Electronic Supplementary Material (ESI) for Food & Function.

Supplementary Table 1. Limit of quantifications and inter-/intra-batch coefficient of variance in LC-MS analysis of (poly)phenol metabolites

Compound name	Recommended name	LOQ (nM)	inter-batch precision (CV%)	urine intra-batch (CV%)	plasma intra-batch (CV%)
Flavonoids					
Flavanols					
(-)-Epicatechin	(-)-Epicatechin	8.3	35.1	16.6	15.4
(-)-Epicatechin-3′-sulfate	(-)-Epicatechin-3′-sulfate	8.1	39.9	13.0	43.6
Flavanones					
Naringenin-4′-glucuronide	Naringenin-4′-glucuronide	8.2	36.8	14.8	14.7
rac-Hesperetin-3′-glucuronide	rac-Hesperetin-3′-glucuronide	8.4	42.0	10.8	17.0
rac-Hesperetin-7-sulfate	rac-Hesperetin-7-sulfate	8.3	26.8	15.9	13.0
Hesperetin	Hesperetin	8.3	19.8	16.6	14.3
Flavones					
Flavone	Flavone	8.3	30.7	16.5	13.0
Flavonols					
Quercetin	Quercetin	1.6	35.1	16.1	15.2
Quercetin-3-sulfate	Quercetin-3-sulfate	8.4	15.6	24.6	36.6
Quercetin-3-glucuronide	Quercetin-3-glucuronide	1.7	57.4	20.5	20.1
Quercetin-7-glucuronide	Quercetin-7-glucuronide	8.4	34.5	21.2	15.0
Kaempferol-3-glucuronide	Kaempferol-3-glucuronide	1.8	13.4	10.9	8.9
Dihydrochalcones					
Phloretin	Phloretin	16.6	15.3	15.5	18.8
Isoflavonoids					
Equol-7-glucuronide	Equol-7-glucuronide	8.3	42.5	8.1	26.9
Daidzein	Daidzein	7.9	14.4	12.2	20.6
Lignans					
Secoisolariciresinol	Secoisolariciresinol	8.3	84.7	36.8	19.4
Enterodiol	Enterodiol	8.3	14.6	12.3	15.0
Enterolactone	Enterolactone	8.3	12.9	15.6	17.3
Enterolactone-glucuronide	Enterolactone-glucuronide	8.3	53.9	9.5	18.8
Enterolactone-sulfate	Enterolactone-sulfate	8.3	7.5	15.8	16.2
Other (poly)phenols					
Benzene diols and triols					
4-Methylcatechol	1,2-Dihydroxy-4-methylbenzene	8.4	10.1	14.4	34.2
4-Methylcatechol-1/2-sulfate	2-Hydroxy-4/5-methylbenzene-1-sulfate	83.5	20.1	9.9	8.3
Catechol-O-1-glucuronide	2-Hydroxybenzene-1-glucuronide	8.5	36.6	12.2	16.0
Pyrogallol-1/2-sulfate	2,3/2,6-Dihydroxybenzene-1-sulfate	1.6	11.0	6.6	9.5
1-Methylpyrogallol-2/3-sulfate	2-Hydroxy-6/3-methoxybenzene-1-sulfate	16.7	9.6	7.7	10.6
2-Methylpyrogallol-1-sulfate	3-Hydroxy-2-methoxybenzene-1-sulfate	8.2	12.8	11.8	20.9

Compound name	Recommended name	LOQ (nM)	inter-batch precision (CV%)	urine intra-batch (CV%)	plasma intra-batch (CV%)
Benzaldehydes					
3,4-Dihydroxybenzaldehyde	3,4-Dihydroxybenzaldehyde	7.8	35.6	10.6	12.0
4-Hydroxybenzaldehyde	4-Hydroxybenzaldehyde	8.0	30.9	9.7	12.6
Vanillin	4-Hydroxy-3-methoxybenzaldehyde	15.7	34.8	15.5	19.5
Hydroxycoumarins					
7,8-Dihydroxycoumarin	7,8-Dihydroxycoumarin	8.4	21.2	18.3	38.4
Urolithin B	3-Hydroxy-urolithin	8.6	11.0	8.4	15.2
Tyrosols (C6–C2)					
Tyrosol	2-(4′-hydroxyphenyl) ethanol	7.3	57.4	20.2	17.9
Tyrosol sulfate	Phenylethanol-4′-sulfate	8.0	26.8	26.4	25.5
Hydroxytyrosol	3′,4′-Dihydroxyphenylethanol	8.2	37.2	17.8	30.7
Hydroxytyrosol-4′-sulfate	3′-Hydroxyphenylethanol-4′-sulfate	8.3	15.3	18.8	16.4
Hydroxytyrosol-3′-sulfate	4′-Hydroxyphenylethanol-3′-sulfate	8.5	9.8	9.2	24.6
Phenolic acids					
Benzoic acids (C6–C1)					
Benzoic acid	Benzoic acid	83.9	33.5	8.7	17.6
2-Hydroxybenzoic acid	2-Hydroxybenzoic acid	8.3	36.8	12.5	7.7
3-Hydroxybenzoic acid	3-Hydroxybenzoic acid	16.7	35.7	18.7	16.1
4-Hydroxybenzoic acid	4-Hydroxybenzoic acid	8.3	39.4	6.8	10.4
2,3-Dihydroxybenzoic acid	2,3-Dihydroxybenzoic acid	83.3	21.2	10.8	6.0
2,4/2,6-Dihydroxybenzoic acid	2,4/2,6-Dihydroxybenzoic acid	16.9	22.1	12.7	25.7
2,5-Dihydroxybenzoic acid	2,5-Dihydroxybenzoic acid	16.7	39.8	10.5	15.0
2,6-Dihydroxybenzoic acid	2,6-Dihydroxybenzoic acid	9.3	20.4	11.2	8.2
Protocatechuic acid	3,4-Dihydroxybenzoic acid	8.3	26.0	15.4	29.6
3,5-Dihydroxybenzoic acid	3,5-Dihydroxybenzoic acid	17.0	46.2	7.5	14.4
2,3,4-Trihydroxybenzoic acid	2,3,4-Trihydroxybenzoic acid	8.1	13.9	27.8	26.0
2-Hydroxy-4-methoxybenzoic acid	2-Hydroxy-4-methoxybenzoic acid	8.3	31.5	8.0	7.3
Protocatechuic acid-4-sulfate	3-Hydroxybenzoic acid-4-sulfate	8.3	2.8	16.5	13.1
Protocatechuic acid-3-sulfate	4-Hydroxybenzoic acid-3-sulfate	8.3	15.8	8.0	9.6
Protocatechuic acid-3-glucuronide	4-Hydroxybenzoic acid-3-glucuronide	8.3	35.5	14.2	11.0
Syringic acid	4-Hydroxy-3,5-dimethoxybenzoic acid	1.7	49.4	27.7	31.7
Ethyl-gallate	3,4,5-Trihydroxybenzene ethyl ester	2.1	21.5	8.4	14.8
Gallic acid	3,4,5-Trihydroxybenzoic acid	2.2	17.9	20.3	22.9
4-Methylgallic acid-3-sulfate	3-Hydroxy-4-methoxybenzoic acid-5-sulfate	8.2	31.6	13.2	16.2
Vanillic acid	4-Hydroxy-3-	8.3	66.8	29.5	41.6

Compound name	Recommended name	LOQ (nM)	inter-batch precision (CV%)	urine intra-batch (CV%)	plasma intra-batch (CV%)
	methoxybenzoic acid				
Vanillic acid-4-sulfate	3-Methoxybenzoic acid-4-sulfate	8.3	20.4	9.4	26.9
Isovanillic acid-3-sulfate	4-Methoxybenzoic acid-3-sulfate	8.4	35.2	9.8	14.5
Ellagic acid	Ellagic acid	8.4	22.9	51.4	46.9
Hippuric acids					
Hippuric acid	Hippuric acid	166.2	18.8	6.2	13.5
2′-Hydroxyhippuric acid	2′-Hydroxyhippuric acid	1.7	24.5	25.2	12.7
3′-Hydroxyhippuric acid	3′-Hydroxyhippuric acid	8.7	46.3	10.7	13.8
4′-Hydroxyhippuric acid	4′-Hydroxyhippuric acid	7.9	33.8	9.9	20.7
α-hydroxyhippuric acid	α-hydroxyhippuric acid	41.9	45.0	9.7	12.4
Cinnamic acids					
Cinnamic acid	Cinnamic acid	16.5	35.8	11.3	7.5
Caffeic acid	3′,4′-Dihydroxycinnamic acid	1.8	26.5	10.6	18.6
Caffeic acid-4′-sulfate	3′-Hydroxycinnamic acid-4′-sulfate	8.3	11.9	9.5	12.0
Caffeic acid-3′-sulfate	4′-Hydroxycinnamic acid-3′-sulfate	8.3	24.1	8.0	10.0
Caffeic acid-4′-glucuronide	3′-Hydroxycinnamic acid-4′-glucuronide	1.6	11.8	11.6	17.4
Caffeic acid-3′-glucuronide	4′-Hydroxycinnamic acid-3′-glucuronide	1.6	33.8	13.0	13.7
trans-Ferulic acid	4′-Hydroxy-3′-methoxycinnamic acid	16.7	18.0	20.9	13.2
Ferulic acid-4′-sulfate	3′-Methoxycinnamic acid-4′-sulfate	16.7	22.5	11.1	10.7
Ferulic acid-4′-glucuronide	3′-Methoxycinnamic acid-4′-glucuronide	8.6	43.6	13.1	15.9
Isoferulic acid	3′-Hydroxy-4′-methoxycinnamic acid	83.3	23.3	12.5	3.9
Isoferulic acid-3′-sulfate	4′-Methoxycinnamic acid-3′-sulfate	8.1	23.5	13.6	16.8
Isoferulic acid-3′-glucuronide	4′-Methoxycinnamic acid-3′-glucuronide	8.6	41.0	19.2	33.6
Cryptochlorogenic acid	4-O-Caffeoylquinic acid	1.4	49.7	22.0	21.4
Chlorogenic acid	5-O-Caffeoylquinic acid	1.7	21.0	16.4	8.5
3-O-Feruloylquinic acid	3-O-Feruloylquinic acid	1.7	50.8	12.0	31.3
4-O-Feruloylquinic acid	4-O-Feruloylquinic acid	1.6	51.6	6.5	15.2
Sinapic acid	4′-Hydroxy-3′,5′-dimethoxycinnamic acid	1.7	35.3	7.7	6.6
m-Coumaric acid	3′-Hydroxycinnamic acid	1.5	36.6	18.2	24.2
p-Coumaric acid	4′-Hydroxycinnamic acid	1.7	28.5	7.1	8.3
o-Coumaric acid	2′-Hydroxycinnamic acid	1.2	41.7	20.4	30.0
p-Coumaric acid-4′-sulfate	Cinnamic acid-4′-sulfate	8.5	4.7	6.9	8.9
p-Coumaric acid-4′-glucuronide	Cinnamic acid-4′-glucuronide	8.3	35.0	11.8	9.4
Phenylacetic acids					
Phenylacetic acid	Phenylacetic acid	166.1	39.3	21.1	35.0
Homoprotocatechuic acid	3′,4′-Dihidroxyphenylacetic	16.6	33.6	14.8	18.9

Compound name	Recommended name	LOQ (nM)	inter-batch precision (CV%)	urine intra-batch (CV%)	plasma intra-batch (CV%)
	acid				
Homovanillic acid-sulfate	3′-Methyoxyphenylacetic acid-4′-sulfate	1.6	81.5	18.0	14.5
Phenylpropanoic acids					
2-(4′-Hydroxyphenoxy) propanoic acid	2-(4′-Hydroxyphenoxy) propanoic acid	16.6	23.4	5.8	11.4
3-(2′-Hydroxyphenyl) propanoic acid	3-(2′-Hydroxyphenyl) propanoic acid	8.0	39.7	7.4	8.0
3-(3′-Hydroxyphenyl) propanoic acid	3-(3′-Hydroxyphenyl) propanoic acid	8.5	20.7	15.9	30.0
3-(2′,3′-Dihydroxyphenyl) propanoic acid	3-(2′,3′-Dihydroxyphenyl) propanoic acid	7.5	23.9	9.1	16.3
3-(2′,4′-Dihydroxyphenyl) propanoic acid	3-(2′,4′-Dihydroxyphenyl) propanoic acid	9.4	27.0	10.5	12.5
Dihydrocaffeic acid	3-(3′,4′-Dihydroxyphenyl) propanoic acid	8.3	46.5	9.7	10.0
3-(3′,5′-Dihydroxyphenyl) propanoic acid	3-(3′,5′-Dihydroxyphenyl) propanoic acid	9.7	17.4	7.4	11.0
2-Hydroxy-3-(4′-hydroxyphenyl)propanoic acid	2-Hydroxy-3-(4′-hydroxyphenyl)propanoic acid	9.4	39.8	8.3	10.9
Dihydrocaffeic acid-3′-glucuronide	3-(4′-Hydroxyphenyl) propanoic acid-3′-glucuronide	16.7	34.8	15.7	12.2
Dihydrocaffeic acid-3′-sulfate	3-(4′-Hydroxyphenyl) propanoic acid-3′-sulfate	8.4	67.8	12.1	17.3
Dihydroferulic acid-4′-glucuronide	3-(3′-Methoxyphenyl) propanoic acid-4′-glucuronide	1.8	31.3	14.5	15.3
Dihydroferulic acid-4′-sulfate	3-(3′-Methoxyphenyl) propanoic acid-4′-sulfate	1.6	43.8	11.7	38.7
Dihydroisoferulic acid-3′-glucuronide	3-(4′-Methoxyphenyl) propanoic acid-3′-glucuronide	1.6	43.6	7.3	6.7
Dihydroisoferulic acid-3′-sulfate	3-(4′-Methoxyphenyl) propanoic acid-3′-sulfate	1.6	32.8	12.7	24.1
Phenyl-γ-valerolactones					
(4R)-5-(3′-hydroxyphenyl)-γ-valerolactone-4′-sulfate	(4R)-5-(3′,4′-dihydroxyphenyl)-γ-valerolactone-4′-sulfate	8.3	14.8	8.2	8.6
Stilbenes					
Dihydroresveratrol	Dihydroresveratrol	8.4	32.9	10.9	9.8
trans-Resveratrol 4′-glucuronide	trans-Resveratrol 4′-glucuronide	8.3	22.1	12.8	37.5
trans-Resveratrol 3-glucuronide	trans-Resveratrol 3-glucuronide	8.3	52.5	16.2	30.2
cis-Resveratrol 4′-glucuronide	cis-Resveratrol 4′-glucuronide	8.3	17.8	18.2	28.4
trans-Resveratrol 3-Sulfate	trans-Resveratrol 3-Sulfate	8.4	23.5	5.4	13.4
Internal standard					
Taxifolin	Taxifolin	-	-	-	-

Supplementary Table 2. Nutrients and food groups intake of the study population estimated from FFQ and 7-day food diaries (n=413)

Nutrients and food groups	FFQ			7DD		
	Total	Men	Women	Total	Men	Women
Energy (kcal/d)	1746 (785)	1742 (614)	1749 (899)	2031 (923) a	2339 (1213) a	1789 (482) b
Protein (g/d)	81 (38)	81 (30)	81 (44)	89 (39) a	103 (50) a	188 (55)
Total carbohydrates (g/d)	199 (92)	201 (72)	198 (105)	214 (109) a	247 (146) a	75 (28)
Sugars (g/d)	95 (48)	95 (44)	95 (51)	84 (53) a	93 (72) b	78 (28) a
Total fat (g/d)	71 (40)	70 (33)	72 (44)	85 (45) a	96 (58) a	75 (28) b
MUFA (g/d)	27 (17)	27 (13)	28 (19)	32 (17) a	36 (22) a	28 (11)
PUFA (g/d)	13 (9)	12 (6)	14 (10)	15 (14) b	17 (19) a	13 (8)
SFA (g/d)	25 (14)	25 (13)	24 (14)	28 (14) a	32 (16) a	25 (10) b
Cholesterol (g/d)	286 (181)	304 (189)	272 (174)	272 (163)	325 (201)	230 (108) b
Fibre (g/d) *	17 (11)	16 (7)	19 (12)	17 (9)	18 (12) b	16 (7) b
Vitamin A (µg/d) **	1136 (866)	1010 (561)	1235 (1036)	1190 (2569) b	1350 (3711)	1064 (972) b
Retinol (µg/d)	463 (486)	447 (384)	476 (554)	392 (771) a	394 (677) b	391 (839) b
Alpha carotene (µg/d)	470 (524)	419 (405)	510 (600)	609 (1242)	616 (1579)	604 (896)
Beta carotene (µg/d)	3601 (3618)	2978 (1904)	4092 (4477)	3167 (3017) b	2978 (3339)	3316 (2736) b
Vitamin D (µg/d)	3 (3)	3 (3)	3 (2)	4 (6)	4 (3)	4 (7)
Vitamin E (µg/d)	12 (7)	11 (5)	13 (8)	12 (11)	12 (13)	11 (8) a
Vitamin B1 (mg/d)	1 (1)	1 (1)	2 (1)	2 (6) a	2 (6) a	2 (6)
Vitamin B2 (mg/d)	2 (1)	2 (1)	2 (1)	3 (22)	4 (21) b	3 (23) a
Niacin (mg/d)	22 (11)	22 (9)	22 (12)	41 (18) a	48 (22) a	35 (11) a
Vitamin B6 (mg/d)	2 (1)	2 (1)	2 (1)	3 (13) a	4 (19)	2 (5) a
Folate (µg/d)	290 (172)	266 (105)	308 (209)	286 (118)	306 (139) a	270 (95) b
Vitamin B12 (µg/d)	6 (4)	7 (5)	6 (4)	6 (15) a	8 (20)	6 (9) a
Vitamin C (mg/d)	115 (99)	99 (58)	128 (121)	119 (211)	116 (249)	121 (176) b
Sodium (mg/d)	2413 (1113)	2402 (1105)	2422 (1122)	3072 (9292) b	4489 (13859) b	1955 (824) a
Potassium (mg/d)	3389 (1512)	3244 (1136)	3502 (1746)	3334 (2015)	3688 (2804) b	3055 (954) b
Calcium (mg/d)	853 (421)	829 (329)	872 (481)	913 (522) b	1036 (689) a	815 (304)
Magnesium (mg/d)	320 (147)	301 (103)	335 (173)	379 (307) a	416 (397) a	350 (206)
Phosphorus (mg/d)	1360 (571)	1341 (445)	1375 (655)	1422 (690) b	1614 (901) a	1271 (402)
Iron (mg/d)	11 (5)	11 (4)	12 (6)	18 (83) a	27 (124) a	12 (6)
Copper (mg/d)	1 (1)	1 (0)	1 (1)	2 (2) a	2 (2) a	2 (2) a
Zinc (mg/d)	9 (4)	9 (3)	9 (5)	44 (364) a	42 (408) a	46 (326)
Chloride (mg/d)	3608 (1634)	3582 (1592)	3629 (1670)	4542 (14124) b	6698 (21069) b	2843 (1187) a
Manganese (mg/d)	4 (2)	3 (1)	4 (2)	7 (18) a	9 (24) a	5 (10) a
Selenium (µg/d)	64 (33)	63 (28)	64 (37)	69 (193) b	66 (36)	72 (256) a
Iodine (µg/d)	138 (65)	137 (62)	138 (68)	167 (475)	144 (83)	186 (631)
Fruits (g/d)	268 (248)	228 (197)	298 (278)	164 (139) a	137 (134) a	184 (139) a
Vegetables (g/d) ***	299 (301)	246 (141)	341 (377)	160 (105) a	138 (102) a	178 (104) a
Potatoes (g/d)	52 (43)	58 (42)	47 (44)	108 (91) a	118 (115) a	100 (67) a

*: Englyst fibre, non-starch polysaccharides (NSP), **: Retinol equivalents, ***: Vegetables not including potatoes and other tubers. MUFA: monounsaturated fatty acids, PUFA: polyunsaturated fatty acids, SFA: saturated fatty acids. a: $p<0.001$, b: $0.05<p\leq0.001$.

Supplementary Table 3. Agreements between energy adjusted (poly)phenol intakes estimated from FFQ and 7-day food diaries

(Poly)phenols*	ICC-A	(95% CI)	ICC-C	(95% CI)	Kappa	(95% CI)	Same quartile (%)	Opposite quartile (%)	Spearman's Rho
Total (poly)phenols	0.59	(0.52, 0.65)	0.59	(0.52, 0.65)	0.44	(0.38, 0.50)	76.03	2.89	0.64 [a]
Total Flavonoids	0.53	(0.46, 0.60)	0.53	(0.46, 0.60)	0.41	(0.35, 0.47)	73.55	4.13	0.58 [a]
Anthocyanins	0.04	(-0.06, 0.13)	0.04	(-0.06, 0.13)	0.20	(0.13, 0.27)	60.33	13.64	0.28 [a]
Chalcones	0.07	(-0.03, 0.16)	0.07	(-0.03, 0.16)	0.13	(0.06, 0.20)	52.89	16.53	0.19 [a]
Dihydroflavonols	0.07	(-0.03, 0.16)	0.07	(-0.03, 0.16)	0.41	(0.35, 0.47)	73.14	5.79	0.58 [a]
Dihydrochalcones	0.37	(0.28, 0.45)	0.37	(0.28, 0.45)	0.31	(0.24, 0.38)	65.70	7.85	0.45 [a]
Total flavan-3-ols	0.56	(0.49, 0.62)	0.56	(0.49, 0.62)	0.41	(0.35, 0.47)	73.14	4.96	0.61 [a]
Flavan-3-ol monomers	0.59	(0.53, 0.65)	0.59	(0.53, 0.65)	0.45	(0.39, 0.51)	78.51	5.37	0.61 [a]
Theaflavins	0.47	(0.39, 0.54)	0.47	(0.39, 0.54)	0.28	(0.21, 0.34)	57.85	4.96	0.43 [a]
Thearubigins	0.47	(0.39, 0.54)	0.47	(0.39, 0.54)	0.36	(0.29, 0.42)	65.70	1.65	0.53 [a]
Proanthocyanidins	0.30	(0.20, 0.38)	0.29	(0.20, 0.38)	0.27	(0.20, 0.34)	59.92	8.68	0.41 [a]
Flavanones	0.25	(0.16, 0.34)	0.25	(0.16, 0.34)	0.29	(0.22, 0.35)	61.57	6.20	0.40 [a]
Flavones	0.00	(-0.09, 0.10)	0.00	(-0.09, 0.10)	0.09	(0.02, 0.16)	46.69	16.53	0.16 [b]
Flavonols	0.14	(0.04, 0.23)	0.14	(0.04, 0.23)	0.14	(0.07, 0.21)	47.93	14.05	0.21 [a]
Isoflavonoids	0.23	(0.13, 0.32)	0.23	(0.13, 0.32)	0.20	(0.13, 0.27)	61.98	14.88	0.28 [a]
Total Phenolic acids	0.61	(0.54, 0.67)	0.61	(0.54, 0.67)	0.49	(0.43, 0.55)	86.36	3.31	0.65 [a]
Hydroxybenzoic acids	0.47	(0.40, 0.55)	0.47	(0.39, 0.54)	0.39	(0.33, 0.46)	72.31	4.13	0.59 [a]
Ellagitannins	0.09	(0.00, 0.19)	0.09	(0.00, 0.19)	0.05	(-0.02, 0.12)	45.04	16.53	0.11 [c]
Hydroxycinnamic acids	0.61	(0.54, 0.66)	0.60	(0.54, 0.66)	0.49	(0.43, 0.55)	86.36	2.89	0.65 [a]
Hydroxyphenylacetic acids	0.00	(-0.10, 0.10)	0.00	(-0.09, 0.10)	0.17	(0.10, 0.24)	54.96	14.46	0.21 [a]
Hydroxyphenylpropanoic acids§	0.00	(-0.10, 0.10)	-	-	-	-	-	-	-
Total Stilbenes	0.10	(0.00, 0.19)	0.10	(0.00, 0.19)	0.42	(0.35, 0.48)	76.45	5.37	0.57 [a]
Total Lignans	0.00	(-0.10, 0.10)	0.00	(-0.10, 0.10)	0.11	(0.04, 0.18)	50.83	15.70	0.17 [a]
Other (poly)phenols	0.06	(-0.03, 0.16)	0.06	(-0.03, 0.16)	0.24	(0.17, 0.31)	59.50	10.33	0.37 [a]
Tyrosols	0.01	(-0.09, 0.11)	0.01	(-0.09, 0.11)	0.21	(0.14, 0.28)	57.85	13.22	0.28 [a]
Alkylmethoxyphenols	0.61	(0.54, 0.66)	0.61	(0.54, 0.66)	0.48	(0.42, 0.54)	84.71	3.72	0.62 [a]
Alkylphenols	0.23	(0.14, 0.32)	0.23	(0.14, 0.32)	0.31	(0.24, 0.38)	70.66	8.26	0.41 [a]

ICC-C: Intraclass correlation coefficient-Consistency model: when systematic difference between FFQ and 7-day food record estimated (poly)phenol intakes were not relevant. ICC-A: Intraclass correlation coefficient-Agreement model: when systematic difference between FFQ and 7-day food record estimated (poly)phenol intakes were relevant. Kappa: Weighted kappa coefficient (linear weights). 95% CI: 95% confidence interval. *: (Poly)phenol intakes were all adjusted for energy intake by residual method. a: $p<0.001$, b: $p=0.001$, c: $p=0.028$. §: There was no reported value from FFQ for hydroxyphenylpropanoic acids, so only agreement on the absolute estimated values was assessed.

Supplementary Table 4. Comparisons of (poly)phenol intake classes and subclasses estimated from FFQ and 7-day food records (mg/d) in participants with plausible reported energy intakes (n=242)

(Poly)phenols	FFQ			7DD		
	Mean (SD)	Median (IQR)	%	Mean (SD)	Median (IQR)	%
Total (poly)phenols	1638.7 (1026.8)	1648.7 (1419.6)	100.0	1388.2 (914.2)	1223.3 (1276.5) a	100.0
Total Flavonoids	740.4 (573.8)	513.7 (695.7)	45.2	593.2 (560.7)	446.5 (475.4) a	42.7
Anthocyanins	8.8 (8.7)	6.8 (7.3)	0.5	34.0 (59.5)	19.8 (34.0) a	2.4
Chalcones	0.0 (0.0)	0.0 (0.0)	0.0	0.0 (0.0)	0.0 (0.0) a	0.0
Dihydroflavonols	0.1 (0.1)	0.0 (0.1)	0.0	0.9 (1.7)	0.0 (1.0) a	0.1
Dihydrochalcones	3.0 (4.1)	2.2 (3.2)	0.2	1.9 (2.4)	1.0 (3.0) a	0.1
Total flavan-3-ols	626.0 (543.3)	396.8 (696.6)	38.2	479.3 (543.3)	337.4 (436.7) a	34.5
Flavan-3-ol monomers	167.2 (160.3)	104.4 (228.7)	10.2	158.7 (202.1)	74.3 (218.6)	11.4
Theaflavins	37.9 (39.6)	23.6 (55.8)	2.3	17.6 (40.7)	0.0 (14.0) a	1.3
Thearubigins	247.5 (258.5)	154.5 (364.5)	15.1	115.8 (265.8)	4.8 (91.8) a	8.3
Proanthocyanidins	173.5 (156.0)	135.5 (108.1)	10.6	187.3 (163.6)	149.9 (144.1)	13.5
Flavanones	34.2 (43.2)	23.6 (36.6)	2.1	14.9 (27.4)	4.2 (13.1) a	1.1
Flavones	4.5 (2.9)	3.8 (2.8)	0.3	11.6 (22.0)	7.2 (7.6) a	0.8
Flavonols	55.7 (39.2)	46.9 (34.2)	3.4	48.7 (31.6)	41.2 (39.3)	3.5
Isoflavonoids	8.2 (20.3)	1.4 (5.0)	0.5	3.3 (10.5)	0.3 (1.8) a	0.2
Total Phenolic acids	829.1 (726.0)	635.7 (1169.7)	50.6	700.5 (648.0)	560.4 (780.7) a	50.5
Hydroxybenzoic acids	69.0 (57.8)	46.8 (74.0)	4.2	57.0 (58.8)	42.9 (56.0) a	4.1
Ellagitannins	3.9 (6.0)	1.5 (3.8)	0.2	3.0 (7.6)	0.0 (0.9) a	0.2
Hydroxycinnamic acids	760.1 (720.5)	578.0 (1192.9)	46.4	641.4 (644.2)	499.0 (764.7) b	46.2
Hydroxyphenylacetic acids	0.0 (0.1)	0.0 (0.0)	0.0	1.0 (2.7)	0.1 (0.6) a	0.1
Hydroxyphenylpropanoic acids	0.0 (0.0)	0.0 (0.0)	0.0	0.1 (0.4)	0.0 (0.1) a	0.0
Total Stilbenes	0.1 (0.2)	0.1 (0.1)	0.0	0.8 (1.3)	0.1 (1.0) a	0.1
Total Lignans	44.4 (30.5)	37.8 (34.4)	2.7	43.7 (38.6)	35.6 (46.6)	3.1
Other (poly)phenols	24.6 (31.5)	16.7 (17.2)	1.5	51.0 (90.2)	30.4 (36.1) a	3.7
Tyrosols	0.7 (0.9)	0.4 (1.0)	0.0	6.4 (10.1)	3.3 (6.9) a	0.5
Alkylmethoxyphenols	2.6 (2.5)	1.8 (4.1)	0.2	2.2 (2.4)	1.7 (3.0) a	0.2
Alkylphenols	18.3 (31.0)	9.9 (12.5)	1.1	23.3 (35.4)	11.8 (20.8)	1.7

7DD: 7-day food diary, BMI: body mass index, FFQ: food frequency questionnaire, IQR: inter-quartile range, SD: standard deviation. %: percentage of contribution to the total (poly)phenol intake. Significant values were from paired-sample Wilcoxon signed-rank test. a: $p<0.001$, b: $p=0.002$.

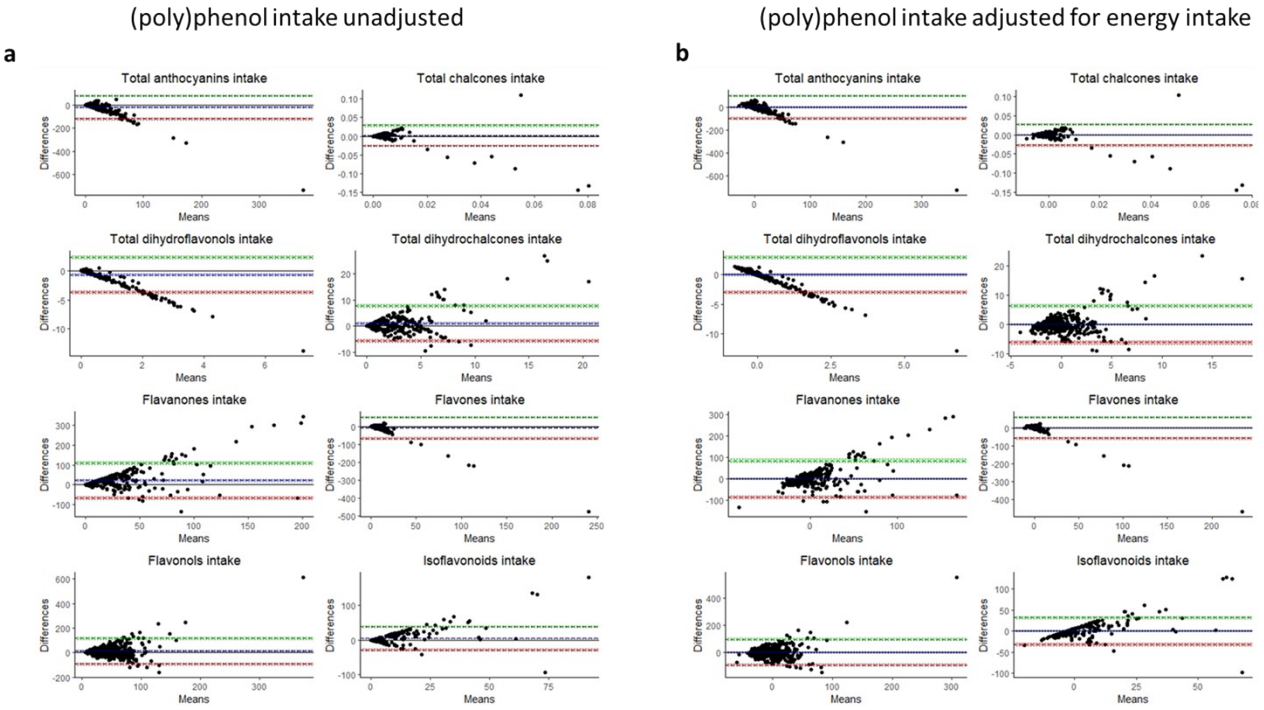
Supplementary Table 5. Agreements between (poly)phenol intake estimated from FFQ and 7-day food diaries in participants with plausible reported energy intakes (n=242)

(Poly)phenols	ICC-A	(95% CI)	ICC-C	(95% CI)	Kappa	(95% CI)	Same quartile (%)	Opposite quartile (%)	Spearman's Rho
Total (poly)phenols	0.55	(0.44, 0.64)	0.56	(0.47, 0.64)	0.48	(0.41, 0.56)	48.35	2.07	0.63 a
Total Flavonoids	0.49	(0.38, 0.58)	0.50	(0.40, 0.59)	0.39	(0.31, 0.48)	42.98	2.89	0.54 a
Anthocyanins	0.02	(-0.08, 0.13)	0.03	(-0.10, 0.15)	0.19	(0.10, 0.29)	35.12	6.61	0.26 a
Chalcones	0.13	(0.00, 0.25)	0.13	(0.00, 0.25)	0.11	(0.01, 0.20)	30.17	9.50	0.23 a
Dihydroflavonols	0.06	(-0.05, 0.16)	0.07	(-0.06, 0.19)	0.51	(0.43, 0.59)	52.89	2.48	0.67 a
Dihydrochalcones	0.31	(0.18, 0.42)	0.32	(0.20, 0.43)	0.30	(0.21, 0.39)	39.67	4.96	0.44 a
Total flavan-3-ols	0.52	(0.41, 0.61)	0.54	(0.44, 0.62)	0.41	(0.33, 0.49)	42.15	2.07	0.57 a
Flavan-3-ol monomers	0.56	(0.46, 0.64)	0.56	(0.46, 0.64)	0.40	(0.32, 0.49)	43.80	2.89	0.57 a
Theaflavins	0.40	(0.22, 0.54)	0.45	(0.34, 0.55)	0.20	(0.11, 0.29)	31.82	3.72	0.39 a
Thearubigins	0.40	(0.23, 0.54)	0.45	(0.35, 0.55)	0.23	(0.15, 0.32)	29.75	2.89	0.49 a
Proanthocyanidins	0.31	(0.19, 0.42)	0.31	(0.19, 0.42)	0.32	(0.23, 0.41)	40.08	4.96	0.44 a
Flavanones	0.26	(0.12, 0.39)	0.30	(0.18, 0.41)	0.29	(0.21, 0.38)	35.12	2.48	0.47 a
Flavones	-0.01	(-0.12, 0.11)	-0.01	(-0.13, 0.12)	0.03	(-0.06, 0.12)	26.45	11.98	0.07
Flavonols	0.17	(0.05, 0.29)	0.18	(0.05, 0.30)	0.16	(0.07, 0.25)	30.17	5.37	0.29 a
Isoflavonoids	0.16	(0.03, 0.27)	0.16	(0.04, 0.28)	0.19	(0.10, 0.28)	34.30	7.44	0.27 a
Total Phenolic acids	0.60	(0.50, 0.67)	0.60	(0.52, 0.68)	0.44	(0.36, 0.52)	43.39	2.89	0.64 a
Hydroxybenzoic acids	0.47	(0.37, 0.57)	0.48	(0.38, 0.57)	0.39	(0.31, 0.47)	41.74	2.89	0.56 a
Ellagitannins	0.20	(0.08, 0.32)	0.20	(0.08, 0.32)	0.16	(0.07, 0.25)	31.82	7.02	0.32 a
Hydroxycinnamic acids	0.59	(0.50, 0.67)	0.60	(0.52, 0.68)	0.46	(0.38, 0.54)	47.93	2.48	0.63 a
Hydroxyphenylacetic acids	0.00	(-0.11, 0.12)	0.01	(-0.12, 0.13)	0.19	(0.11, 0.28)	30.17	7.85	0.31 a
Hydroxyphenylpropanoic acids*	0.00	(-0.11, 0.11)	-	-	-	-	-	-	-
Total Stilbenes	0.08	(-0.03, 0.19)	0.10	(-0.03, 0.22)	0.42	(0.34, 0.51)	44.63	2.48	0.60 a
Total Lignans	0.00	(-0.11, 0.11)	0.00	(-0.13, 0.12)	0.09	(0.00, 0.19)	30.99	11.57	0.12
Other (poly)phenols	0.07	(-0.04, 0.19)	0.08	(-0.05, 0.20)	0.29	(0.20, 0.37)	37.60	4.13	0.39 a
Tyrosols	0.01	(-0.09, 0.10)	0.01	(-0.12, 0.13)	0.17	(0.08, 0.26)	29.75	8.26	0.27 a
Alkylmethoxyphenols	0.60	(0.51, 0.68)	0.60	(0.52, 0.68)	0.45	(0.37, 0.53)	47.11	3.31	0.61 a
Alkylphenols	0.26	(0.14, 0.37)	0.26	(0.14, 0.37)	0.32	(0.23, 0.41)	39.26	3.31	0.46 a

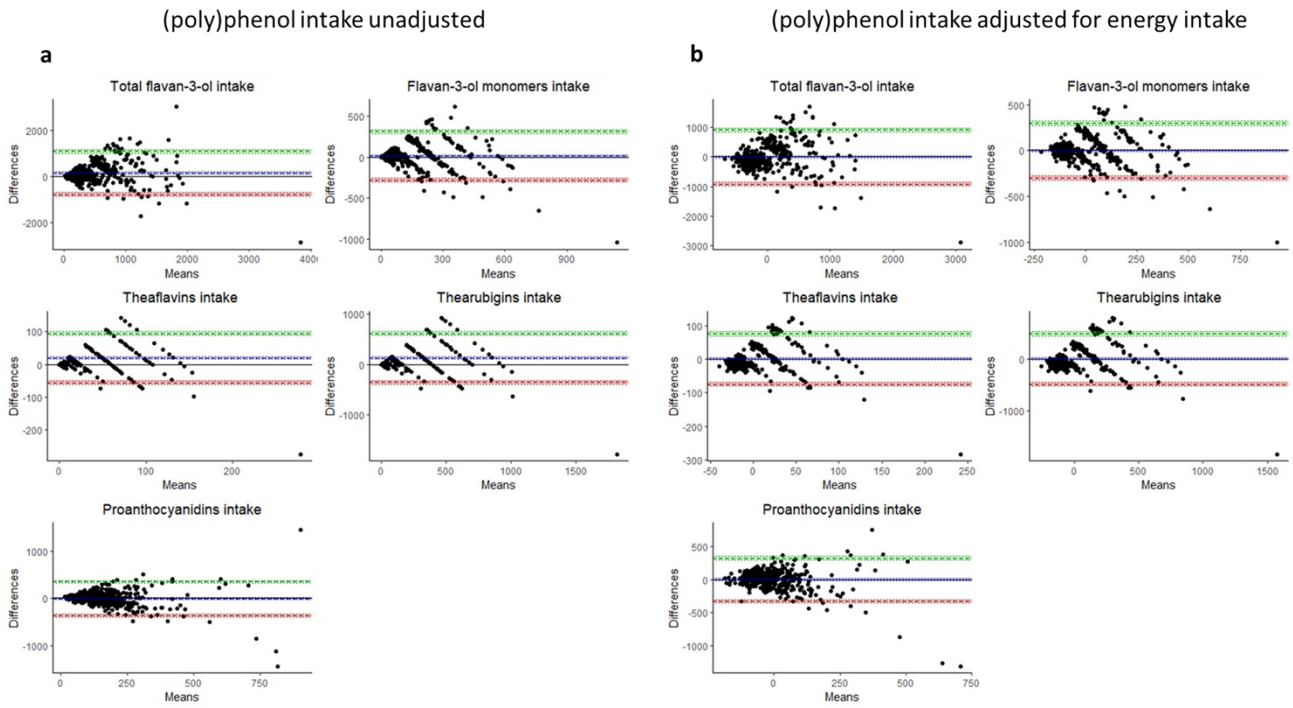
ICC-C: Intraclass correlation coefficient-Consistency model: when systematic difference between FFQ and 7-day food record estimated (poly)phenol intakes were not relevant. ICC-A: Intraclass correlation coefficient-Agreement model: when systematic difference between FFQ and 7-day food record estimated (poly)phenol intakes were relevant. Kappa: Weighted kappa coefficient (linear weights). 95% CI: 95% confidence interval. a: $p<0.001$. *: There was no reported value from FFQ for hydroxyphenylpropanoic acids, so only agreement on the absolute estimated values was assessed.

Supplementary Table 6. Agreements between total (poly)phenol intake and total phenolic metabolite levels in urine and plasma in participants with plausible reported energy intakes (n=111 and 103, respectively)

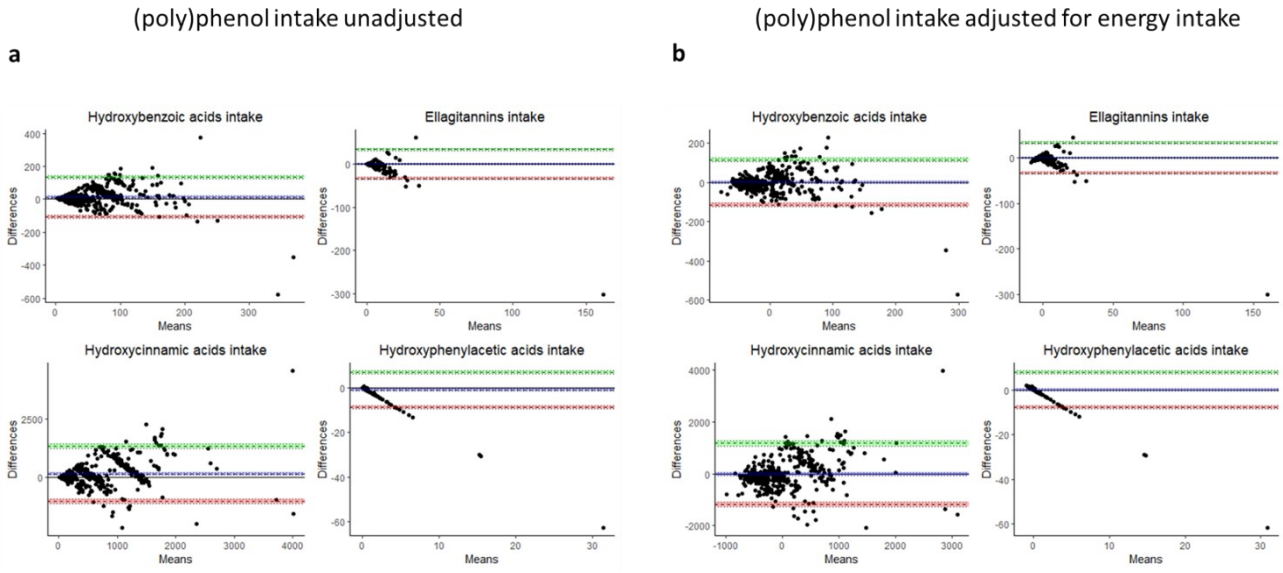
metabolite levels	questionnaires	groups	Kappa	(95% CI)	same quartile (%)	opposite quartile (%)
Urine (n=111)	FFQ	total (poly)phenols	0.05	(-0.09, 0.18)	23.64	5.45
		total flavonoids	0.12	(-0.03, 0.26)	24.32	3.60
		flavonols	0.18	(0.05, 0.31)	31.53	6.31
		flavanones	0.12	(-0.01, 0.25)	27.93	8.11
		isoflavonoids	0.00	(-0.13, 0.13)	21.62	9.01
		total lignans	0.12	(-0.02, 0.25)	29.73	8.11
		total stilbenes	0.10	(-0.03, 0.24)	27.93	7.21
		tyrosols	0.03	(-0.09, 0.16)	21.62	7.21
	7DD	total (poly)phenols	0.00	(-0.13, 0.13)	26.06	3.64
		total flavonoids	0.02	(-0.12, 0.15)	24.32	8.11
		flavonols	-0.10	(-0.23, 0.03)	20.72	14.41
		flavanones	0.15	(0.01, 0.29)	34.23	9.01
		isoflavonoids	0.07	(-0.06, 0.21)	26.13	10.81
		total lignans	0.00	(-0.13, 0.13)	23.42	11.71
		total stilbenes	0.00	(-0.13, 0.14)	21.62	9.01
		tyrosols	0.03	(-0.10, 0.16)	23.42	12.61
Plasma (n=103)	FFQ	total (poly)phenols	0.17	(0.03, 0.32)	30.00	10.67
		total flavonoids	0.02	(-0.12, 0.16)	36.89	9.71
		flavonols	0.00	(-0.13, 0.14)	23.30	12.62
		flavanones	-0.01	(-0.15, 0.12)	23.30	10.68
		isoflavonoids	0.00	(-0.14, 0.15)	25.24	11.65
		total lignans	0.03	(-0.10, 0.17)	25.24	10.68
		total stilbenes	0.00	(-0.13, 0.14)	25.24	10.68
		tyrosols	-0.04	(-0.19, 0.10)	29.13	14.56
	7DD	total (poly)phenols	0.11	(-0.03, 0.25)	30.67	9.33
		total flavonoids	0.05	(-0.09, 0.19)	28.16	10.68
		flavonols	-0.14	(-0.27, -0.01)	21.36	17.48
		flavanones	-0.03	(-0.17, 0.11)	23.30	9.71
		isoflavonoids	0.11	(-0.03, 0.26)	32.04	8.74
		total lignans	0.06	(-0.08, 0.21)	33.98	11.65
		total stilbenes	0.00	(-0.14, 0.15)	27.18	12.62
		tyrosols	-0.01	(-0.16, 0.13)	29.13	17.48



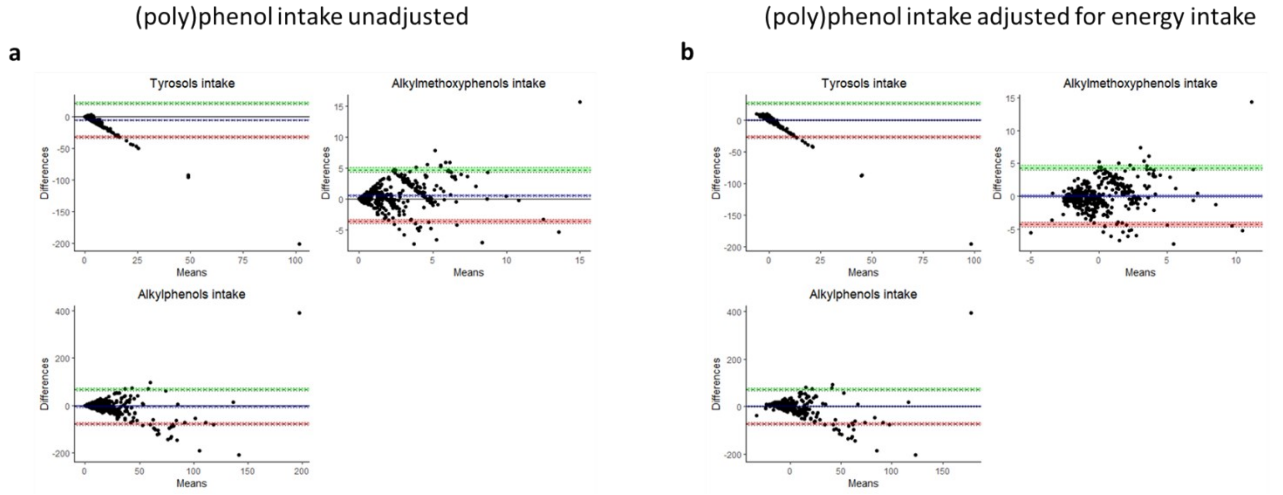
Supplementary figure 1. Bland-Altman plots on estimated flavonoids subclass intake by FFQ and 7-day food diary



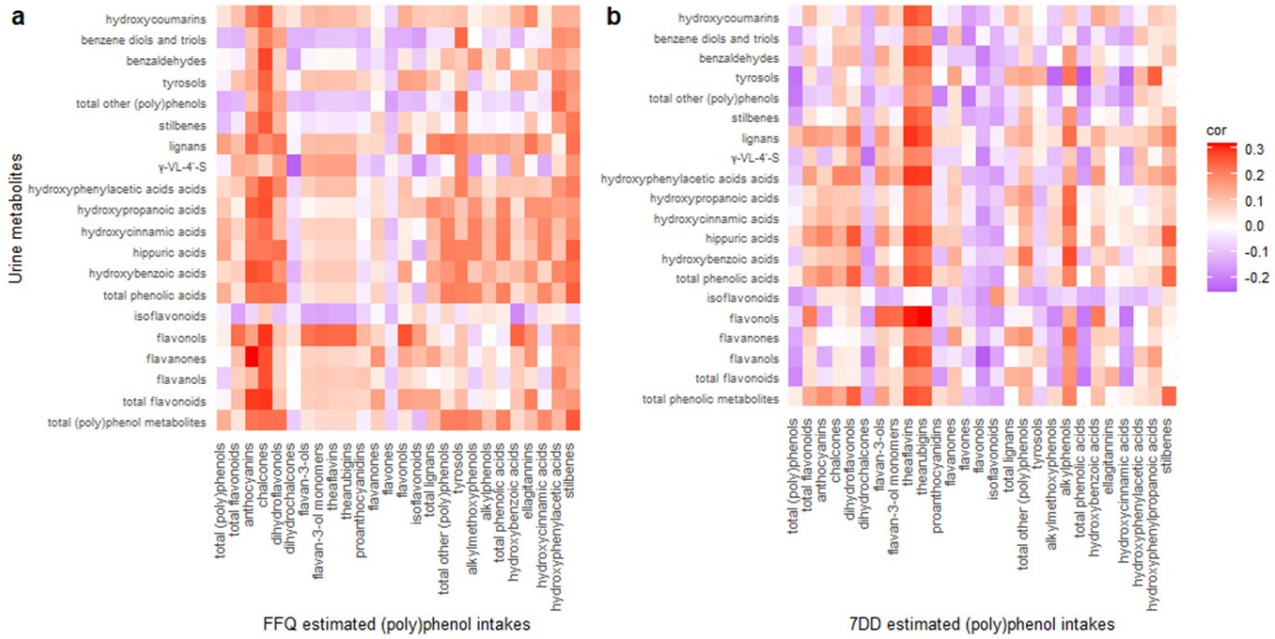
Supplementary figure 2. Bland-Altman plots on estimated flavan-3-ols intake by FFQ and 7-day food diary



Supplementary figure 3. Bland-Altman plots on estimated phenolic acids intake by FFQ and 7-day food diary

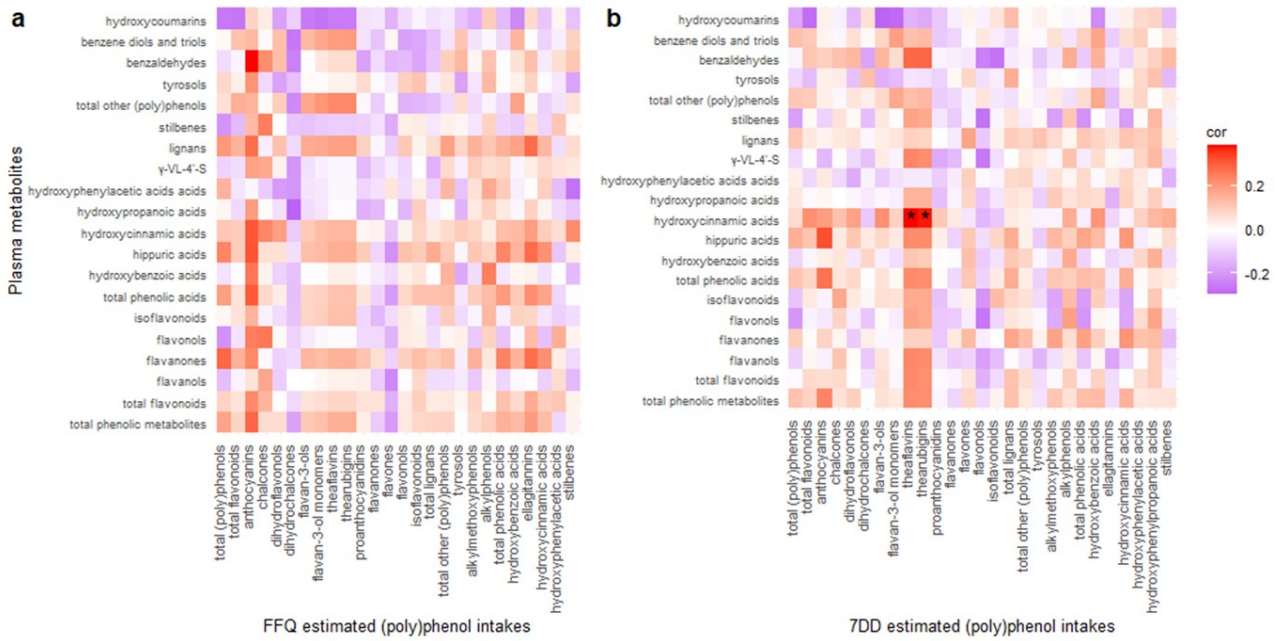


Supplementary figure 4. Bland-Altman plots on estimated other (poly)phenols intake by FFQ and 7-day food diary



Supplementary figure 5. Correlation heatmap between total urinary phenolic metabolites and estimated (poly)phenol intakes from FFQ and 7DD (figure a, figure b) adjusted for energy intake in participants with plausible reported energy intake

Available urine n=111. FFQ: food frequency questionnaire; 7DD: 7-day food diary; γ-VL-4′s: (4R)-5-(3′,4′-dihydroxyphenyl)-γ-valerolactone-4′-sulfate.



Supplementary figure 6. Correlation heatmap between total plasma phenolic metabolites and estimated (poly)phenol intakes from FFQ and 7DD (figure a, figure b) adjusted for energy intake in participants with plausible reported energy intake

Available plasma n=103. FFQ: food frequency questionnaire; 7DD: 7-day food diary; γ-VL-4′s: (4R)-5-(3′,4′-dihydroxyphenyl)-γ-valerolactone-4′-sulfate.