

Supplementary Table I. Characteristics of research subjects included in, and those excluded from, the analysis of adipose tissue carotenoid levels in relation to prostate cancer aggressiveness					
	Included n = 945		Excluded n = 1157		<i>P</i> value
	Mean (SD)		Mean (SD)		
Age, years	63 (8)		63 (8)		0.38
Energy Intake, kcals/day	2461 (1019)		2486 (1058)		0.59
Dietary Fat Intake, grams/day	95(44)		93 (45)		0.45
Body Mass Index (BMI), kg/m ²	30 (5)		29 (5)		<0.0001
	N	%	N	%	
Race					
African American	361	38	662	57	<0.0001
European American	584	62	495	43	
Prostate Aggressiveness					
Low aggressive	485	51	589	51	0.45
Intermediate aggressive	156	16	214	18	
High aggressive	304	32	354	31	
Study Site					
North Carolina	407	43	592	51	0.0002
Louisiana	538	57	565	49	
Family History of Prostate Cancer					
No affected 1 st degree relative	696	74	899	78	0.03
At least 1 affected 1 st degree relative	249	26	258	22	
Prostate Cancer Screening History					
0 screenings	248	26	372	32	<0.0001
1-7 screenings	375	40	489	42	
> 7 screenings	322	34	296	26	
Comorbidities					
0	497	53	560	49	0.11
1	224	24	290	25	
2	105	11	164	14	
≥ 3	119	12	143	12	
Started CaP Treatment at Start of Study					
No	95	10	147	13	0.13
Yes	749	79	879	76	
Unknown	101	11	131	11	
Education					
Graduate/professional degree	155	17	136	12	0.0004
Some college or college graduate	351	37	386	33	
High school grad or voc/tech school	268	28	369	32	
Less than high school education	171	18	265	23	

Supplementary Table I (continued). Characteristics of research subjects included in, and those excluded from, the analysis of adipose tissue carotenoid levels in relation to prostate cancer aggressiveness					
	Included n = 945		Excluded n = 1157		<i>P</i> value
	Mean (SD)		Mean (SD)		
Income Level					
≤ \$20, 000	156	16	262	23	<0.0001
\$20,001 - \$40,000	188	20	293	25	
\$40,001 - \$60,000	148	16	182	16	
\$60,001 - \$80,000	124	13	102	9	
>\$80,000	233	25	225	19	
Unknown	96	10	93	8	
Smoking Status					
Never	355	37	350	30	0.0005
Former smokers	471	50	614	53	
Current smokers	119	13	193	17	
NSAID Use					
No	361	38	448	39	0.68
Yes	584	62	698	61	
Vitamin E Supplement Use ^a					
No	474	50	616	53	0.16
Yes	471	50	541	47	

Abbreviations: CaP – Prostate Cancer; SD – Standard deviation; NSAIDs – Nonsteroidal anti-inflammatory drugs. Prostate cancer aggressiveness defined by a combination of Gleason sum, clinical stage, and PSA level at diagnosis and classified as follows: High aggressive (Gleason sum ≥8 or PSA >20ng/ml or Gleason sum ≥7 AND clinical stage T3 -T4); Low /Intermediate aggressive: all other cases.

^a Includes single nutrient vitamin E supplement and multivitamins containing vitamin E.

* Student's *t* test for continuous variables and chi-square tests for categorical variables

Supplementary Table II (Sensitivity Analyses). Associations between dietary carotenoids and prostate cancer aggressiveness among European Americans and African Americans with data on adipose tissue carotenoid level only (n = 939)										
European American					African American					
Carotenoids	High aggressive/ low-intermediate aggressive ^a 89/492	OR (95% CI) ^b	OR (95% CI) ^c	P [†]	Carotenoids	High aggressive/ low-intermediate aggressive ^a 66/292	OR (95% CI) ^b	OR (95% CI) ^c	P [†]	
α-carotene										
Dietary μg/day										
	27.20 - 324.13	35/173	1.00 (ref)	1.00 (ref)		11.83 - 262.11	24/94	1.00 (ref)	1.00 (ref)	
	324.14 - 626.76	23/157	0.71 (0.40-1.27)	0.75 (0.41-1.41)		262.12 - 585.99	17/107	0.60 (0.30-1.20)	0.40 (0.18-1.16)	
	626.77 - 9812	31/162	0.89 (0.52-1.52)	0.88 (0.48-1.64)	0.33	586.00 - 9558	25/91	1.07 (0.57-2.01)	0.76 (0.36-1.62)	0.92
β-carotene										
Dietary μg/day										
	194.86 - 2327	34/163	1.00 (ref)	1.00 (ref)		286.48 - 2544	12/95	1.00 (ref)	1.00 (ref)	
	>2327 - 4046	19/179	0.48 (0.26-1.06)	0.50 (0.26-1.04)		>2544 - 5156	27/95	2.27 (0.93-4.77)	1.64 (0.74-3.64)	
	>4046 - 25124	36/150	1.05 (0.62-1.78)	1.07 (0.58-1.96)	0.44	>5156 - 32901	27/102	2.03 (0.97-4.24)	1.81 (0.77-4.23)	0.25
Supplement μg/day										
	non-users	48/277	1.00 (ref)	1.00 (ref)		non-users	50/211	1.00 (ref)	1.00 (ref)	
	63.00 - 600.00	33/181	1.09 (0.67-1.77)	1.35 (0.80-2.28)		63.00 - 590.00	7/25	1.35 (0.55-3.35)	1.24 (0.46-3.38)	
	600.01 - 16470	8/34	1.36 (0.59-3.15)	1.73 (0.70-4.24)	0.15	590.01 - 15600	9/56	0.69 (0.32-1.50)	0.87 (0.38-1.97)	0.83
Diet + supplement μg/day										
	346.80 - 2566	31/162	1.00 (ref)	1.00 (ref)		286.48 - 2773	16/94	1.00 (ref)	1.00 (ref)	
	>2566.42 - 4458	24/179	0.86 (0.38-1.21)	0.71 (0.38-1.33)		>2773 - 5405	25/95	1.54 (0.77-3.09)	1.15 (0.54-2.43)	
	>4458 - 25512	34/151	1.08 (0.62-1.85)	1.10 (0.60-2.04)	0.50	>5405 - 32901	25/103	1.39 (0.70-2.77)	1.20 (0.54-2.68)	0.69
β-cryptoxanthin										
Dietary μg/day										
	6.04 - 86.14	19/170	1.00 (ref)	1.00 (ref)		3.53 - 116.43	25/101	1.00 (ref)	1.00 (ref)	
	86.15 - 180.62	38/159	2.10 (0.89-3.82)	1.94 (0.64-3.64)		116.44 - 243.34	22/102	0.88 (0.46-1.66)	0.75 (0.37-1.53)	
	180.63 - 1082	32/163	1.70 (0.92-3.15)	1.57 (0.80-3.07)	0.38	243.34 - 1594	19/89	0.87 (0.45-1.70)	0.59 (0.27-1.28)	0.19

Supplementary Table II (Sensitivity Analyses; continued). Associations between dietary carotenoids and prostate cancer aggressiveness among European Americans and African Americans with data on adipose tissue carotenoid level only (n = 939)									
European American					African American				
Carotenoids	High aggressive/ low-intermediate aggressive ^a 89/492	OR (95% CI) ^b	OR (95% CI) ^c	P [†]	Carotenoids	High aggressive/ low-intermediate aggressive ^a 66/292	OR (95% CI) ^b	OR (95% CI) ^c	P [†]
Lutein + Zeaxanthin									
Dietary $\mu\text{g/day}$									
289.67 - 1830	30/166	1.00 (ref)	1.00 (ref)		112.25 - 2299	17/103	1.00 (ref)	1.00 (ref)	
>1830 - 3253	24/166	0.72 (0.40-1.30)	0.82 (0.43-1.56)		>2299 - 4408	24/90	1.57 (0.79-3.12)	1.11 (0.52-2.37)	
>3253 - 30165	35/160	1.20 (0.70-2.07)	1.34 (0.71-2.50)	0.21	>4408 - 36608	25/99	1.53 (0.78-3.02)	1.35 (0.63-2.90)	0.42
Supplement (lutein) ^e									
non-users	59/325	1.00 (ref)	1.00 (ref)		non-users	55/248	1.00 (ref)	1.00 (ref)	
users	30/167	1.04 (0.64-1.69)	0.90 (0.54-1.52)		users	11/44	0.89 (0.43-1.83)	0.69 (0.32-1.51)	
Diet + supplement $\mu\text{g/day}$									
289.67 - 1907	28/168	1.00 (ref)	1.00 (ref)		112.25 - 2309	17/102	1.00 (ref)	1.00 (ref)	
>1907 - 3318	28/164	0.91 (0.51-1.63)	1.06 (0.57-1.99)		>2309 - 4461	24/91	1.53 (0.77-3.04)	1.10 (0.51-2.35)	
>3318 - 31665	33/160	1.23 (0.70-2.15)	1.40 (0.73-2.66)	0.26	>4461 - 37558	25/99	1.52 (0.77-2.99)	1.35 (0.63-2.88)	0.42
Lycopene									
Dietary $\mu\text{g/day}$									
344.77 - 3605	34/162	1.00 (ref)	1.00 (ref)		21.52 - 2390	15/97	1.00 (ref)	1.00 (ref)	
>3605 - 6299	28/154	0.87 (0.50-1.52)	0.83 (0.46-1.51)		>2390 - 5003	23/87	1.82 (0.89-3.74)	1.69 (0.76-3.75)	
>6299 - 100250	27/176	0.81 (0.46-1.41)	0.63 (0.32-1.23)	0.18	>5003 - 85677	26/108	1.72 (0.85-3.48)	1.36 (0.59-3.01)	0.79
Supplement $\mu\text{g/day}$									
non-users	54/243	1.00 (ref)	1.00 (ref)		non-users	42/205	1.00 (ref)	1.00 (ref)	
64.28 - 250.00	13/114	1.40 (0.38-5.15)	1.46 (0.38-5.63)		64.28 - 250.00	14/40	1.78 (0.60-4.76)	1.94 (0.52-6.32)	
250.01 - 5000	22/135	0.86 (0.51-1.47)	1.00 (0.57-1.76)	0.95	250.01 - 1000	10/47	0.99 (0.46-2.10)	1.10 (0.49-2.45)	0.70
Diet + supplement $\mu\text{g/day}$									
344.77 - 3649	33/165	1.00 (ref)	1.00 (ref)		21.52 - 2448	16/98	1.00 (ref)	1.00 (ref)	
>3649 - 6352	29/150	0.98 (0.56-1.70)	0.96 (0.53-1.74)		>2448 - 5064	22/87	1.72 (0.84-3.51)	1.56 (0.71-3.44)	
>6352 - 100550	27/177	0.85 (0.49-1.49)	0.69 (0.35-1.37)	0.26	>5064 - 85677	26/107	1.67 (0.84-3.34)	1.31 (0.58-2.96)	0.79

^a Adjusted for age
^b Additional adjustment for PSA screening history, BMI, smoking status, education, income, NSAIDs use, total dietary fat intake, and study site
^c First value represents age-adjusted trend p-values and the second is the multivariable adjusted trend p-value
^d Categorized into two levels because limited variability in dose did not allow for creation of meaningful tertile categories
[†] Multivariable-adjusted trend p-values