



Pregnancy and Lactation: Food Group and Nutrient Intakes

2020 Dietary Guidelines Advisory Committee
Supplementary Data Analysis

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Data analysis was used by the 2020 Dietary Guidelines Advisory Committee to describe the current health and dietary intakes of Americans. The data analysis team supported the work of the 2020 Dietary Guidelines Advisory Committee by conducting the analyses. The team, which is comprised of Federal scientists with advanced degrees in nutrition, statistics, and epidemiology, included scientists from the following Departments and agencies:

United States Department of Agriculture (USDA)

Center for Nutrition Policy and Promotion; Food and Nutrition Service; Food, Nutrition, and Consumer Services
Agricultural Research Service; Research, Education, and Economics

United States Department of Health and Human Services (HHS)

Office of Disease Prevention and Health Promotion; Office of the Assistant Secretary for Health
National Cancer Institute; National Institutes of Health
National Center for Health Statistics; Centers for Disease Control and Prevention

The results of the data analyses for the 2020 Advisory Committee Project are available at: <https://www.dietaryguidelines.gov/2020-advisory-committee-report/data-analysis>. Data analyses were used to address topics and supporting scientific questions from USDA and HHS. The results should not be interpreted as dietary guidance. To view the results in the context of the 2020 Advisory Committee's Scientific Report visit: <https://www.dietaryguidelines.gov/2020-advisory-committee-report>.

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INTRODUCTION

The Data Supplement for Pregnancy and Lactation: Food Group and Nutrient Intakes includes the results of the data analyses conducted for the 2020 Dietary Guidelines Advisory Committee by the data analysis team. The findings are further summarized within the Scientific Report of the 2020 Dietary Guidelines Advisory Committee (see Part D: Chapter 1), available at: <https://www.dietaryguidelines.gov/2020-advisory-committee-report>.

The Advisory Committee, with support from Federal staff, developed a protocol, or plan, that described how the scientific questions would be addressed using data analysis. The protocol included an *analytic framework* that described the overall scope and the approach used to answer the question and an *analytic plan* that detailed the data and subsequent analysis to be considered. More information on the data analyses conducted for the 2020 Dietary Guidelines Advisory Committee, including the protocols, is available at: <https://www.dietaryguidelines.gov/2020-advisory-committee-report/data-analysis>.

The Committee examined a collection of analyses to answer these questions. Key nationally representative, Federal data sources included the National Health and Nutrition Examination Survey (NHANES), the National Health Interview Survey (NHIS), and Surveillance, Epidemiology and End Results (SEER). More information about the data source used in the analysis is available at the bottom of each table of results (pages 7-10).

The Committee developed conclusion statements for each question answered using data analysis. The conclusion statements describe the state of the science, based on the evidence considered, in order to answer the specific question examined. The conclusion statements are described in the 2020 Dietary Guidelines Advisory Committee's Scientific Report, available at: <https://www.dietaryguidelines.gov/2020-advisory-committee-report>.

The results of the data analyses for Pregnancy and Lactation: Food Group and Nutrient Intakes are displayed in tables 1-4 on the following pages.

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Table 1. Mean daily intake of FPED quantities from foods and beverages on a day by pregnancy/lactation status, females 20-44, day 1, 2013-2016

	Means and standard errors					
	Not pregnant or lactating		Pregnant		Lactating	
	(N = 2060)		(N = 125)		(N = 78)	
	Mean	se	Mean	se	Mean	se
Fruit (cup eq):						
Total.....	0.87	(0.046)	1.34	(0.171)	1.01	(0.138)
Citrus, melon, berry.....	0.23	(0.023)	0.25	(0.044)	0.19	(0.047)
Other fruit.....	0.42	(0.024)	0.84	(0.142)	0.60	(0.135)
Juice.....	0.22	(0.014)	0.25	(0.065)	0.22	(0.063)
Grain (oz eq):						
Total.....	5.93	(0.103)	6.74	(0.404)	7.77	(0.583)
Whole.....	0.72	(0.037)	1.03	(0.168)	1.35	(0.276)
Refined.....	5.21	(0.111)	5.71	(0.461)	6.42	(0.643)
Oil (g).....	25.7	(0.59)	28.0	(2.67)	32.5	(2.63)
Solid fat (g).....	31.2	(0.50)	36.4	(2.92)	34.8	(2.60)
Added sugars (tsp eq).....	16.0	(0.41)	20.3	(2.16)	14.7	(1.43)
Vegetables (oz eq):						
Total excluding legumes.....	1.44	(0.044)	1.55	(0.118)	1.43	(0.179)
Total starchy.....	0.38	(0.021)	0.42	(0.074)	0.19	(0.055)
Potatoes.....	0.31	(0.021)	0.36	(0.063)	0.15†	(0.050)
Other starchy.....	0.07	(0.005)	0.06†	(0.025)	0.04†	(0.016)
Total red / orange.....	0.34	(0.023)	0.31	(0.047)	0.40	(0.066)
Tomatoes.....	0.24	(0.010)	0.23	(0.028)	0.27	(0.070)
Other red / orange.....	0.10	(0.019)	0.08†	(0.032)	0.13	(0.030)
Dark green.....	0.19	(0.021)	0.27	(0.064)	0.30†	(0.117)
Other.....	0.53	(0.019)	0.55	(0.069)	0.54	(0.107)
Legume.....	0.11	(0.008)	0.09	(0.018)	0.15†	(0.056)
Total including legumes.....	1.55	(0.048)	1.64	(0.120)	1.58	(0.154)
Protein foods (oz eq):						
Total excluding legumes.....	5.36	(0.106)	5.23	(0.465)	7.36	(0.480)
Total meat, poultry, seafood.....	4.07	(0.095)	3.93	(0.304)	5.04	(0.493)
Meat (beef, veal, pork, etc.)....	1.19	(0.050)	1.23	(0.196)	1.34	(0.335)
Poultry.....	1.48	(0.072)	1.39	(0.185)	1.89	(0.354)
Cured meat.....	0.79	(0.037)	0.68	(0.150)	0.79	(0.211)
Total fish and seafood.....	0.59	(0.062)	0.60†	(0.208)	1.01†	(0.357)
Seafood low in n-3.....	0.43	(0.050)	0.43†	(0.193)	0.55	(0.148)
Seafood high in n-3.....	0.16	(0.027)	0.17†	(0.099)	0.46†	(0.293)
Eggs.....	0.55	(0.026)	0.51	(0.105)	0.58	(0.101)
Peanuts, nuts, seeds.....	0.63	(0.056)	0.69	(0.185)	1.58	(0.399)
Soy products except soy milk..	0.11	(0.015)	0.10†	(0.057)	0.16†	(0.117)
Legumes computed as protein...	0.43	(0.032)	0.35	(0.073)	0.60†	(0.222)
Total including legumes.....	5.79	(0.121)	5.58	(0.463)	7.97	(0.480)
Dairy (oz eq):						
Total.....	1.39	(0.030)	1.78	(0.156)	1.51	(0.237)
Fluid milk.....	0.54	(0.023)	0.89	(0.113)	0.74	(0.158)
Cheese.....	0.74	(0.029)	0.83	(0.109)	0.70	(0.110)
Yogurt.....	0.07	(0.007)	0.04†	(0.019)	0.04†	(0.015)

NOTES: † indicates an estimate that may be less precise than others due to small sample size and/or large relative standard error.
indicates a non-zero value too small to present.

SOURCE: WWEIA 2013-2016 and the appropriate Food Patterns Equivalents Databases
Prepared by the Food Surveys Research Group, Beltsville Human Nutrition Research Center, ARS, USDA 12/18/19

Table 2. Comparison of mean daily intake of MPED/FPED quantities between 2001-2004 and 2013-2016, non-pregnant or lactating females 20-44 years old, day 1

	Means and standard errors				Paired comparisons	
	2001-2004		2013-2016		Diff	p
	Mean	se	Mean	se		
Total vegetables (cup eq.).....	1.6	(0.03)	1.4	(0.04)		0.1 0.0240
Total fruit (cup eq.).....	0.8	(0.04)	0.9	(0.05)		-0.1 0.1392
Total grain (oz eq.).....	6.2	(0.15)	5.9	(0.10)		0.3 0.1546
Whole grain (oz eq.).....	0.5	(0.03)	0.7	(0.04)		-0.2 0.0000*
Refined grain (oz eq.).....	5.7	(0.13)	5.2	(0.11)		0.5 0.0060
Total Dairy (oz eq.).....	1.5	(0.06)	1.4	(0.03)		0.1 0.3356
Total meat, poultry, and seafood (oz eq.).....	4.0	(0.11)	4.1	(0.10)		-0.1 0.6673
Oil (g).....	17	(0.7)	26	(0.6)		-8 0.0000*
Added sugar:						
Teaspoon equivalents.....	21	(0.5)	16	(0.4)		5 0.0000*
Contribution to total energy (%).....	42	(0.9)	31	(0.5)		11 0.0000*
Solid fat:						
Gram amount.....	18	(0.5)	14	(0.3)		4 0.0000*
Contribution to total energy (%).....	19	(0.3)	14	(0.3)		4 0.0000*

NOTES: Quantities defined by the My Pyramid Equivalents Database: MPED 1.0 and MPED 2.0 for 2001-2002 and 2003-2004 respectively and by the Food Patterns Equivalents Database: FPED 2013-2014 and FPED 2015-2016 for 2013-2014 and 2015-2016 respectively. Legumes included among total vegetables.

† indicates an estimate that may be less precise than others due to small sample size and/or large relative standard error. # indicates a non-zero value too small to present.

* highlights differences significant at $p < 0.001$.

SOURCE: WWEIA 2001-2004, 2013-2016

Prepared by the Food Surveys Research Group, Beltsville Human Nutrition Research Center, ARS, USDA 12/18/19

Table 3. Mean daily intake of nutrients from foods and beverages on a day by pregnancy/lactation status, females 20-44, day 1, 2013-2016

	Means and standard errors					
	Not pregnant or lactating		Pregnant		Lactating	
	(N = 2060)		(N = 125)		(N = 78)	
	Mean	se	Mean	se	Mean	se
Energy (kcal).....	1900	(22.9)	2099	(107.0)	2171	(86.1)
Protein (g).....	72.7	(1.00)	75.1	(3.46)	87.9	(3.57)
Carbohydrate (g).....	227	(3.5)	270	(14.2)	259	(12.8)
Total sugars (g).....	100	(2.1)	129	(9.5)	102	(7.2)
Dietary fiber (g).....	15.4	(0.38)	18.0	(0.98)	20.5	(1.21)
Total fat (g).....	74.4	(0.89)	82.5	(5.25)	89.9	(3.93)
Saturated fat (g).....	24.0	(0.32)	27.7	(1.69)	27.9	(1.56)
Monounsaturated fat (g).....	25.8	(0.35)	28.0	(1.95)	32.0	(1.78)
Polyunsaturated fat (g).....	17.8	(0.31)	19.3	(1.52)	22.1	(1.22)
PFA 18:2 (g).....	15.7	(0.27)	17.1	(1.35)	19.7	(1.16)
PFA 18:3 (g).....	1.7	(0.03)	1.8	(0.14)	1.9	(0.12)
Cholesterol (mg).....	263	(4.6)	274	(28.6)	297	(27.7)
Retinol (mcg).....	363	(6.6)	491	(55.3)	444	(38.4)
Vitamin A, RAE (mcg).....	569	(24.1)	682	(64.9)	689	(47.2)
Alpha-carotene (mcg).....	411	(81.5)	313†	(165.8)	571	(140.8)
Beta-carotene (mcg).....	2244	(217.1)	2114	(518.8)	2623	(417.7)
Beta-cryptoxanthin (mcg).....	78	(6.6)	63	(8.5)	81	(20.3)
Lycopene (mcg).....	4330	(223.3)	4506	(692.5)	4645†	(1873.2)
Lutein + zeaxanthin (mcg).....	1678	(131.0)	1728	(295.5)	2166	(505.2)
Thiamin (mg).....	1.40	(0.023)	1.54	(0.086)	1.79	(0.171)
Riboflavin (mg).....	1.86	(0.035)	1.99	(0.123)	2.21	(0.094)
Niacin (mg).....	23.0	(0.37)	23.6	(1.37)	27.5	(1.83)
Vitamin B6 (mg).....	1.94	(0.047)	1.88	(0.128)	2.28	(0.184)
Folic acid (mcg).....	156	(3.9)	172	(17.2)	257	(42.0)
Food folate (mcg).....	200	(5.2)	217	(13.2)	247	(18.8)
Folate, DFE (mcg).....	466	(8.3)	510	(36.0)	683	(73.1)
Total choline (mg).....	291	(4.8)	297	(19.3)	340	(20.4)
Vitamin B12 (mcg).....	4.16	(0.090)	4.56	(0.441)	5.29	(0.667)
Vitamin C (mg).....	72.5	(2.89)	89.3	(5.32)	81.0	(9.49)
Vitamin D (mcg).....	4.02	(0.162)	4.80	(0.579)	6.20	(1.430)
Alpha-tocopherol (mg).....	8.67	(0.206)	8.93	(0.781)	12.28	(1.550)
Vitamin K (mcg).....	120.6	(6.89)	131.3	(14.93)	181.3	(39.34)
Calcium (mg).....	869	(11.9)	1013	(57.7)	1040	(55.4)
Phosphorus (mg).....	1231	(15.9)	1327	(61.7)	1471	(60.7)
Magnesium (mg).....	271	(4.7)	287	(12.1)	347	(18.0)
Iron (mg).....	12.3	(0.18)	14.2	(0.82)	16.0	(1.23)
Zinc (mg).....	9.6	(0.15)	10.8	(0.63)	12.0	(0.95)
Copper (mg).....	1.12	(0.022)	1.28	(0.068)	1.46	(0.096)
Selenium (mcg).....	101.9	(1.45)	109.3	(4.94)	123.7	(5.94)
Potassium (mg).....	2280	(44.6)	2507	(108.8)	2605	(109.2)
Sodium (mg).....	3203	(39.2)	3334	(158.4)	3740	(165.8)
Caffeine (mg).....	121.7	(5.78)	70.7	(9.91)	100.0	(25.84)
Theobromine (mg).....	33.1	(1.71)	50.7	(10.77)	26.6	(6.69)
Alcohol (g).....	8.2	(0.84)	1.3†	(0.79)	1.0†	(0.55)

NOTES: † indicates an estimate that may be less precise than others due to small sample size and/or large relative standard error.
indicates a non-zero value too small to present.

SOURCE: WWEIA 2013-2016

Prepared by the Food Surveys Research Group, Beltsville Human Nutrition Research Center, ARS, USDA 12/18/19

Table 4. Mean daily intake of nutrients from foods, beverages, and dietary supplements on a day by pregnancy/lactation status, females 20-44, day 1, 2013-2016

	Not pregnant or lactating			
	(N = 2032)			
	Percentage reporting supplements		Mean total intake	
	Mean	se	Mean	se
Thiamin (mg).....	14	(1.3)	2.63	(0.273)
Riboflavin (mg).....	14	(1.3)	2.97	(0.194)
Niacin (mg).....	17	(1.3)	27.3	(0.76)
Vitamin B6 (mg).....	19	(1.3)	3.82	(0.492)
Folic acid (mcg).....	19	(1.3)	243	(8.0)
Folate, DFE (mcg).....	19	(1.3)	612	(15.6)
Total choline (mg).....	5	(0.6)	294	(4.4)
Vitamin B12 (mcg).....	20	(1.4)	35.60	(6.671)
Vitamin C (mg).....	20	(1.4)	110.8	(7.41)
Vitamin D (mcg).....	21	(1.3)	14.16	(1.917)
Vitamin K (mcg).....	11	(1.0)	125.2	(6.88)
Calcium (mg).....	18	(1.3)	937	(13.7)
Phosphorus (mg).....	5	(0.7)	1229	(15.8)
Magnesium (mg).....	12	(1.2)	284	(5.2)
Iron (mg).....	13	(1.3)	15.7	(0.42)
Zinc (mg).....	17	(1.4)	11.7	(0.26)
Copper (mg).....	11	(1.0)	1.30	(0.029)
Selenium (mcg).....	11	(1.0)	107.6	(1.79)
Potassium (mg).....	5	(0.7)	2277	(45.5)
Sodium (mg).....	5	(0.7)	3198	(38.4)

NOTES: † indicates an estimate that may be less precise than others due to small sample size and/or large relative standard error.
indicates a non-zero value too small to present. Excludes women without complete day 1 dietary supplement data.

SOURCE: WWEIA 2013-2016 and the appropriate 24-hr dietary supplement databases

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