

Supplemental Table 1. Rate ratios (RR) and confidence intervals (CI) of IHD mortality by quintile of energy-adjusted flavonoid intake among men and women in the CPS II Nutrition cohort, 1999-2006.

Flavonoid		Men (n = 38,180)			Women (n = 60,289)			Men and Women (n = 98,469)¹		
Quintile	Median Intake (Range) (mg/d)	Deaths (n)	Age-adjusted RR	Multivariate-adjusted RR (CI)²	Deaths (n)	Age-adjusted RR	Multivariate-adjusted RR (CI)²	Deaths (n)	Age-adjusted RR³	Multivariate-adjusted RR (CI)²
Total Flavonoids										
1	94.5 (<121.5)	163	1.00 (-)	1.00 (-)	119	1.00 (-)	1.00 (-)	282	1.00 (-)	1.00 (-)
2	146.5 (121.4-172.3)	167	0.82 (0.66, 1.02)	0.92 (0.74, 1.15)	98	0.81 (0.62, 1.06)	0.87 (0.66, 1.14)	265	0.82 (0.69, 0.97)	0.90 (0.76, 1.07)
3	201.9 (172.4-238.0)	171	0.82 (0.66, 1.01)	0.96 (0.77, 1.19)	86	0.70 (0.53, 0.92)	0.77 (0.58, 1.02)	257	0.77 (0.65, 0.91)	0.88 (0.74, 1.05)
4	286.0 (238.1-359.6)	147	0.68 (0.54, 0.85)	0.82 (0.65, 1.03)	84	0.66 (0.50, 0.87)	0.73 (0.55, 0.97)	231	0.67 (0.56, 0.79)	0.78 (0.65, 0.93)
5	512.5 (≥359.7)	155	0.75 (0.61, 0.94)	0.90 (0.72, 1.13)	96	0.75 (0.58, 0.99)	0.84 (0.64, 1.10)	251	0.75 (0.63, 0.89)	0.87 (0.73, 1.03)
<i>p</i> -trend ⁴			0.03	0.4		0.1	0.3		0.005	0.1
Anthocyanidin										
1	3.8 (<5.5)	180	1.00 (-)	1.00 (-)	127	1.00 (-)	1.00 (-)	307	1.00 (-)	1.00 (-)
2	6.8 (5.5-8.1)	131	0.69 (0.55, 0.86)	0.78 (0.62, 0.97)	99	0.73 (0.56, 0.95)	0.79 (0.61, 1.03)	230	0.71 (0.59, 0.84)	0.79 (0.66, 0.94)
3	9.8 (8.2-11.4)	157	0.73 (0.59, 0.90)	0.85 (0.68, 1.05)	97	0.74 (0.57, 0.96)	0.83 (0.63, 1.08)	254	0.73 (0.61, 0.86)	0.83 (0.71, 0.99)
4	13.7 (11.5-16.6)	176	0.72 (0.59, 0.89)	0.90 (0.73, 1.11)	82	0.65 (0.49, 0.85)	0.75 (0.56, 0.99)	258	0.70 (0.59, 0.82)	0.84 (0.71, 0.99)
5	22.2 (≥16.7)	159	0.63 (0.51, 0.78)	0.81 (0.65, 1.00)	78	0.69 (0.52, 0.91)	0.81 (0.60, 1.07)	237	0.64 (0.54, 0.76)	0.79 (0.67, 0.94)
<i>p</i> -trend ⁴			0.0007	0.2		0.02	0.2		<0.0001	0.06
Flavan-3-ols										
1	7.0 (<9.5)	165	1.00 (-)	1.00 (-)	126	1.00 (-)	1.00 (-)	291	1.00 (-)	1.00 (-)
2	11.8 (9.5-14.0)	146	0.76 (0.61, 0.95)	0.84 (0.67, 1.06)	101	0.80 (0.62, 1.04)	0.88 (0.67, 1.14)	247	0.78 (0.66, 0.92)	0.86 (0.72, 1.02)
3	16.8 (14.1-20.3)	164	0.73 (0.59, 0.91)	0.87 (0.70, 1.09)	86	0.74 (0.56, 0.97)	0.82 (0.62, 1.09)	250	0.73 (0.62, 0.87)	0.85 (0.71, 1.00)
4	26.3 (20.4-37.1)	164	0.69 (0.56, 0.86)	0.85 (0.68, 1.07)	73	0.65 (0.49, 0.87)	0.73 (0.55, 0.98)	237	0.68 (0.57, 0.81)	0.81 (0.68, 0.97)
5	63.7 (≥37.2)	164	0.73 (0.59, 0.91)	0.87 (0.70, 1.09)	97	0.79 (0.61, 1.03)	0.88 (0.67, 1.15)	261	0.75 (0.64, 0.89)	0.87 (0.74, 1.04)
<i>p</i> -trend ⁴			0.1	0.6		0.3	0.6		0.06	0.5
Flavanones										
1	3.5 (<7.0)	156	1.00 (-)	1.00 (-)	123	1.00 (-)	1.00 (-)	279	1.00 (-)	1.00 (-)
2	10.4 (7.0-13.7)	134	0.86 (0.68, 1.08)	0.96 (0.76, 1.21)	78	0.62 (0.46, 0.82)	0.68 (0.51, 0.90)	212	0.75 (0.62, 0.89)	0.83 (0.69, 0.99)
3	17.4 (13.8-21.2)	157	0.86 (0.69, 1.07)	1.03 (0.82, 1.29)	95	0.73 (0.55, 0.95)	0.83 (0.63, 1.09)	252	0.80 (0.68, 0.95)	0.94 (0.79, 1.12)
4	27.3 (21.7-35.3)	171	0.87 (0.70, 1.08)	1.04 (0.84, 1.30)	88	0.66 (0.50, 0.86)	0.77 (0.58, 1.02)	259	0.78 (0.66, 0.92)	0.92 (0.78, 1.09)
5	49.9 (≥35.4)	185	0.81 (0.65, 1.00)	0.98 (0.79, 1.22)	99	0.70 (0.54, 0.92)	0.80 (0.61, 1.05)	284	0.76 (0.64, 0.89)	0.89 (0.76, 1.06)
<i>p</i> -trend ⁴			0.1	1.0		0.09	0.4		0.02	0.5
Flavones										
1	0.4 (<0.5)	193	1.00 (-)	1.00 (-)	130	1.00 (-)	1.00 (-)	323	1.00 (-)	1.00 (-)
2	0.7 (0.5-0.8)	171	0.98 (0.80, 1.20)	1.08 (0.88, 1.33)	104	0.81 (0.62, 1.04)	0.88 (0.68, 1.15)	275	0.90 (0.76, 1.05)	0.99 (0.84, 1.16)
3	1.1 (0.9-1.2)	156	0.85 (0.69, 1.05)	0.99 (0.80, 1.23)	96	0.75 (0.58, 0.98)	0.85 (0.65, 1.11)	252	0.80 (0.67, 0.94)	0.91 (0.77, 1.08)
4	1.6 (1.3-2.0)	147	0.79 (0.64, 0.99)	0.96 (0.77, 1.19)	95	0.74 (0.57, 0.97)	0.86 (0.66, 1.13)	242	0.77 (0.65, 0.91)	0.91 (0.77, 1.08)
5	3.0 (≥2.1)	136	0.71 (0.57, 0.88)	0.87 (0.70, 1.09)	58	0.51 (0.37, 0.69)	0.60 (0.44, 0.82)	194	0.62 (0.52, 0.74)	0.75 (0.62, 0.90)
<i>p</i> -trend ⁴			0.0006	0.1		<0.0001	0.002		<0.0001	0.0009

Supplemental Table 1 (continued). Rate ratios (RR) and confidence intervals (CI) of IHD mortality by quintile of energy-adjusted flavonoid intake among men and women in the CPS II Nutrition cohort, 1999-2006.

Flavonoid	Men (n = 38,180)			Women (n = 60,289)			Men and Women (n = 98,469) ¹				
	Quintile	Median Intake (Range) (mg/d)	Deaths (n)	Age-adjusted RR	Multivariate-adjusted RR (CI) ²	Deaths (n)	Age-adjusted RR	Multivariate-adjusted RR (CI) ²	Deaths (n)	Age-adjusted RR ³	Multivariate-adjusted RR (CI) ²
Flavonols											
1	6.9 (<8.5)	167	1.00 (-)	1.00 (-)	144	1.00 (-)	1.00 (-)	311	1.00 (-)	1.00 (-)	
2	9.9 (8.5-11.3)	173	0.87 (0.71, 1.08)	0.97 (0.78, 1.20)	82	0.59 (0.45, 0.78)	0.64 (0.49, 0.84)	255	0.75 (0.63, 0.88)	0.82 (0.69, 0.97)	
3	13.0 (11.4-14.7)	164	0.80 (0.64, 0.99)	0.93 (0.74, 1.15)	98	0.75 (0.58, 0.97)	0.82 (0.63, 1.06)	262	0.76 (0.65, 0.90)	0.86 (0.73, 1.02)	
4	17.2 (14.8-20.5)	144	0.71 (0.57, 0.89)	0.85 (0.67, 1.06)	73	0.54 (0.41, 0.72)	0.61 (0.46, 0.81)	217	0.63 (0.53, 0.76)	0.74 (0.62, 0.88)	
5	27.2 (≥20.6)	155	0.83 (0.67, 1.04)	0.98 (0.78, 1.22)	86	0.64 (0.49, 0.84)	0.72 (0.55, 0.94)	241	0.74 (0.63, 0.88)	0.85 (0.72, 1.01)	
<i>p</i> -trend ⁴			0.1	0.8		0.007	0.05		0.003	0.1	
Proanthocyanidins											
1	53.1 (<71.6)	151	1.00 (-)	1.00 (-)	117	1.00 (-)	1.00 (-)	268	1.00 (-)	1.00 (-)	
2	90.0 (71.6-109.2)	185	1.08 (0.87, 1.34)	1.20 (0.97, 1.49)	101	0.83 (0.64, 1.09)	0.88 (0.67, 1.15)	286	0.98 (0.83, 1.15)	1.07 (0.90, 1.26)	
3	132.0 (109.3-160.2)	171	0.95 (0.76, 1.18)	1.08 (0.87, 1.35)	80	0.65 (0.49, 0.87)	0.71 (0.53, 0.94)	251	0.82 (0.69, 0.98)	0.92 (0.77, 1.09)	
4	196.8 (160.3-253.5)	145	0.80 (0.64, 1.01)	0.94 (0.75, 1.19)	86	0.68 (0.51, 0.90)	0.74 (0.55, 0.97)	231	0.75 (0.63, 0.89)	0.85 (0.71, 1.01)	
5	379.4 (≥253.6)	151	0.89 (0.71, 1.11)	1.03 (0.82, 1.29)	99	0.77 (0.59, 1.01)	0.84 (0.64, 1.10)	250	0.83 (0.70, 0.99)	0.94 (0.79, 1.12)	
<i>p</i> -trend ⁴			0.08	0.5		0.2	0.4		0.02	0.2	
Isoflavones											
1	0.024 (<0.027)	128	1.00 (-)	1.00 (-)	111	1.00 (-)	1.00 (-)	239	1.00 (-)	1.00 (-)	
2	0.029 (0.027-0.031)	148	0.87 (0.69, 1.11)	0.90 (0.71, 1.15)	113	1.17 (0.90, 1.53)	1.20 (0.92, 1.56)	261	1.01 (0.85, 1.21)	1.04 (0.87, 1.25)	
3	0.036 (0.032-0.041)	192	0.91 (0.72, 1.14)	0.96 (0.76, 1.20)	117	1.31 (1.01, 1.71)	1.35 (1.04, 1.76)	309	1.08 (0.91, 1.28)	1.13 (0.95, 1.34)	
4	0.055 (0.042-0.141)	214	0.76 (0.61, 0.95)	0.79 (0.64, 0.99)	70	1.01 (0.75, 1.37)	1.02 (0.75, 1.37)	284	0.87 (0.73, 1.04)	0.90 (0.75, 1.07)	
5	0.713 (≥0.142)	121	0.64 (0.50, 0.83)	0.76 (0.59, 0.98)	72	0.92 (0.68, 1.24)	1.06 (0.78, 1.43)	193	0.76 (0.63, 0.92)	0.88 (0.73, 1.07)	
<i>p</i> -trend ⁴			0.002	0.09		0.1	0.6		0.0008	0.08	

¹No heterogeneity in RRs by sex, tested using Likelihood Ratio Tests of models with and without an interaction term of flavonoid/s (quintiles) and sex.

²Multivariate model adjusted for age, smoking, beer and liquor intake, history of hypertension, history of cholesterol, family history of myocardial infarction, BMI, physical activity, energy intake, aspirin use, hormone replacement therapy (in women only), and gender (in combined model only) using Cox Proportional Hazards regression.

³Age-adjusted models for men and women combined were additionally adjusted for sex.

⁴Test for trend using median value for each quintile and modeling as a continuous variable.

Supplemental Table 2. Rate ratios (RR) and confidence intervals (CI) of stroke mortality by quartile of energy-adjusted flavonoid intake among men and women in the CPS II Nutrition cohort, 1999-2006.

Flavonoid		Men (n = 38,180)			Women (n = 60,289)			Men and Women (n = 98,469)¹		
Quartile	Median Intake (Range) (mg/d)	Deaths (n)	Age-adjusted RR	Multivariate-adjusted RR (CI)²	Deaths (n)	Age-adjusted RR	Multivariate-adjusted RR (CI)²	Deaths (n)	Age-adjusted RR³	Multivariate-adjusted RR (CI)²
Total Flavonoids										
1	102.0 (<134.3)	79	1.00 (-)	1.00 (-)	85	1.00 (-)	1.00 (-)	164	1.00 (-)	1.00 (-)
2	165.7 (134.3-201.8)	63	0.65 (0.46, 0.90)	0.69 (0.49, 0.96)	54	0.65 (0.46, 0.91)	0.70 (0.50, 0.99)	117	0.65 (0.52, 0.83)	0.70 (0.55, 0.89)
3	248.8 (201.9-318.5)	82	0.80 (0.59, 1.09)	0.87 (0.63, 1.19)	69	0.79 (0.57, 1.08)	0.87 (0.63, 1.20)	151	0.80 (0.64, 1.00)	0.88 (0.70, 1.10)
4	458.5 (≥318.6)	57	0.59 (0.42, 0.83)	0.63 (0.44, 0.89)	84	0.91 (0.67, 1.24)	1.02 (0.75, 1.38)	141	0.75 (0.60, 0.94)	0.83 (0.66, 1.04)
	<i>p</i> -trend ⁴		0.02	0.04		0.8	0.4		0.2	0.5
Anthocyanidin										
1	4.3 (<6.2)	64	1.00 (-)	1.00 (-)	84	1.00 (-)	1.00 (-)	148	1.00 (-)	1.00 (-)
2	7.9 (6.2-9.7)	73	1.02 (0.73, 1.43)	1.10 (0.78, 1.55)	69	0.80 (0.58, 1.11)	0.88 (0.64, 1.21)	142	0.90 (0.71, 1.13)	0.97 (0.77, 1.22)
3	12.0 (9.8-14.9)	79	0.98 (0.70, 1.36)	1.08 (0.77, 1.51)	70	0.83 (0.60, 1.14)	0.94 (0.68, 1.30)	149	0.90 (0.71, 1.13)	1.01 (0.80, 1.28)
4	20.4 (≥15.0)	65	0.74 (0.52, 1.04)	0.84 (0.59, 1.20)	69	0.91 (0.66, 1.25)	1.05 (0.76, 1.46)	134	0.81 (0.64, 1.03)	0.95 (0.75, 1.20)
	<i>p</i> -trend ⁴		0.05	0.2		0.8	0.6		0.1	0.7
Flavan-3-ols										
1	7.7 (<10.6)	64	1.00 (-)	1.00 (-)	86	1.00 (-)	1.00 (-)	150	1.00 (-)	1.00 (-)
2	13.5 (10.6-16.7)	78	1.01 (0.72, 1.40)	1.11 (0.80, 1.55)	73	0.89 (0.65, 1.21)	0.97 (0.71, 1.33)	151	0.95 (0.75, 1.19)	1.04 (0.83, 1.30)
3	21.6 (16.8-30.7)	77	0.86 (0.62, 1.20)	0.99 (0.70, 1.39)	62	0.82 (0.59, 1.14)	0.91 (0.66, 1.27)	139	0.85 (0.67, 1.07)	0.96 (0.76, 1.22)
4	54.3 (≥30.8)	62	0.74 (0.52, 1.04)	0.84 (0.58, 1.20)	71	0.84 (0.61, 1.15)	0.94 (0.68, 1.29)	133	0.80 (0.63, 1.01)	0.90 (0.71, 1.14)
	<i>p</i> -trend ⁴		0.05	0.2		0.4	0.7		0.06	0.2
Flavanones										
1	4.4 (<8.7)	69	1.00 (-)	1.00 (-)	87	1.00 (-)	1.00 (-)	156	1.00 (-)	1.00 (-)
2	13.0 (8.7-17.3)	55	0.72 (0.50, 1.02)	0.77 (0.54, 1.11)	63	0.71 (0.51, 0.98)	0.77 (0.55, 1.06)	118	0.72 (0.56, 0.91)	0.78 (0.61, 0.99)
3	22.9 (17.4-30.9)	80	0.93 (0.67, 1.28)	1.03 (0.74, 1.42)	67	0.71 (0.52, 0.98)	0.81 (0.59, 1.12)	147	0.82 (0.65, 1.02)	0.92 (0.73, 1.16)
4	45.1 (≥31.0)	77	0.78 (0.56, 1.08)	0.86 (0.62, 1.20)	75	0.74 (0.54, 1.01)	0.83 (0.61, 1.14)	152	0.75 (0.60, 0.94)	0.84 (0.67, 1.06)
	<i>p</i> -trend ⁴		0.3	0.6		0.1	0.4		0.07	0.4
Flavones										
1	0.4 (<0.6)	100	1.00 (-)	1.00 (-)	76	1.00 (-)	1.00 (-)	176	1.00 (-)	1.00 (-)
2	0.8 (0.6-1.0)	53	0.57 (0.41, 0.79)	0.61 (0.44, 0.85)	88	1.13 (0.83, 1.54)	1.23 (0.90, 1.67)	141	0.82 (0.66, 1.02)	0.89 (0.71, 1.11)
3	1.4 (1.1-1.7)	67	0.68 (0.50, 0.93)	0.76 (0.56, 1.04)	65	0.89 (0.64, 1.25)	1.03 (0.74, 1.44)	132	0.76 (0.61, 0.95)	0.87 (0.69, 1.09)
4	2.7 (≥1.8)	61	0.61 (0.44, 0.84)	0.70 (0.50, 0.97)	63	0.94 (0.67, 1.31)	1.12 (0.79, 1.57)	124	0.74 (0.59, 0.93)	0.88 (0.69, 1.11)
	<i>p</i> -trend ⁴		0.02	0.1		0.4	0.8		0.02	0.3
Flavonols										
1	7.3 (<9.2)	87	1.00 (-)	1.00 (-)	84	1.00 (-)	1.00 (-)	171	1.00 (-)	1.00 (-)
2	11.0 (9.2-12.9)	67	0.65 (0.47, 0.89)	0.71 (0.51, 0.98)	62	0.79 (0.57, 1.10)	0.86 (0.62, 1.19)	129	0.73 (0.58, 0.92)	0.80 (0.63, 1.00)
3	15.3 (13.0-18.6)	62	0.60 (0.43, 0.83)	0.68 (0.49, 0.94)	68	0.87 (0.63, 1.19)	0.97 (0.70, 1.33)	130	0.73 (0.58, 0.92)	0.83 (0.66, 1.04)
4	25.0 (≥18.7)	65	0.67 (0.48, 0.92)	0.74 (0.53, 1.03)	78	0.99 (0.73, 1.35)	1.11 (0.82, 1.52)	143	0.83 (0.66, 1.03)	0.93 (0.74, 1.16)
	<i>p</i> -trend ⁴		0.05	0.2		0.7	0.3		0.3	0.9

Supplemental Table 2 (continued). Rate ratios (RR) and confidence intervals (CI) of stroke mortality by quartile of energy-adjusted flavonoid intake among men and women in the CPS II Nutrition cohort, 1999-2006.

Flavonoid		Men (n = 38,180)			Women (n = 60,289)			Men and Women (n = 98,469)¹		
Quartile	Median Intake (Range) (mg/d)	Deaths (n)	Age-adjusted RR	Multivariate-adjusted RR (CI)²	Deaths (n)	Age-adjusted RR	Multivariate-adjusted RR (CI)²	Deaths (n)	Age-adjusted RR³	Multivariate-adjusted RR (CI)²
Proanthocyanidins										
1	57.9 (<80.9)	80	1.00 (-)	1.00 (-)	82	1.00 (-)	1.00 (-)	162	1.00 (-)	1.00 (-)
2	104.3 (80.9-131.9)	60	0.63 (0.45, 0.88)	0.66 (0.47, 0.92)	59	0.74 (0.53, 1.04)	0.80 (0.57, 1.12)	119	0.69 (0.54, 0.87)	0.73 (0.57, 0.92)
3	168.3 (132.0-221.8)	80	0.83 (0.61, 1.14)	0.87 (0.64, 1.20)	66	0.78 (0.56, 1.08)	0.84 (0.61, 1.18)	146	0.81 (0.65, 1.02)	0.87 (0.69, 1.09)
4	334.2 (≥221.9)	61	0.68 (0.49, 0.95)	0.70 (0.50, 0.99)	85	0.95 (0.70, 1.28)	1.04 (0.76, 1.41)	146	0.82 (0.65, 1.02)	0.88 (0.70, 1.10)
<i>p</i> -trend ⁴			0.1	0.2		0.7	0.4		0.5	0.8
Isoflavones										
1	0.025 (<0.028)	57	1.00 (-)	1.00 (-)	82	1.00 (-)	1.00 (-)	139	1.00 (-)	1.00 (-)
2	0.031 (0.028-0.035)	69	0.89 (0.62, 1.27)	0.93 (0.65, 1.32)	70	0.91 (0.66, 1.26)	0.94 (0.68, 1.31)	139	0.93 (0.73, 1.18)	0.97 (0.77, 1.23)
3	0.045 (0.036-0.068)	90	0.86 (0.62, 1.20)	0.90 (0.64, 1.26)	78	1.26 (0.92, 1.73)	1.31 (0.96, 1.80)	168	1.06 (0.84, 1.33)	1.10 (0.88, 1.39)
4	0.567 (≥0.069)	65	0.69 (0.48, 0.98)	0.75 (0.53, 1.08)	62	1.13 (0.81, 1.58)	1.29 (0.92, 1.81)	127	0.90 (0.70, 1.14)	1.00 (0.78, 1.28)
<i>p</i> -trend ⁴			0.05	0.1		0.5	0.2		0.3	0.8

¹No heterogeneity in RRs by sex, tested using Likelihood Ratio Tests of models with and without an interaction term of flavonoid/s (quintiles) and sex.

²Multivariate model adjusted for age, smoking, beer and liquor intake, history of hypertension, history of cholesterol, family history of myocardial infarction, BMI, physical activity, energy intake, aspirin use, hormone replacement therapy (in women only), and gender (in combined model only) using Cox Proportional Hazards regression.

³Age-adjusted models for men and women combined were additionally adjusted for sex.

⁴Test for trend using median value for each quintile and modeling as a continuous variable.