

Supplementary table 1 Coffee type and caffeinated status for each coffee item identified by USDA food code in dietary recall, NHANES 1999-2010

USDA food code	USDA food descriptions	Caffeinated status ^a
92101000	Coffee, made from ground, regular (Include coffee, made from ground, NS as to regular or decaffeinated; made from filter pack; and Coffee Singles)	U
92103000	Coffee, made from powdered instant, regular (Include coffee, made from powdered instant, NS as to regular or decaffeinated; and made from freeze-dried)	U
92111010	Coffee, decaffeinated, made from ground (Include made from filter pack; and Coffee Singles)	D
92114000	Coffee, decaffeinated, made from powdered instant (Include made from freeze-dried)	D
92100500	Coffee, regular, NS as to ground or instant	R
92101500	Coffee, made from ground, equal parts regular and decaffeinated (Include Maxwell House Lite Reduced Caffeine Ground Coffee)	R
92101900	Coffee, latte (Include NS as to regular or decaffeinated)	U
92161000	Cappuccino	U
92111000	Coffee, decaffeinated, NS as to ground or instant	D
92121000	Coffee, made from powdered instant mix, with whitener and sugar, instant (Include Cafe au Lait; Orange Cappuccino; Cafe Amaretto; Cafe Francais; General Foods International Coffee flavors; Italian Cappuccino; Cafe Vienna; and French Vanilla Cafe)	R
92101950	Coffee, mocha (Include Cafe mocha)	R
92101610	Coffee, espresso (Include demi-tasse)	R
92101920	Blended coffee beverage, made with regular coffee, milk, and ice, sweetened (Include NS as to regular or decaffeinated)	U
92130000	Coffee, regular, presweetened with sugar, pre-lightened (Include coffee, light, with sugar, from vending machine; iced coffee, NS as to regular or decaffeinated, NS as to type of sweetener; and McDonald's iced coffee)	U
92191100	Coffee, dry instant powder, regular (Include freeze-dried)	R
92191200	Coffee, dry instant powder, decaffeinated (Include freeze-dried)	D
92101800	Coffee, Cuban (Include sweetened espresso)	R
92121040	Coffee, made from powdered instant mix, with whitener and low calorie sweetener (Include Sugar Free Cafe au Lait; Sugar Free Cafe Amaretto; General Foods International Coffee flavors; Sugar Free Cafe Vienna; and Sugar Free French Vanilla Cafe)	R
92100000	Coffee, NS as to type	U
92121020	Coffee and cocoa (mocha), made from powdered instant mix, with whitener, presweetened (Include NS as to sweetener; Suisse Mocha; General Foods International Coffee flavors; Viennese Chocolate Cafe; and Cafe Mocha Cappuccino)	R
92101910	Coffee, latte, decaffeinated	D
92121010	Coffee, made from powdered instant mix, presweetened, no whitener	R
92101700	Coffee, made from ground, regular, flavored (Include made from filter pack)	R
92162000	Cappuccino, decaffeinated	D
92104000	Coffee, made from powdered instant, 50% less caffeine (Include Maxwell House Lite Reduced Caffeine Instant Coffee)	R
92101630	Coffee, espresso, decaffeinated	D

	Coffee and cocoa (mocha), made from powdered instant mix, with whitener and low calorie sweetener, decaffeinated (Include Naturally Decaffeinated Sugar Free Suisse Mocha; and General Foods International Coffee flavors)	D
92121050	International Coffee flavors)	D
92105010	Coffee, made from liquid concentrate	R
92101930	Blended coffee beverage, made with decaffeinated coffee, milk, and ice, sweetened Coffee and cocoa (mocha), made from powdered instant mix, with whitener and low calorie sweetener (Include Sugar Free Irish Mocha Mint; Sugar Free Suisse Mocha; and General Foods International Coffee flavors)	D
92121030	International Coffee flavors)	R
	Coffee, decaffeinated, presweetened with sugar, pre-lightened (Include coffee, decaffeinated, light, with sugar, from vending machine; and iced coffee, decaffeinated, with sugar)	D
92130001	Coffee, pre-lightened, no sugar (Include from vending machine)	R
92130010	Coffee, presweetened with sugar (Include from vending machine)	R
92130020	Coffee, dry instant powder, NS as to regular or decaffeinated (Include freeze-dried)	U
92191000	Coffee, dry instant powder, with whitener and sugar (Include Cafe au Lait; Orange Cappuccino; Cafe Amaretto; Cafe Francais; General Foods International Coffee flavors; Cafe Vienna; and French Vanilla Cafe)	R
92193000	Foods International Coffee flavors; Cafe Vienna; and French Vanilla Cafe)	R
92101600	Coffee, Turkish Coffee, acid neutralized, from powdered instant (Include Kava)	R
92106000	Coffee, mocha, made with soy milk Coffee, regular, with low-calorie sweetener, pre-lightened (Include coffee, light, low calorie sweetener, from vending machine; and iced coffee, with low calorie sweetener)	R
92130005	Coffee, decaffeinated, with low-calorie sweetener, pre-lightened (Include coffee, decaffeinated, light, with low calorie sweetener, from vending machine; and iced coffee, decaffeinated, with low calorie sweetener)	D
92130006	Coffee, dry, acid neutralized (Include Kava)	R
92191250	Coffee, liquid concentrate	R
92105000	Coffee and chicory, made from ground	R
92152000	Coffee and cocoa (mocha) mix, dry instant powder with whitener, presweetened (Include Irish Mocha Mint; Suisse Mocha; and General Foods International Coffee flavors)	R
92192000	Coffee and cocoa (mocha) mix, dry instant powder, with whitener and low calorie sweetener, decaffeinated (Include Naturally Decaffeinated Sugar Free Suisse Mocha; and General Foods International Coffee flavors)	D
92192040	Coffee, dry instant powder, with whitener and low calorie sweetener (Include Sugar Free Cafe au Lait; Sugar Free Orange Cappuccino; Sugar Free Cafe Amaretto; General Foods International Coffee flavors; Sugar Free Cafe Vienna; and Sugar Free French Vanilla)	R
92193020	Sugar Free French Vanilla	R

^a Caffeinated status: D=decaf, R=regular, U=unspecified

Supplementary table 2 Multivariate ^a adjusted serum levels of ALT, AST, ALP and GGT, by categories of coffee reported in FFQ, NHANES (2003-2006)

	coffee, cup/day					p trend
	0	<1	1-<2	2-<3	3+	
	Total coffee					
ALT	22.5 (22.0, 23.1)	22.1 (22.1, 23.9)	22.4 (22.2, 24.4)	22.5 (22.3, 24.5)	21.4 (20.9, 23.7)	0.76
AST	23.7 (23.3, 24.1)	23.4 (23.1, 24.9)	23.5 (23.3, 25.0)	23.2 (23.0, 24.6)	22.3 (21.9, 23.8)	0.09
ALP	65.8 (64.6, 67.0)	63.7 (63.7, 67.2)	62.1 (61.6, 66.0)	61.5 (60.8, 65.6)	60.1 (59.2, 64.3)	0.0002
GGT	20.3 (19.4, 21.2)	19.7 (18.8, 20.7)	19.7 (18.7, 20.7)	19.8 (18.8, 20.9)	18.2 (17.1, 19.4)	0.04
	Decaf coffee ^b					
ALT	22.5 (22.0, 23.1)	22.5 (21.4, 23.6)	23.3 (21.8, 24.8)	23.6 (22.0, 25.3)	17.1 (15.5, 18.9)	0.84
AST	23.7 (23.3, 24.1)	23.5 (22.4, 24.6)	24.2 (23.0, 25.4)	24 (22.6, 25.4)	19.8 (18.6, 21.1)	0.76
ALP	65.8 (64.6, 67.0)	62.9 (60.6, 69.0)	59.9 (57.0, 66.5)	61.2 (59.3, 66.6)	52.5 (47.0, 61.9)	0.0003
GGT	20.3 (19.4, 21.2)	18.3 (16.6, 20.1)	19.1 (17.1, 21.4)	19.4 (17.6, 21.4)	15.4 (13.1, 18.0)	0.04

^a Adjusted for age (20-34, 35-49, 50-64, 65-85 yr), gender (male, female), race and ethnicity (Mexican American, other Hispanic, non-Hispanic White, non-Hispanic Black, other), education (less than 9th grade, 9-11th grade, high school/GED, some college or AA degree, college and higher), smoking status (Never, former, current smoker with <1 pck/d, current smoker with 1+ pck/d, missing), alcohol consumption (non-drinker, <1, 1-<3, 3-<7 drink/week, 1-<2, 2+ drink/day, missing), day of recall (Monday, Tuesday, Wednesday, Thursday, Friday, Saturday and Sunday), hepatitis B (positive serum hepatitis B surface antigen and core antibody, negative) and hepatitis C (positive serum hepatitis C antibody, negative).

^b This analysis included people who reported that they did not drink coffee (the “0” group) and those who reported “almost always or always” to the question “how often was the coffee you drank decaffeinated?”

	Nondrinker	22.8 (22.5, 23.1)	23.4 (22.8, 23.9)	22.9 (22.3, 23.5)	23.1 (22.4, 23.8)	22.9 (22.3, 23.5)	0.63	
	<2 drinks/day	23.5 (23.3, 23.8)	23.8 (23.4, 24.2)	23.1 (22.8, 23.5)	23.3 (22.9, 23.7)	22.8 (22.4, 23.3)	0.0004	
	2+ drinks/day	29.0 (27.7, 30.4)	27.0 (24.8, 29.3)	26.8 (24.6, 29.1)	26.5 (24.5, 28.7)	26.3 (24.1, 28.8)	0.02	
<i>ALP</i>								0.70
	Nondrinker	70.8 (69.8, 71.9)	68.1 (66.3, 70.0)	68.4 (66.8, 70)	67.3 (65.4, 69.3)	68.5 (66.2, 70.8)	0.0004	
	<2 drinks/day	65.4 (64.5, 66.3)	62.1 (60.8, 63.5)	63.1 (62.0, 64.3)	63.0 (61.4, 64.7)	61.5 (60.1, 63.1)	<.0001	
	2+ drinks/day	69.9 (68.2, 71.7)	69.9 (64.5, 75.8)	67.9 (64.5, 71.6)	65.5 (60.7, 70.6)	65.1 (61.9, 68.4)	0.003	
<i>GGT</i>								0.24
	Nondrinker	20.5 (19.9, 21.2)	20.0 (19.1, 21.0)	20.5 (19.4, 21.5)	20.4 (19.1, 21.7)	20.7 (19.2, 22.2)	0.93	
	<2 drinks/day	21.4 (20.9, 21.8)	20.4 (19.8, 21.1)	20.5 (19.9, 21.2)	21.1 (20.3, 21.9)	19.6 (18.9, 20.4)	0.0002	
	2+ drinks/day	36.6 (33.8, 39.5)	32.9 (28.3, 38.2)	35.6 (30.7, 41.1)	33.2 (28.2, 39.1)	30.4 (25.5, 36.1)	0.05	
Smoking								
<i>ALT</i>								0.19
	Never	22.4 (22.0, 22.8)	22.5 (21.9, 23.1)	22.5 (21.9, 23.1)	22.6 (21.8, 23.3)	22.2 (21.5, 23.0)	0.92	
	Former	23.6 (23.4, 24.1)	23.6 (22.7, 24.6)	23.2 (22.4, 24.1)	23.3 (22.3, 24.2)	23.4 (22.5, 24.3)	0.54	
	Current	23.2 (22.6, 23.8)	22.5 (21.5, 23.5)	22.4 (21.5, 23.3)	23.4 (22.2, 24.7)	22.3 (21.2, 23.3)	0.17	
<i>AST</i>								0.05
	Never	23.3 (23.1, 23.6)	23.6 (23.2, 24.0)	23.2 (22.8, 23.7)	23.2 (22.7, 23.8)	23.0 (22.4, 23.5)	0.22	
	Former	24.0 (23.6, 24.3)	24.5 (23.7, 25.3)	23.7 (23.1, 24.2)	23.5 (22.9, 24.2)	23.5 (22.8, 24.3)	0.07	
	Current	23.8 (23.3, 24.2)	23.3 (22.7, 24.0)	22.6 (22.0, 23.3)	23.4 (22.6, 24.2)	22.6 (21.9, 23.3)	0.003	
<i>ALP</i>								0.41
	Never	66.5 (65.6, 67.5)	63.6 (62.4, 64.9)	64.1 (62.8, 65.5)	63.6 (61.9, 65.4)	63.2 (61.4, 65.0)	<.0001	
	Former	67.9 (23.6, 24.3)	65.9 (63.7, 68.1)	65.5 (63.6, 67.5)	65.3 (62.8, 67.9)	65.1 (63.2, 67.1)	0.001	
	Current	69.8 (68.5, 71.0)	65.8 (63.4, 68.3)	67.2 (65.3, 69.2)	65.5 (62.7, 68.4)	65.9 (63.7, 68.1)	0.0006	
<i>GGT</i>								0.03
	Never	20.5 (20.1, 20.9)	19.5 (18.8, 20.3)	20.4 (19.6, 21.1)	20.3 (19.4, 21.3)	20.2 (19.3, 21.2)	0.65	
	Former	22.5 (21.7, 23.4)	22.9 (21.3, 24.5)	21.7 (20.5, 22.9)	22.4 (20.9, 23.9)	21.3 (20.2, 22.5)	0.04	
	Current	24.7 (23.8, 25.6)	22.2 (20.8, 23.7)	23.1 (21.8, 24.5)	23.7 (22.1, 25.5)	21.5 (20.1, 23.0)	0.0005	

<i>AST</i>	No	22.6 (22.3, 22.8)	22.5 (22.1, 22.9)	22.4 (22.0, 22.7)	22.8 (22.3, 23.2)	22.2 (21.6, 22.7)	0.31	0.17
	Yes	43.1 (38.1, 48.7)	38.6 (31.7, 47.1)	41.9 (35.0, 50.1)	49.5 (38.3, 64.0)	39.1 (32.0, 47.8)	0.66	
<i>ALP</i>	No	23.4 (23.2, 23.5)	23.6 (23.3, 23.9)	23.0 (22.7, 23.3)	23.2 (22.9, 23.5)	22.8 (22.4, 23.1)	0.007	0.91
	Yes	41.7 (37.4, 46.6)	38.3 (31.9, 45.9)	38.2 (32.7, 44.6)	45.7 (36.1, 57.8)	38.5 (32.7, 45.4)	0.52	
<i>GGT</i>	No	67.3 (66.5, 68.1)	64.2 (63.2, 65.2)	64.7 (63.8, 65.6)	64.3 (62.9, 65.6)	63.7 (62.6, 64.9)	<.0001	0.004
	Yes	75.4 (70.8, 80.3)	70.7 (62.5, 80.1)	71.7 (62.7, 82.1)	66.3 (55.7, 78.8)	71.4 (63.9, 79.7)	0.18	
	No	21.4 (21.0, 21.8)	20.5 (19.9, 21.0)	20.9 (20.4, 21.4)	21.2 (20.6, 21.9)	20.2 (19.6, 20.9)	0.005	
	Yes	53.4 (46.4, 61.4)	49.3 (38.6, 62.9)	52.5 (38.1, 72.5)	41.0 (31.9, 52.9)	43.0 (33.7, 54.8)	0.06	

^a Adjusted for age (20-34, 35-49, 50-64, 65-85 yr), gender (male, female), race and ethnicity (Mexican American, other Hispanic, non-Hispanic White, non-Hispanic Black, other), education (less than 9th grade, 9-11th grade, high school/GED, some college or AA degree, college and higher), smoking status (Never, former, current smoker with <1 pck/d, current smoker with 1+ pck/d, missing), alcohol consumption (non-drinker, <1, 1- <3, 3-<7 drink/week, 1-<2, 2+ drink/day, missing), day of recall (Monday, Tuesday, Wednesday, Thursday, Friday, Saturday and Sunday), hepatitis B (positive serum hepatitis B surface antigen and core antibody, negative) and hepatitis C (positive serum hepatitis C antibody, negative).

^b one cup is defined as 10 oz, or 283.5 grams of coffee.

Abbreviations: ALT, alanine aminotransferase; AST, aspartate aminotransferase; ALP, alkaline phosphatase; GGT, gamma glutamyl transaminase; BMI, body-mass index; CI, confidence interval

