

## Supplementary Online Content

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**eTable 1. Age- and multivariate-adjusted hazard ratios for rosacea by tea, soda, and chocolate in the Nurses' Health Study II (1991–2005)**

	No. of Case	No. of Person-Years	Crude Incidence Rate (/100,000 Person-Years)	Age-adjusted Incidence Rate <sup>c</sup> (/100,000 Person-Years)	Age-Adjusted		Multivariate-Adjusted <sup>a</sup>		
					HR	95% CI	HR	95% CI	
<b>Caffeinated tea, servings</b>									
<1/mo	1,110	283,499	392	439	<b>1.00</b>	<b>referent</b>	<b>1.00</b>	<b>referent</b>	
1/mo to 4/wk	2,327	494,849	470	488	1.08	1.00, 1.16	1.05	0.97, 1.12	
5-7/wk	622	151,213	411	456	1.03	0.93, 1.14	1.01	0.92, 1.12	
2-3/d	754	158,023	477	493	1.11	1.01, 1.22	1.07	0.98, 1.17	
≥4/d	132	32,467	407	443	1.07	0.89, 1.28	1.06	0.89, 1.27	
P <sub>trend</sub>					0.18		0.30		
<b>Caffeinated soda, servings</b>									
<1/mo	896	212,058	423	449	<b>1.00</b>	<b>referent</b>	<b>1.00</b>	<b>referent</b>	
1/mo to 4/wk	3,144	699,070	450	478	1.00	0.92, 1.07	0.95	0.88, 1.03	
5-7/wk	410	83,998	488	485	0.92	0.82, 1.04	0.85	0.75, 0.95	
2-3/d	484	120,534	402	470	0.96	0.86, 1.07	0.91	0.82, 1.02	
≥4/d	11	4,390	251	208	0.73	0.40, 1.32	0.79	0.43, 1.43	
P <sub>trend</sub>					0.19		0.08		
<b>Chocolate, servings</b>									
<1/mo	797	212,091	376	420	<b>1.00</b>	<b>referent</b>	<b>1.00</b>	<b>referent</b>	
1/mo to 4/wk	3,926	862,081	455	481	1.08	1.00, 1.16	1.02	0.94, 1.10	
5-7/wk	191	40,737	469	533	1.21	1.03, 1.42	1.17	1.00, 1.37	
≥2/d <sup>b</sup>	31	5,142	603	616	1.31	0.91, 1.87	1.31	0.91, 1.87	
P <sub>trend</sub>					0.005		0.04		

Abbreviations: CI, confidence interval; HR, hazard ratio.

<sup>a</sup> Adjusted for age (continuous variable), race (non-Hispanic white, African-American, Asian, or other race), postmenopausal hormone use (premenopause, never, current or past users), alcohol drinking (none, <4.9, 5.0–9.9, 10–14.9, 15–29.9, or ≥30.0 g/day), smoking status (never smokers, past smokers 1-4, past smokers 5-14, past smokers 15-24, past smokers ≥25, current smokers 1-4, current smokers 5-14, current smokers 15-24, current smokers ≥25 cigarettes/day), body mass index (continuous variable), and physical activity (metabolic equivalent in quintiles, h/wk).

<sup>b</sup> The category of “≥4 servings/d” has been combined with the category of “2-3 servings /d” as number of cases are zero for the category of “≥4 servings/d”.

<sup>c</sup> The incidence rate of rosacea adjusted to the age distribution in the Nurses’ Health Study II.

**eTable 2. Association between caffeine intake and rosacea stratified by smoking status in the Nurses' Health Study II (1991–2005)**

	No. of Case	No. of Person-Years	Age-Adjusted		Multivariate-Adjusted <sup>a</sup>	
			HR	95% CI	HR	95% CI
<b>Never smokers</b>						
Quintile 1 ( $\leq 46$ )	659	158,051	<b>1.00</b>	<b>referent</b>	<b>1.00</b>	<b>referent</b>
Quintile 2 (47-133)	849	188,131	1.01	0.91, 1.11	0.95	0.86, 1.05
Quintile 3 (134-233)	688	149,448	1.03	0.93, 1.15	0.96	0.87, 1.07
Quintile 4 (234-410)	678	148,856	0.98	0.88, 1.09	0.89	0.80, 1.00
Quintile 5 ( $\geq 411$ )	338	91,005	0.89	0.78, 1.02	0.82	0.71, 0.93
<b>Past smokers</b>						
Quintile 1 ( $\leq 46$ )	167	27,856	<b>1.00</b>	<b>referent</b>	<b>1.00</b>	<b>referent</b>
Quintile 2 (47-133)	225	42,289	0.81	0.66, 0.99	0.78	0.64, 0.96
Quintile 3 (134-233)	277	51,649	0.81	0.67, 0.99	0.78	0.64, 0.95
Quintile 4 (234-410)	441	82,562	0.79	0.66, 0.94	0.74	0.61, 0.88
Quintile 5 ( $\geq 411$ )	284	63,059	0.72	0.59, 0.87	0.69	0.57, 0.83
<b>Current smokers</b>						
Quintile 1 ( $\leq 46$ )	22	6,313	<b>1.00</b>	<b>referent</b>	<b>1.00</b>	<b>referent</b>
Quintile 2 (47-133)	36	11,672	0.83	0.49, 1.41	0.80	0.47, 1.37
Quintile 3 (134-233)	56	16,637	0.89	0.54, 1.46	0.86	0.52, 1.41
Quintile 4 (234-410)	101	30,342	0.85	0.53, 1.35	0.80	0.50, 1.27
Quintile 5 ( $\geq 411$ )	113	48,756	0.63	0.40, 0.99	0.61	0.38, 0.96
<b>P<sub>interaction</sub></b>			0.37			

Abbreviations: CI, confidence interval; HR, hazard ratio.

<sup>a</sup> Adjusted for age (continuous variable), race (non-Hispanic white, African-American, Asian, or other race), postmenopausal hormone use (premenopause, never, current or past users), alcohol drinking (none, <4.9, 5.0–9.9, 10–14.9, 15–29.9, or  $\geq 30.0$  g/day), body mass index (continuous variable), and physical activity (metabolic equivalent in quintiles, h/wk).

**eTable 3. Association between caffeine intake and rosacea stratified by alcohol intake in the Nurses' Health Study II (1991–2005)**

	No. of Case	No. of Person-Years	Age-Adjusted		Multivariate-Adjusted <sup>a</sup>	
			HR	95% CI	HR	95% CI
<b>Never drinker</b>						
Quintile 1 ( $\leq 46$ )	436	10,4890	<b>1.00</b>	<b>referent</b>	<b>1.00</b>	<b>referent</b>
Quintile 2 (47-133)	456	107,044	0.95	0.83, 1.08	0.92	0.80, 1.05
Quintile 3 (134-233)	347	76,406	1.03	0.89, 1.18	0.99	0.86, 1.14
Quintile 4 (234-410)	292	71,200	0.89	0.77, 1.03	0.86	0.74, 1.00
Quintile 5 ( $\geq 411$ )	188	58,513	0.76	0.64, 0.91	0.76	0.64, 0.91
<b>0g/d&lt; Alcohol intake amount &lt;5g/d</b>						
Quintile 1 ( $\leq 46$ )	278	53,845	<b>1.00</b>	<b>referent</b>	<b>1.00</b>	<b>referent</b>
Quintile 2 (47-133)	420	81,278	0.94	0.81, 1.09	0.92	0.79, 1.07
Quintile 3 (134-233)	350	77,332	0.84	0.71, 0.98	0.83	0.70, 0.97
Quintile 4 (234-410)	412	92,429	0.79	0.68, 0.92	0.79	0.67, 0.92
Quintile 5 ( $\geq 411$ )	246	71,941	0.67	0.56, 0.79	0.69	0.58, 0.82
<b>Alcohol intake amount <math>\geq 5g/d</math></b>						
Quintile 1 ( $\leq 46$ )	95	17,389	<b>1.00</b>	<b>referent</b>	<b>1.00</b>	<b>referent</b>
Quintile 2 (47-133)	190	34,448	0.9	0.70, 1.15	0.89	0.70, 1.14
Quintile 3 (134-233)	274	45,706	0.99	0.78, 1.25	0.98	0.78, 1.24
Quintile 4 (234-410)	464	77,644	0.97	0.78, 1.21	0.95	0.76, 1.19
Quintile 5 ( $\geq 411$ )	253	53,414	0.86	0.68, 1.09	0.86	0.68, 1.09
$P_{\text{interaction}}$			0.13			

Abbreviations: CI, confidence interval; HR, hazard ratio.

<sup>a</sup> Adjusted for age (continuous variable), race (non-Hispanic white, African-American, Asian, or other race), postmenopausal hormone use (premenopause, never, current or past users), smoking status (never smokers, past smokers 1-4, past smokers 5-14, past smokers 15-24, past smokers  $\geq 25$ , current smokers 1-4, current smokers 5-14, current smokers 15-24, current smokers  $\geq 25$  cigarettes/day), body mass index (continuous variable), and physical activity (metabolic equivalent in quintiles, h/wk).

**eTable 4. Association between caffeine intake and rosacea stratified by body mass index in the Nurses' Health Study II (1991–2005)**

	No. of Case	No. of Person-Years	Age-Adjusted		Multivariate-Adjusted <sup>a</sup>	
			HR	95% CI	HR	95% CI
<b>10&lt;BMI&lt;25</b>						
Quintile 1 (≤46)	456	116,985	<b>1.00</b>	<b>referent</b>	<b>1.00</b>	<b>referent</b>
Quintile 2 (47-133)	528	133,448	0.96	0.84, 1.08	0.91	0.80, 1.03
Quintile 3 (134-233)	506	122,820	0.99	0.87, 1.12	0.91	0.80, 1.04
Quintile 4 (234-410)	625	149,307	0.97	0.86, 1.09	0.86	0.76, 0.98
Quintile 5 (≥411)	350	112,116	0.79	0.69, 0.91	0.75	0.65, 0.87
<b>25≤BMI&lt;30</b>						
Quintile 1 (≤46)	213	40,967	<b>1.00</b>	<b>referent</b>	<b>1.00</b>	<b>referent</b>
Quintile 2 (47-133)	271	57,843	0.84	0.70, 1.01	0.81	0.68, 0.97
Quintile 3 (134-233)	255	50,823	0.90	0.75, 1.08	0.86	0.72, 1.04
Quintile 4 (234-410)	307	64,529	0.81	0.68, 0.97	0.76	0.63, 0.91
Quintile 5 (≥411)	214	53,186	0.76	0.63, 0.92	0.74	0.61, 0.91
<b>BMI≥30</b>						
Quintile 1 (≤46)	176	32,479	<b>1.00</b>	<b>referent</b>	<b>1.00</b>	<b>referent</b>
Quintile 2 (47-133)	310	49,139	1.09	0.91, 1.32	1.06	0.88, 1.28
Quintile 3 (134-233)	254	42,622	1.04	0.86, 1.26	1.00	0.82, 1.22
Quintile 4 (234-410)	284	46,102	1.02	0.85, 1.24	0.97	0.80, 1.18
Quintile 5 (≥411)	166	36,188	0.83	0.67, 1.03	0.82	0.66, 1.02
<b>P<sub>interaction</sub></b>			0.61			

Abbreviations: CI, confidence interval; HR, hazard ratio; BMI, body mass index.

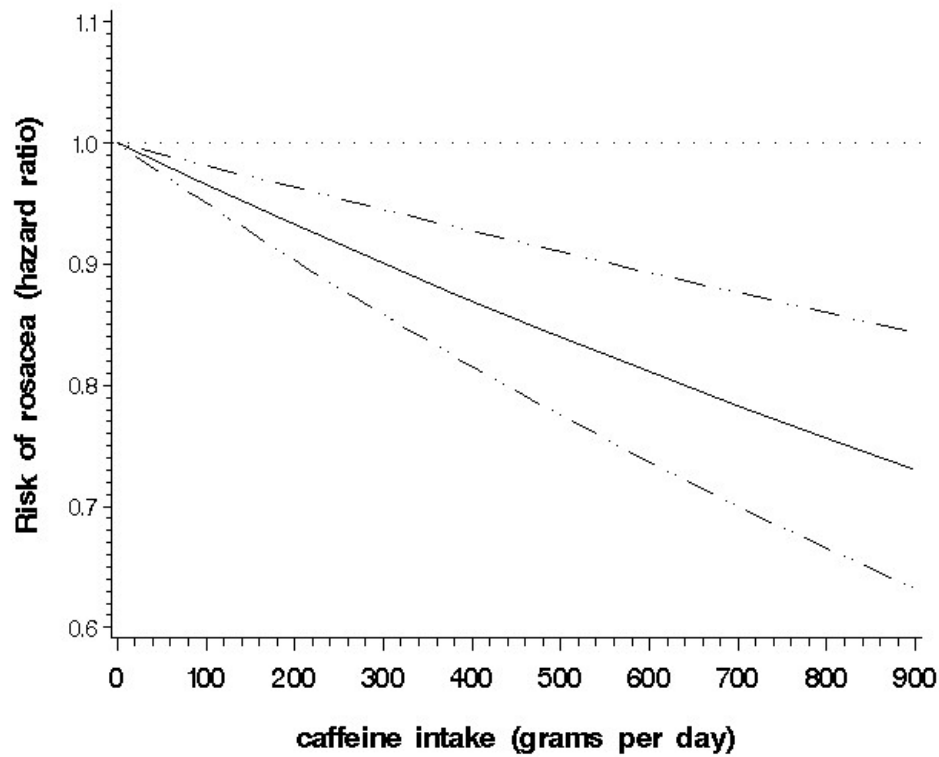
<sup>a</sup> Adjusted for age (continuous variable), race (non-Hispanic white, African-American, Asian, or other race), postmenopausal hormone use (premenopause, never, current or past users), alcohol drinking (none, <4.9, 5.0–9.9, 10–14.9, 15–29.9, or ≥30.0 g/day), smoking status (never smokers, past smokers 1-4, past smokers 5-14, past smokers 15-24, past smokers ≥25, current smokers 1-4, current smokers 5-14, current smokers 15-24, current smokers ≥25 cigarettes/day), and physical activity (metabolic equivalent in quintiles, h/wk).

**eTable 5. Association between caffeine intake and rosacea stratified by physical activity in the Nurses' Health Study II (1991–2005)**

	No. of Case	No. of Person-Years	Age-Adjusted		Multivariate-Adjusted <sup>a</sup>	
			HR	95% CI	HR	95% CI
<b>Physical activity Quintile 1</b>						
Quintile 1 ( $\leq 46$ )	154	34,300	<b>1.00</b>	<b>referent</b>	<b>1.00</b>	<b>referent</b>
Quintile 2 (47-133)	221	45,603	1.00	0.81, 1.23	0.97	0.79, 1.19
Quintile 3 (134-233)	194	40,558	1.00	0.81, 1.23	0.97	0.78, 1.20
Quintile 4 (234-410)	221	45,355	0.96	0.78, 1.19	0.94	0.76, 1.16
Quintile 5 ( $\geq 411$ )	173	43,083	0.87	0.70, 1.08	0.89	0.71, 1.12
<b>Physical activity Quintile 2</b>						
Quintile 1 ( $\leq 46$ )	186	36,654	<b>1.00</b>	<b>referent</b>	<b>1.00</b>	<b>referent</b>
Quintile 2 (47-133)	240	47,524	0.91	0.75, 1.10	0.87	0.72, 1.06
Quintile 3 (134-233)	221	42,139	0.95	0.78, 1.16	0.90	0.74, 1.10
Quintile 4 (234-410)	232	49,311	0.82	0.67, 0.99	0.76	0.62, 0.93
Quintile 5 ( $\geq 411$ )	116	39,949	0.57	0.45, 0.72	0.56	0.44, 0.72
<b>Physical activity Quintile 3</b>						
Quintile 1 ( $\leq 46$ )	182	38,170	<b>1.00</b>	<b>referent</b>	<b>1.00</b>	<b>referent</b>
Quintile 2 (47-133)	222	47,871	0.90	0.74, 1.09	0.85	0.70, 1.03
Quintile 3 (134-233)	202	42,660	0.93	0.76, 1.13	0.85	0.69, 1.04
Quintile 4 (234-410)	239	51,204	0.88	0.72, 1.06	0.77	0.63, 0.94
Quintile 5 ( $\geq 411$ )	143	38,314	0.78	0.63, 0.97	0.71	0.56, 0.89
<b>Physical activity Quintile 4</b>						
Quintile 1 ( $\leq 46$ )	168	38,631	<b>1.00</b>	<b>referent</b>	<b>1.00</b>	<b>referent</b>
Quintile 2 (47-133)	206	47,126	0.94	0.77, 1.15	0.88	0.71, 1.08
Quintile 3 (134-233)	195	42,257	0.99	0.81, 1.22	0.90	0.73, 1.10
Quintile 4 (234-410)	266	52,942	1.03	0.85, 1.25	0.89	0.73, 1.09
Quintile 5 ( $\geq 411$ )	151	36,380	0.93	0.75, 1.16	0.82	0.65, 1.03
<b>Physical activity Quintile 5</b>						
Quintile 1 ( $\leq 46$ )	130	37,801	<b>1.00</b>	<b>referent</b>	<b>1.00</b>	<b>referent</b>
Quintile 2 (47-133)	170	44,539	1.04	0.83, 1.31	1.01	0.80, 1.27
Quintile 3 (134-233)	169	41,596	1.08	0.86, 1.36	1.03	0.82, 1.30
Quintile 4 (234-410)	217	52,256	1.06	0.85, 1.32	0.99	0.79, 1.24
Quintile 5 ( $\geq 411$ )	119	36,859	0.91	0.71, 1.17	0.89	0.69, 1.15
$P_{\text{interaction}}$			0.33			

Abbreviations: CI, confidence interval; HR, hazard ratio; BMI, body mass index.

<sup>a</sup> Adjusted for age (continuous variable), race (non-Hispanic white, African-American, Asian, or other race), postmenopausal hormone use (premenopause, never, current or past users), alcohol drinking (none, <4.9, 5.0–9.9, 10–14.9, 15–29.9, or  $\geq 30.0$  g/day), smoking status (never smokers, past smokers 1-4, past smokers 5-14, past smokers 15-24, past smokers  $\geq 25$ , current smokers 1-4, current smokers 5-14, current smokers 15-24, current smokers  $\geq 25$  cigarettes/day), and body mass index (continuous variable).



**eFigure 1. Dose-response hazard ratio (with 95% CI) of incident rosacea by caffeine intake.**

Model was adjusted for age (continuous variable), race (non-Hispanic white, African-American, Asian, or other race), postmenopausal hormone use (premenopause, never, current or past users), alcohol drinking (none, <4.9, 5.0–9.9, 10–14.9, 15–29.9, or  $\geq 30.0$  g/day), smoking status (never smokers, past smokers 1-4, past smokers 5-14, past smokers 15-24, past smokers  $\geq 25$ , current smokers 1-4, current smokers 5-14, current smokers 15-24, current smokers  $\geq 25$  cigarettes/day), body mass index (continuous variable), and physical activity (metabolic equivalent hours/week in quintiles). Solid line represents point estimates and dashed lines represent 95% CI.