Pressure-mediated reflection spectroscopy criterion validity as a biomarker of fruit and vegetable intake: A two-site cross-sectional study of four racial/ethnic groups

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Online Supplementary Material

Supplemental Table 1. Pearson correlations between skin carotenoids, melanin, semi-quantitative food frequency questionnaire (SFFQ) self-reported dietary carotenoids, and plasma carotenoids, overall and by racial/ethnic group.

SFFQ Dietary Variables	All N = 213		Black N = 61		Asian N = 53		White N = 70		Hispanic N = 29	
	Skin carotenoids	Melanin index	Skin carotenoids	Melanin index	Skin carotenoids	Melanin index	Skin carotenoids	Melanin index	Skin carotenoids	Melanin index
Fruits and vegetables, servings / day	0.365	0.289	0.291	0.119	0.446	0.352	0.539	0.450	0.466	0.438
P-value	<.001	<.001	0.024	0.364	0.001	0.010	<.001	<.001	0.013	0.020
Total carotenoids from foods	0.396	0.271	0.428	0.049	0.522	0.513	0.306	0.212	0.530	0.446
P-value	<.001	<.001	0.001	0.712	<.001	<.001	0.010	0.079	0.004	0.017
Total carotenoids from foods without lycopene	0.416	0.239	0.426	0.031	0.555	0.497	0.318	0.142	0.558	0.426
P-value	<.001	0.001	0.001	0.814	<.001	0.000	0.007	0.242	0.002	0.024
α-carotene from foods	0.347	0.230	0.305	0.071	0.415	0.383	0.301	0.307	0.409	0.269
P-value	<.001	0.001	0.018	0.588	0.002	0.005	0.011	0.010	0.031	0.166
β-carotene from foods	0.398	0.238	0.377	0.019	0.550	0.492	0.308	0.185	0.566	0.420
P-value	<.001	0.001	0.003	0.883	<.001	0.000	0.010	0.126	0.002	0.026
β-cryptoxanthin from foods	0.202	0.141	0.220	0.066	0.040	0.031	0.394	0.291	0.451	0.346
P-value	0.003	0.041	0.091	0.618	0.777	0.827	0.001	0.015	0.016	0.071

Lycopene from foods	0.081	0.197	0.142	0.080	0.236	0.367	0.102	0.251	-0.115	0.097
P-value	0.241	0.004	0.278	0.544	0.089	0.007	0.403	0.036	0.561	0.622
Lutein from foods	0.391	0.200	0.471	0.030	0.522	0.466	0.265	0.029	0.547	0.459
P-value	<.001	0.004	0.000	0.817	<.001	0.000	0.027	0.812	0.003	0.014
Plasma carotenoid variables										
Total carotenoids	0.713	0.511	0.634	0.368	0.695	0.672	0.727	0.555	0.785	0.555
P-value	<.001	<.001	<.001	0.004	<.001	<.001	<.001	<.001	<.001	0.002
α and β cryptoxanthin	0.623	0.354	0.624	0.313	0.577	0.398	0.648	0.429	0.635	0.433
P-value	<.001	<.001	<.001	0.014	<.001	0.003	<.001	<.001	<.001	0.019
Lutein + zeaxanthin	0.658	0.313	0.509	0.072	0.704	0.431	0.646	0.439	0.744	0.327
P-value	<.001	<.001	<.001	0.583	<.001	0.001	<.001	<.001	<.001	0.083
α-carotene	0.595	0.454	0.654	0.308	0.529	0.640	0.628	0.494	0.634	0.565
P-value	<.001	<.0001	<.001	0.016	<.001	<.001	<.001	<.001	0.000	0.001
Total β-Carotene	0.662	0.470	0.646	0.271	0.651	0.723	0.656	0.496	0.749	0.488
P-value	<.001	<.001	<.001	0.035	<.001	<.001	<.001	<.001	<.001	0.007
Total Lycopene	0.066	0.226	0.085	0.336	0.114	0.160	0.010	0.117	0.248	0.395
P-value	0.335	0.001	0.516	0.008	0.418	0.251	0.937	0.336	0.194	0.034
Melanin index	0.499		0.231		0.677		0.612		0.535	
P-value	<.001		0.073		<.001		<.001		0.003	

Supplemental Table 2. Pearson correlations between log2-transformed plasma carotenoids, log2-transformed F&V consumption, and log2-transformed dietary carotenoid intake within each racial/ethnic group.

	Self-reported FV intake	Self-reported carotenoid intake
Total plasma carotenoids	Correlations	Correlations
Total	0.317 <.001	0.366 <.001
Non-Hispanic Black or African American	0.160 0.223	0.291 0.024
Asian	0.356 0.009	0.438 0.001
Non-Hispanic White	0.477 <.001	0.344 0.004
Hispanic/ Latino	0.389 0.041	0.477 0.010

Note: A log2-transformation was used to stabilize variances and improve the linearity of the relationships.