gender

a) Crosstab

			Lost to follow-up (F6)		
			0 kein Dropout	1 Dropout	Total
Gender	0 male	Count	661	100	761
		Row %	86,9%	13,1%	100,0%
	1 female	Count	733	79	812
		Row %	90,3%	9,7%	100,0%
Total		Count	1394	179	1573
		Row %	88,6%	11,4%	100,0%

b) Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	4,534[a]	1	,033		
Continuity Correction[b]	4,202	1	,040		
Likelihood Ratio	4,536	1	,033		
Fisher's Exact Test				**,039**	,020
Linear-by-Linear Association	4,531	1	,033		
N of Valid Cases	1573				

a. 0 cells (0,0%) have expected count less than 5. The minimum expected count is 86,60.

b. Computed only for a 2x2 table