

## Supplementary material

**Table S1. Plasma xanthophylls and macular pigment optical density according to the consumption of food items rich in lutein and/or zeaxanthin.**

	Lutein		Zeaxanthin		MPOD 0.5°	
	$\beta$ (SE)	<i>P</i> -value	$\beta$ (SE)	<i>P</i> -value	$\beta$ (SE)	<i>P</i> -value
<b>Cabbage</b>						
1–3 times/month vs never	0.036 (0.033)	0.28	0.001 (0.031)	0.97	–0.038 (0.028)	0.17
1–3 times/week vs never	–0.023 (0.041)	0.57	–0.025 (0.039)	0.53	–0.048 (0.035)	0.17
<b>Spinach</b>						
1–3 times/month vs never	0.049 (0.032)	0.13	–0.048 (0.030)	0.12	–0.029 (0.027)	0.39
1–3 times/week vs never	0.041 (0.047)	0.38	–0.010 (0.045)	0.81	–0.006 (0.040)	0.88
<b>Squash</b>						
1–3 times/month vs never	0.042 (0.039)	0.29	0.051 (0.038)	0.18	0.040 (0.034)	0.25
1–3 times/week vs never	0.102 (0.032)	<b>0.009</b>	0.099 (0.037)	<b>0.007</b>	0.025 (0.033)	0.44
<b>Broccoli</b>						
1–3 times/month vs never	0.063 (0.032)	<b>0.049</b>	–0.046 (0.030)	0.13	–0.008 (0.027)	0.76
1–3 times/week vs never	0.042 (0.040)	0.29	0.060 (0.038)	0.08	–0.024 (0.034)	0.48
<b>Eggs</b>						
1–3 times/month vs never	0.022 (0.077)	0.79	–0.012 (0.079)	0.88	0.045 (0.070)	0.52
1–3 times/week vs never	0.040 (0.038)	0.60	–0.016 (0.073)	0.82	0.084 (0.065)	0.19
<b>Green beans</b>						
1–3 times/month vs never	0.155 (0.084)	0.055	0.066 (0.077)	0.39	0.044 (0.069)	0.52
1–3 times/week vs never	0.138 (0.079)	0.083	0.052 (0.076)	0.49	0.027 (0.068)	0.68
<b>Peas</b>						
1–3 times/month vs never	0.050 (0.037)	0.18	–0.015 (0.036)	0.66	0.014 (0.032)	0.65
1–3 times/week vs never	0.030 (0.043)	0.48	–0.026 (0.041)	0.53	–0.017 (0.037)	0.65
<b>Maize</b>						
1–3 times/month vs never	0.030 (0.048)	0.53	0.020 (0.045)	0.65	0.054 (0.041)	0.18
1–3 times/week vs never	0.112 (0.069)	0.10	0.144 (0.069)	<b>0.027</b>	–0.017 (0.058)	0.77
<b>Vegetable mixture</b>						
1–3 times/month vs never	0.039 (0.040)	0.32	0.017 (0.038)	0.65	–0.043 (0.034)	0.20
1–3 times/week vs never	0.011 (0.041)	0.78	0.013 (0.039)	0.73	–0.041 (0.035)	0.24
<b>Leafy greens</b>						
1–3 times/month vs never	–0.0006 (0.042)	0.99	–0.041 (0.039)	0.29	–0.008 (0.035)	0.81
1–3 times/week vs never	0.093 (0.064)	0.15	0.103 (0.061)	0.09	–0.003 (0.055)	0.95

MPOD: macular pigment optical density

**Table S2. Correlations between macular pigment optical density, plasma xanthophylls and lipids.**

	<b>MPOD 0.5° r* (P-value)</b>	<b>Lutein r* (P-value)</b>	<b>Zeaxanthin r* (P-value)</b>
<b>Lutein (µg/L)</b>	0.10 ( <b>0.030</b> )	-	0.62 ( <b>&lt;0.001</b> )
<b>Zeaxanthin (µg/L)</b>	0.11 ( <b>0.027</b> )	0.62 ( <b>&lt;0.001</b> )	-
<b>Total cholesterol (mmol/L)</b>	0.04 (0.33)	0.19 ( <b>&lt;0.001</b> )	0.14 ( <b>0.003</b> )
<b>LDL (mmol/L)</b>	0.02 (0.65)	0.11 ( <b>0.015</b> )	0.10 ( <b>0.030</b> )
<b>HDL (mmol/L)</b>	0.08 (0.11)	0.20 ( <b>&lt;0.001</b> )	0.15 ( <b>&lt;0.001</b> )
<b>PUFA (%)<sup>†</sup></b>	0.02 (0.73)	0.20 ( <b>&lt;0.001</b> )	0.14 ( <b>0.003</b> )
<b>Omega-3 PUFAs (%)<sup>†</sup></b>	-0.04 (0.46)	0.30 ( <b>&lt;0.001</b> )	0.15 ( <b>0.002</b> )
<b>Omega-6 PUFAs (%)<sup>†</sup></b>	0.03 (0.57)	0.12 ( <b>0.014</b> )	0.10 ( <b>0.026</b> )
<b>Omega-6/omega-3 (%)<sup>†</sup></b>	0.03 (0.45)	-0.20 ( <b>&lt;0.001</b> )	-0.10 (0.055)

MPOD: macular pigment optical density

PUFAs: polyunsaturated fatty acids

\* Correlation coefficients (Pearson or Spearman depending on variable distribution)

† Missing data for PUFA, ω3 and ω6:  $n = 9$

## Supplementary material

**Figure S1. UV-visible spectra of L and Z in a human plasma**

A: HPLC chromatogram showing L and Z separation according to 250-600nm (blue trace) and 450nm maximum absorption

B: UV-visible spectra of human plasma from 6.4 to 9min at 250 to 600nm maximum absorption

C: Absorption spectrum from 200 to 650nm of L in human plasma (retention time=7.4667min)

