



NHANES 2011-2014 Dairy Foods Messaging

04.09.2018



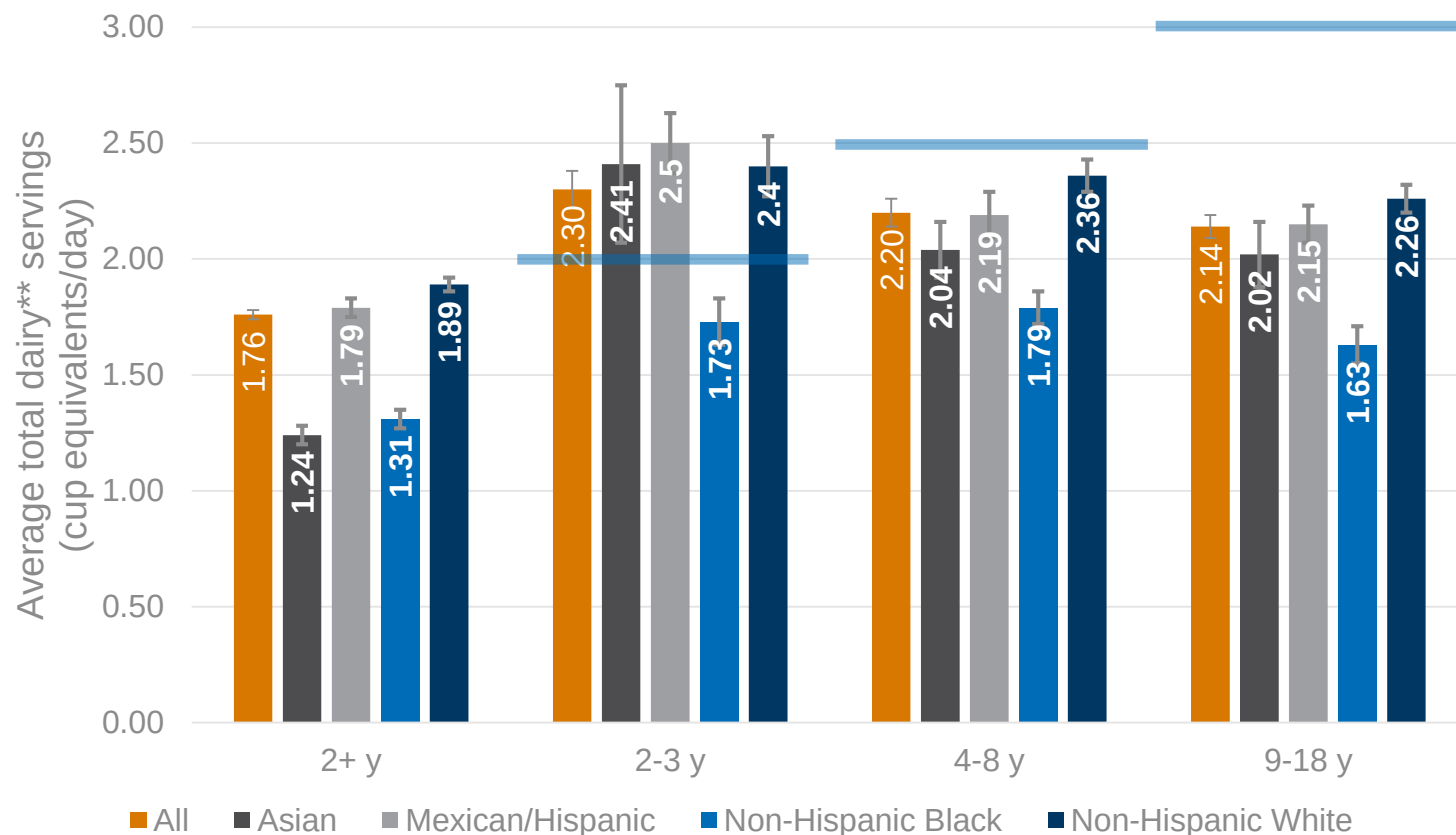
Recommended citation for all claims and messaging in this deck, unless otherwise indicated:
National Dairy Council. NHANES 2011-2014. Data Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health and Nutrition Examination Survey Data. Hyattsville, MD: U.S. Department of Health and Human Services.
<http://www.cdc.gov/nchs/nhanes.htm>

Background

- The current deck provides messaging for dairy servings and nutrient contributions of dairy foods using the National Health and Nutrition Examination Survey (NHANES 2011-2014).
- The data in this deck are also available by different age group, gender, and ethnicity classifications in both children & adolescents and adults. Please see “Average Contribution of Dairy Foods to Calorie and Nutrient Intakes (NHANES 2011-2014)” and “Average Daily Servings of Dairy Foods by Ethnicity and Age Group (NHANES 2011-2014)” documents.
- Figures on slides 27-31 can also be developed by individual dairy food (i.e., milk alone, cheese alone, yogurt alone) by age, gender and/or ethnicity.
- The data presented in this deck can be used as support for messaging in various formats (Regulatory Affairs review recommended).



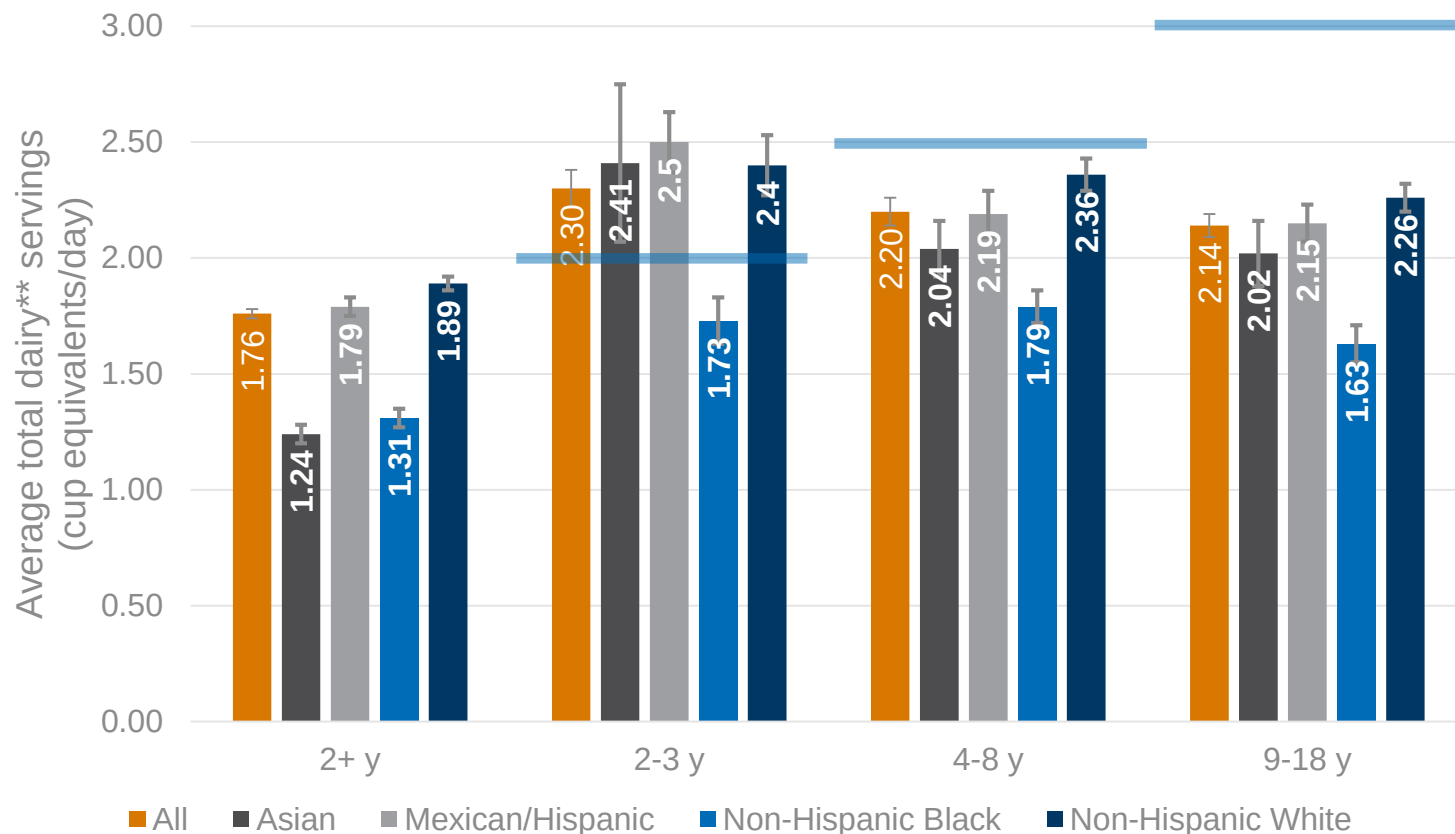
On average, children and adolescents of various age groups and ethnicities are not meeting dairy recommendations*



*2015-2020 Dietary Guidelines for Americans Recommendations: 2-3 years: 2 cup equivalent servings/day; 4-8 years: 2.5 servings/day; 9+ years 3 servings/day. Cup equivalent servings: 1 cup of milk or yogurt, 1.5 ounces natural cheese, 2 ounces processed cheese.

**NHANES Milk and Dairy Main Group, includes white milk, flavored milk, cheese, yogurt, milk shakes and other dairy drinks, milk substitutes

In particular, Non-Hispanic Black American children are not meeting dairy recommendations at any age group, and all ethnicities 4-18 years fall short of recommendations*



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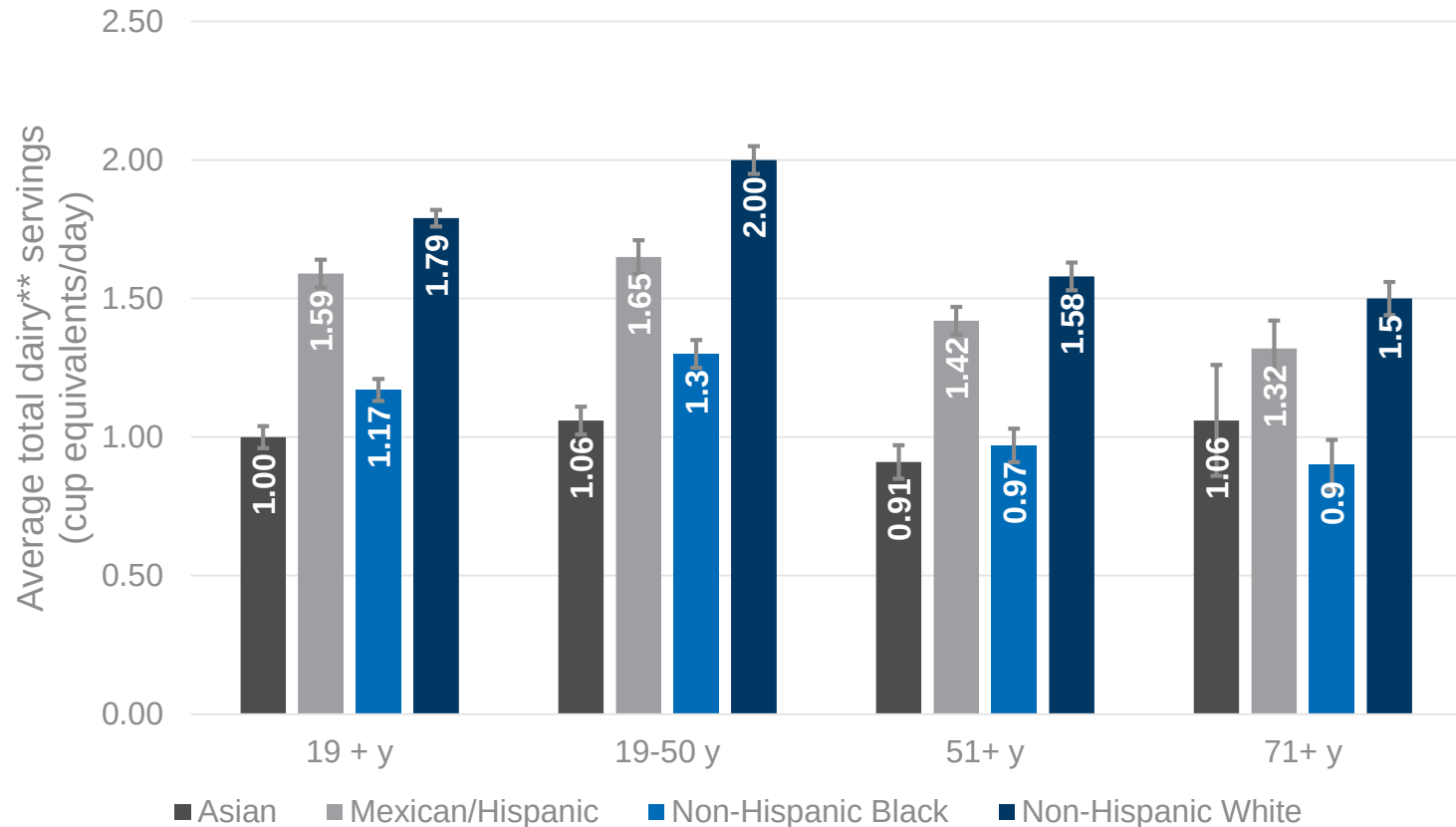
**NHANES Milk and Dairy Main Group, includes white milk, flavored milk, cheese, yogurt, milk shakes and other dairy drinks, milk substitutes

American children (2-18 y) consume an average of about 2.2 cup equivalents* of dairy foods (milk/cheese/yogurt) per day

- American children consume an average of 1.3 cups of milk per day, mostly (1.1 cups) as a beverage
- Mexican American children consume an average of 0.8 cup equivalents of cheese per day, and 67% is consumed in food mixtures
- Non-Hispanic Black American children consume the least amount of dairy foods (milk, cheese, and yogurt), as compared to other ethnicities, at an average of 1.7 cup equivalents per day



American adults of all ages and ethnicities, on average, are not meeting dairy recommendation of 3 servings/day



*Cup equivalent servings: 1 cup of milk or yogurt, 1.5 ounces natural cheese, 2 ounces processed cheese.

**NHANES Milk and Dairy Main Group, includes white milk, flavored milk, cheese, yogurt, milk shakes and other dairy drinks, milk substitutes



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Americans (2+ y) consume an average of approximately 1.7 cup equivalents of dairy foods (milk, cheese, and yogurt) per day



- On average, Americans consume 0.9 cups of milk per day; approximately 0.6 cups of milk are consumed as a beverage, primarily reduced fat white milk
- Americans consume an average of 0.1 cup eq.* of yogurt per day, primarily low-fat and non-fat versions
- On average, Americans consume 0.8 cup eq. of cheese per day; 58% is consumed as part of food mixtures



Dairy consumption per day varies by ethnicity (Americans 2+ years)



- All Americans consume an average of 1.7 cup eq.* of milk, cheese, and yogurt
- Asian Americans consume an average of 1.2 cup eq. of dairy foods (milk, cheese, and yogurt)
- Non-Hispanic Black Americans consume an average of 1.3 cup eq. of dairy foods (milk, cheese, and yogurt)
- Non-Hispanic White Americans consume an average of 1.9 cup eq. of dairy foods (milk, cheese, and yogurt)
- Mexican/Hispanic Americans consume an average of 1.8 cup eq. of dairy foods (milk, cheese, and yogurt)



Cheese consumption per day can vary by ethnicity (Americans 2+ years)



- Asian Americans consume half the amount of cheese (0.4 cup eq.* on average) as compared to the total American population (0.8 cup eq.)
- Non-Hispanic Black Americans consume 0.7 cup eq. of cheese on average as compared to the total American population (0.8 cup eq.)
- Non-Hispanic White Americans consume 0.9 cup equivalents of cheese on average as compared to the total American population (0.8 cup eq.)
- Mexican/Hispanic Americans consume 0.8 cup eq. of cheese on average (similar to all Americans)
- Non-Hispanic White Americans consume approximately half of their cheese in food mixtures and half alone



Average daily consumption of dairy products by age group

	2015 Dietary Guidelines Recommendations (cup equivalents*)	Total Dairy**	Milk	Cheese	Yogurt	Other
		Mean				
		Cup equivalent servings/day				
Total Population						
2+ y (n=15,833)	2-3 y: 2 cup eq. 4-8 y: 2.5 cup eq. 9+ y: 3 cup eq.	1.76 ± 0.02	0.87	0.80	0.06	0.03
Children						
2-18 y (n= 5,879)		2.18 ± 0.04	1.30	0.80	0.06	0.04
2-3 y (n=839)	2	2.30 ± 0.08	1.63	0.54	0.12	.
4-8 y (n=1,816)	2.5	2.20 ± 0.06	1.39	0.72	0.08	0.02
6-11 y (n= 2,193)	4-8 y: 2.5; 9+ y: 3	2.23 ± 0.05	1.32	0.83	0.06	0.03
9-18 y (n=3,224)	3	2.14 ± 0.05	1.18	0.89	0.04	0.03
12-18 y (n= 2,172)	3	2.13 ± 0.06	1.17	0.90	0.04	0.04
Adults						
19+ y (n= 9,954)	3	1.64 ± 0.02	0.74	0.80	0.06	0.03
19-50 y (n= 5,432)	3	1.78 ± 0.04	0.73	0.95	0.06	0.03
51+ (n= 4,522)	3	1.46 ± 0.04	0.76	0.60	0.07	0.03
71+ y (n=1,318)	3	1.42 ± 0.03	0.88	0.43	0.07	0.00

*cup equivalent (cup eq.) servings: 1 cup of milk or yogurt, 1.5 ounces natural cheese, 2 ounces processed cheese

**NHANES Milk and Dairy Main Group, includes milk (white and flavored), cheese, yogurt, and other (milk shakes, dairy drinks, milk substitutes)

NHANES 2011-2014, all ages 2 years and older with complete, reliable 24-hour recall on Day 1



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Average daily consumption of dairy products by ethnicity (2+ y)

	Total Dairy**	Milk	Cheese	Yogurt	Other
	Mean				
	Cup equivalent servings*/day				
Ethnicity					
Asian (n=1,749)	1.24 ± 0.04	0.76	0.38	0.08	0.05
Mexican/Hispanic (n= 3,991)	1.79 ± 0.04	0.86	0.84	0.05	0.03
Non-Hispanic Black (n= 3,932)	1.31 ± 0.04	0.58	0.68	0.03	0.02
Non-Hispanic White (n= 5,509)	1.89 ± 0.03	0.94	0.85	0.07	0.03

2015 Dietary Guidelines for Americans Recommendations: 2-3 yrs: 2 servings*/day, 4-8 yrs: 2.5 servings/day, 9+ yrs: 3 servings/day

*cup equivalent servings: 1 cup of milk or yogurt, 1.5 ounces natural cheese, 2 ounces processed cheese

**NHANES Milk and Dairy Main Group, includes milk (white and flavored), cheese, yogurt, and other (milk shakes, dairy drinks, milk substitutes)

NHANES 2011-2014, all ages 2 years and older with complete, reliable 24-hour recall on Day 1

Average daily consumption of dairy products by ethnicity (2-18 y)

	Total Dairy**	Milk	Cheese	Yogurt	Other
	Mean				
	Cup equivalent servings*/day				
Ethnicity					
Asian (n=615)	2.07 ± 0.08	1.43	0.52	0.10	0.04
Mexican/Hispanic (n= 1,881)	2.20 ± 0.06	1.29	0.84	0.06	0.02
Non-Hispanic Black (n= 1,601)	1.69 ± 0.06	0.95	0.69	0.03	0.02
Non-Hispanic White (n= 1,433)	2.31 ± 0.05	1.38	0.84	0.07	0.05

2015 Dietary Guidelines for Americans Recommendations: 2-3 yrs: 2 servings*/day, 4-8 yrs: 2.5 servings/day, 9+ yrs: 3 servings/day

*cup equivalent servings: 1 cup of milk or yogurt, 1.5 ounces natural cheese, 2 ounces processed cheese

**NHANES Milk and Dairy Main Group, includes milk (white and flavored), cheese, yogurt, and other (milk shakes, dairy drinks, milk substitutes)

NHANES 2011-2014, all ages 2 years and older with complete, reliable 24-hour recall on Day 1

Average daily consumption of dairy products by ethnicity (6-11 y)

	Total Dairy**	Milk	Cheese	Yogurt	Other
	Mean				
	Cup equivalent servings*/day				
Ethnicity					
Asian (n=185)	2.12 ± 0.12	1.55	0.44	0.12	0.00
Mexican/Hispanic (n= 686)	2.20 ± 0.09	1.28	0.83	0.08	0.02
Non-Hispanic Black (n= 620)	1.79 ± 0.07	1.02	0.73	0.03	0.01
Non-Hispanic White (n= 565)	2.37 ± 0.07	1.39	0.91	0.07	0.03

2015 Dietary Guidelines for Americans Recommendations: 4-8 yrs: 2.5 servings/day, 9+ yrs: 3 servings/day

*cup equivalent servings: 1 cup of milk or yogurt, 1.5 ounces natural cheese, 2 ounces processed cheese

**NHANES Milk and Dairy Main Group, includes milk (white and flavored), cheese, yogurt, and other (milk shakes, dairy drinks, milk substitutes)

NHANES 2011-2014, all ages 2 years and older with complete, reliable 24-hour recall on Day 1



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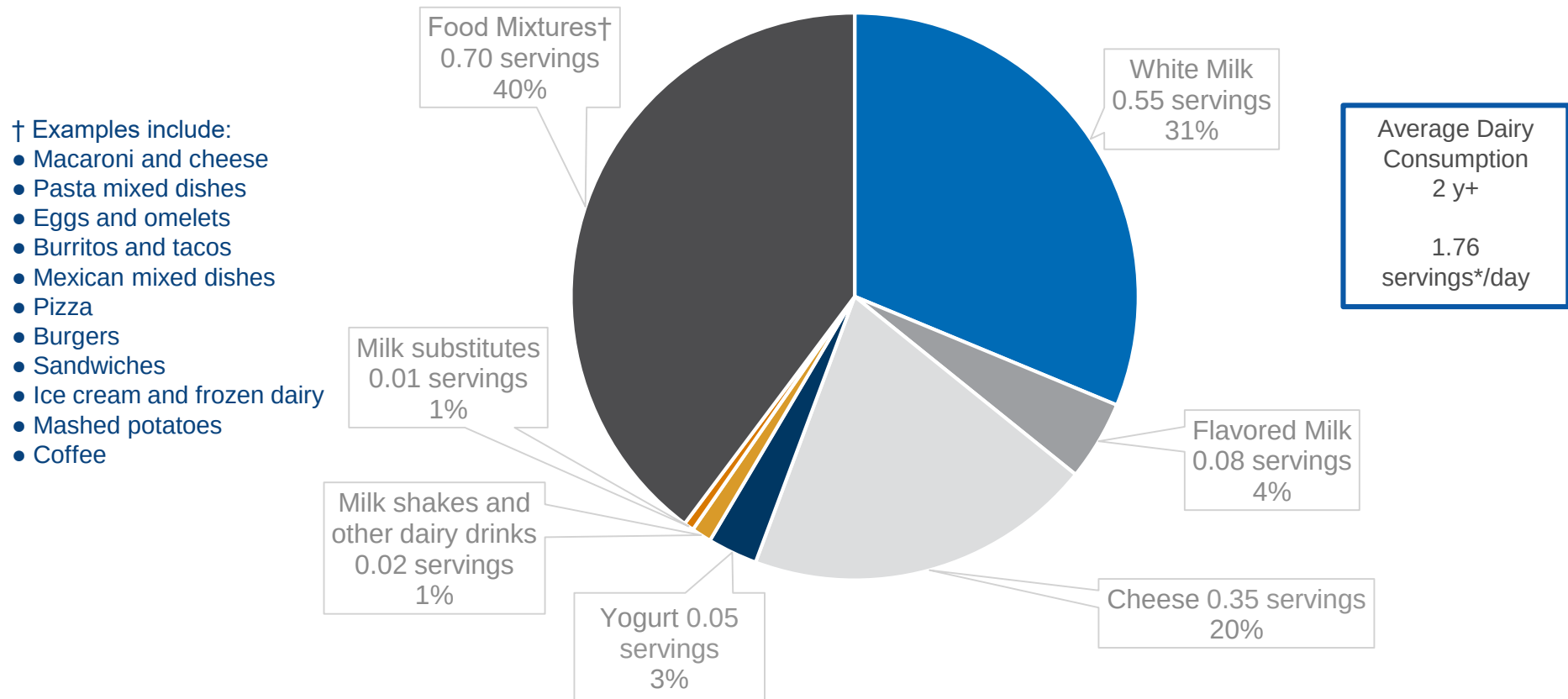


Average daily consumption of dairy products by ethnicity (12-18 y)

	Total Dairy**	Milk	Cheese	Yogurt	Other
	Mean				
	Cup equivalent servings*/day				
Ethnicity					
Asian (n=270)	1.94 ± 0.16	1.23	0.64	0.06	0.01
Mexican/Hispanic (n= 690)	2.10 ± 0.11	1.09	0.97	0.02	0.01
Non-Hispanic Black (n= 571)	1.60 ± 0.09	0.75	0.81	0.02	0.02
Non-Hispanic White (n= 527)	2.28 ± 0.08	1.29	0.91	0.05	0.05

2015 Dietary Guidelines for Americans Recommendations: 9+ yrs: 3 servings/day
 *cup equivalent servings: 1 cup of milk or yogurt, 1.5 ounces natural cheese, 2 ounces processed cheese
 **NHANES Milk and Dairy Main Group, includes milk (white and flavored), cheese, yogurt, and other (milk shakes, dairy drinks, milk substitutes)
 NHANES 2011-2014, all ages 2 years and older with complete, reliable 24-hour recall on Day 1

Americans (2+ y) consume the majority of dairy foods in food mixtures and as white milk

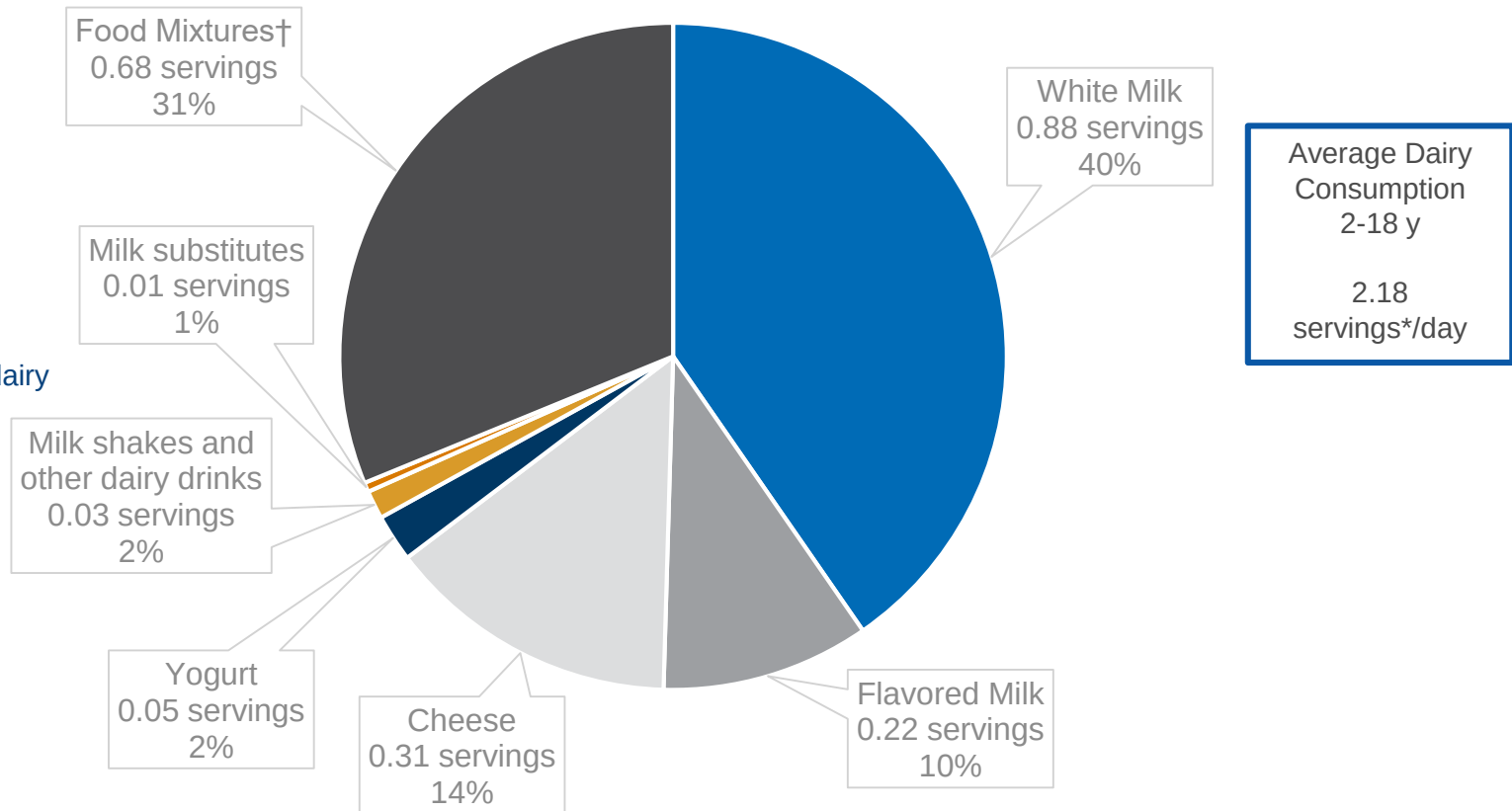


*Cup equivalent servings: 1 cup of milk or yogurt, 1.5 ounces natural cheese, 2 ounces processed cheese

Americans (2-18 y) consume the majority of dairy foods as white milk and cheese in food mixtures

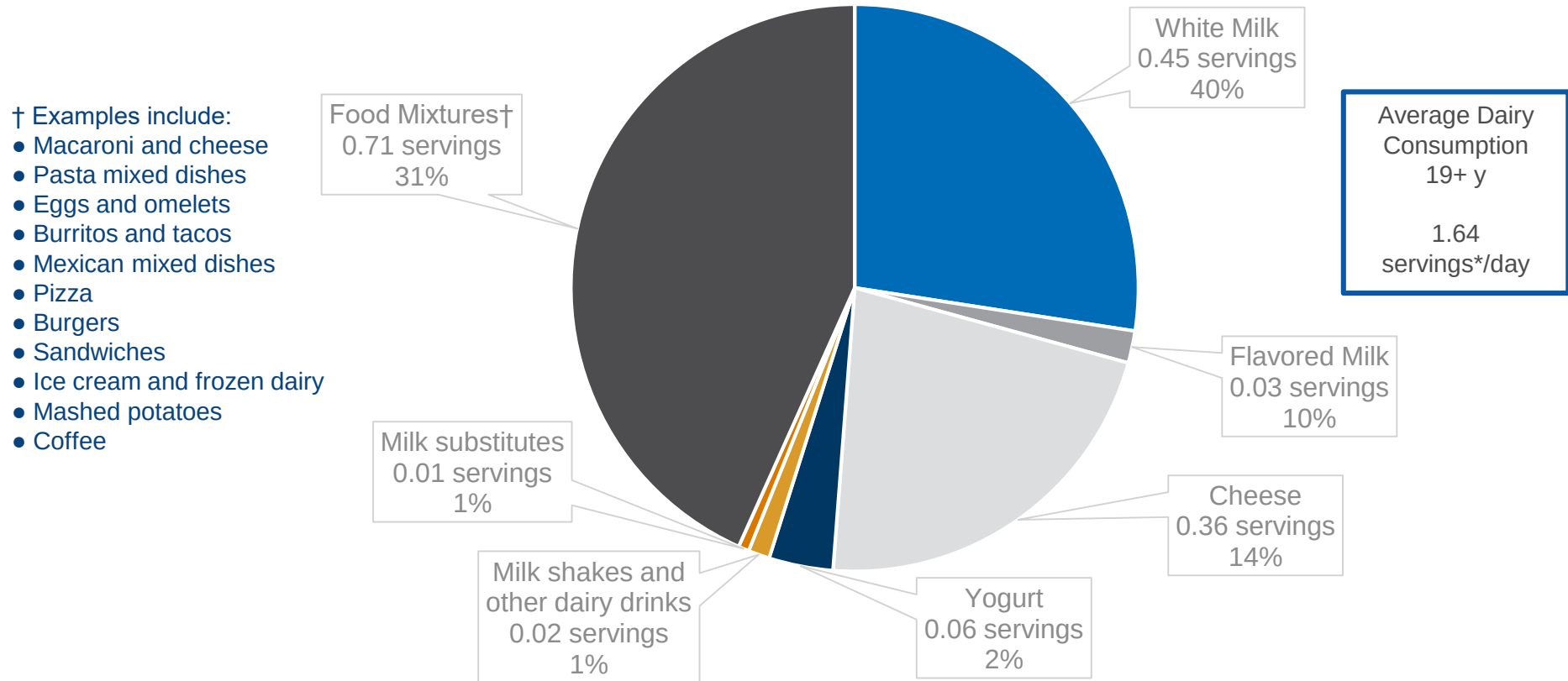
† Examples include:

- Macaroni and cheese
- Pasta mixed dishes
- Eggs and omelets
- Burritos and tacos
- Mexican mixed dishes
- Pizza
- Burgers
- Sandwiches
- Ice cream and frozen dairy
- Mashed potatoes
- Coffee



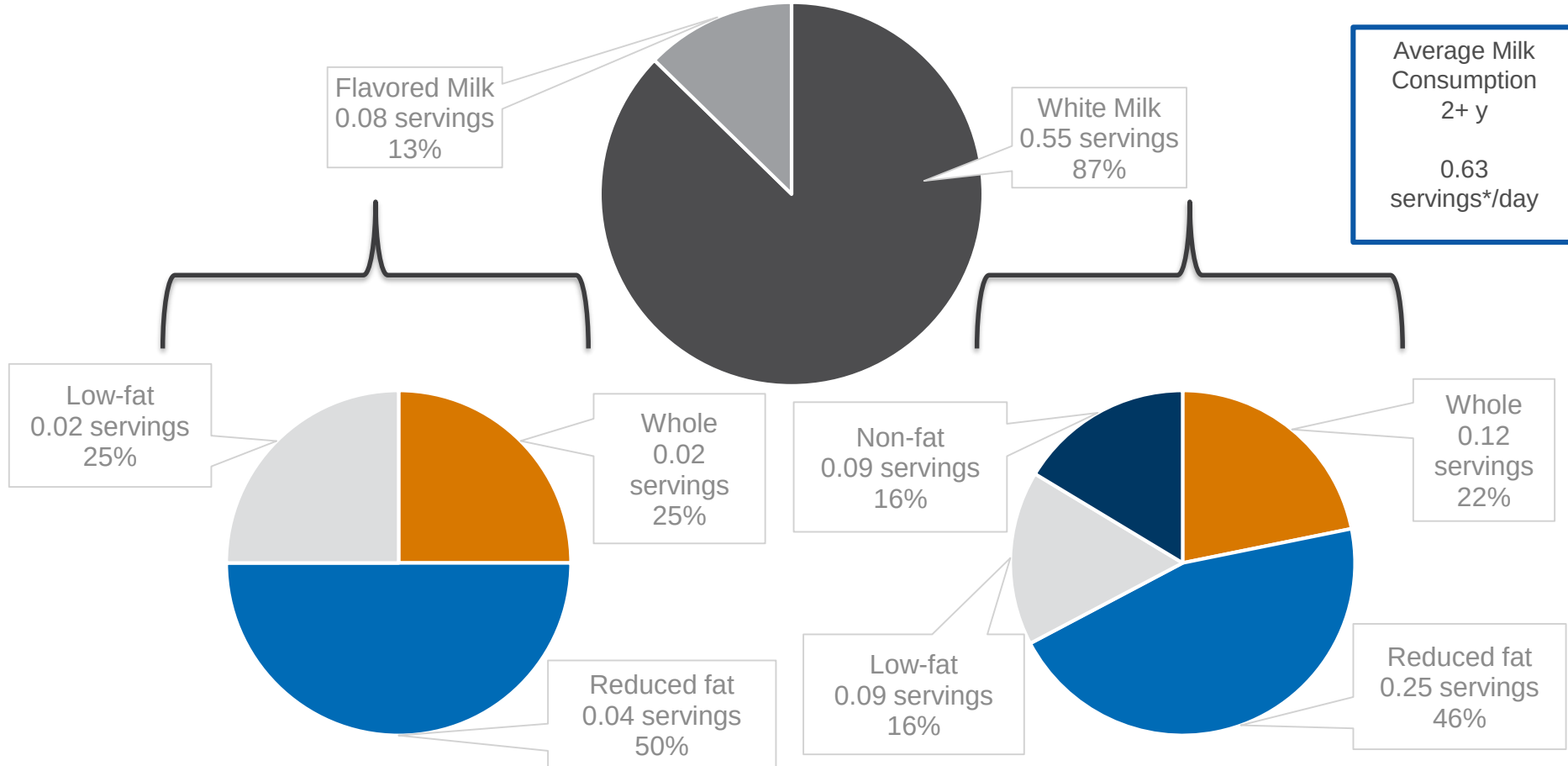
*Cup equivalent servings: 1 cup of milk or yogurt, 1.5 ounces natural cheese, 2 ounces processed cheese

In American adults (19+ y), most dairy is consumed as part of food mixtures and when consumed alone, as white milk



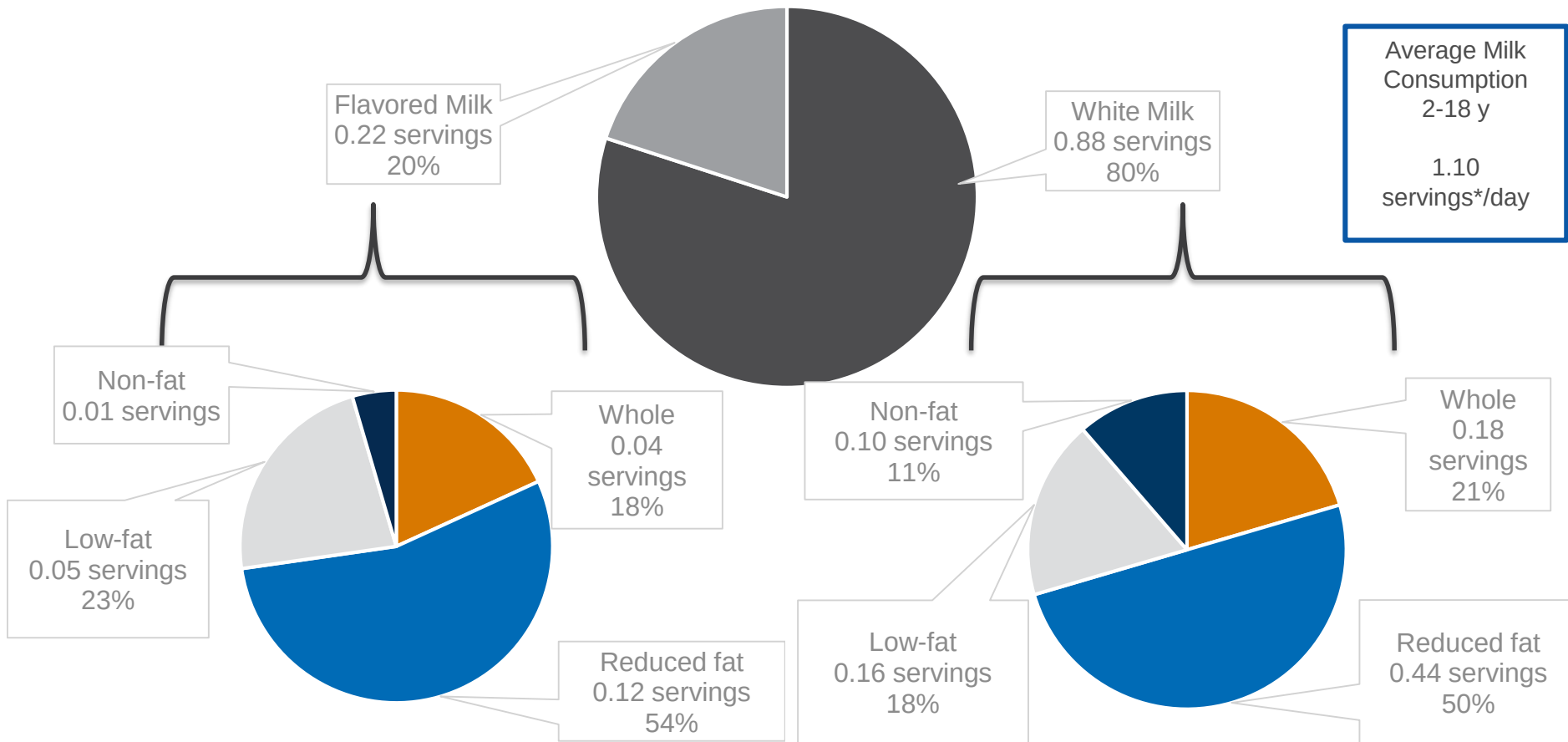
*Cup equivalent servings: 1 cup of milk or yogurt, 1.5 ounces natural cheese, 2 ounces processed cheese

Americans (2+ y) consume mostly reduced fat and whole milk



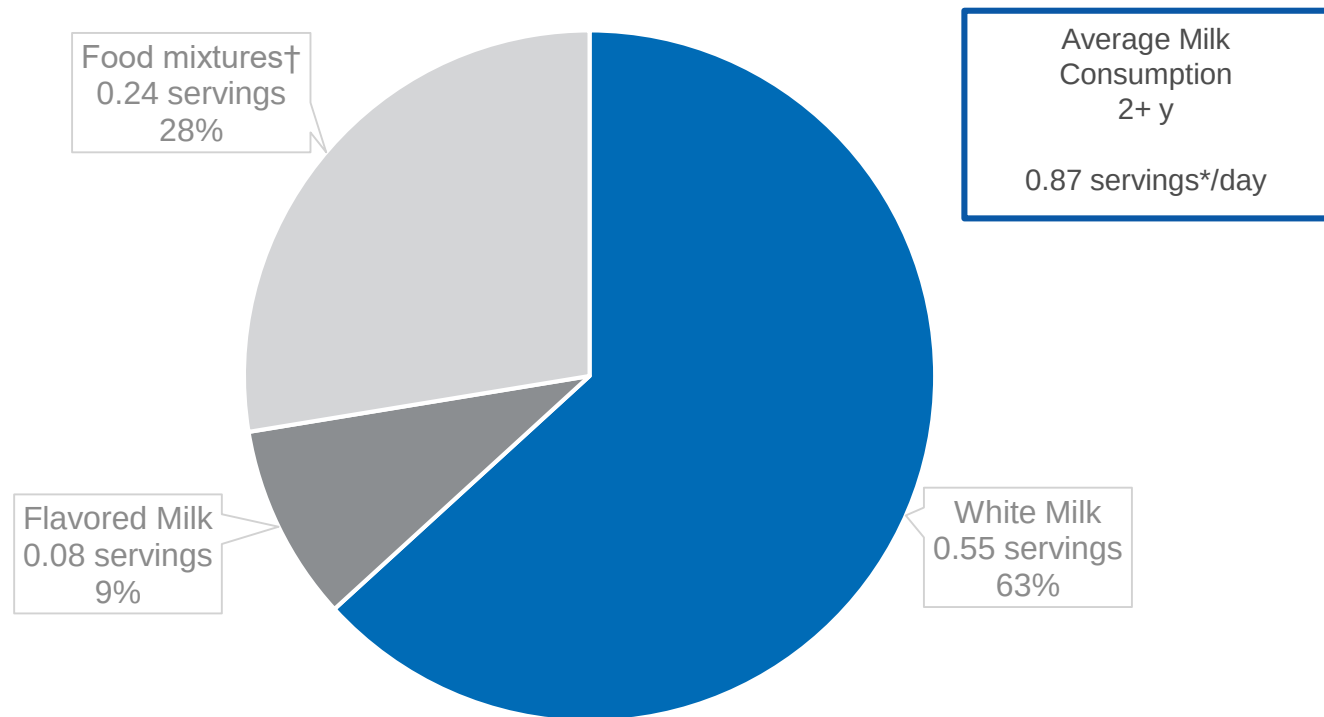
*Cup equivalent servings: 1 cup of milk or yogurt, 1.5 ounces natural cheese, 2 ounces processed cheese

American children (2-18 y) consume mostly reduced fat white and flavored milk



*Cup equivalent servings: 1 cup of milk or yogurt, 1.5 ounces natural cheese, 2 ounces processed cheese

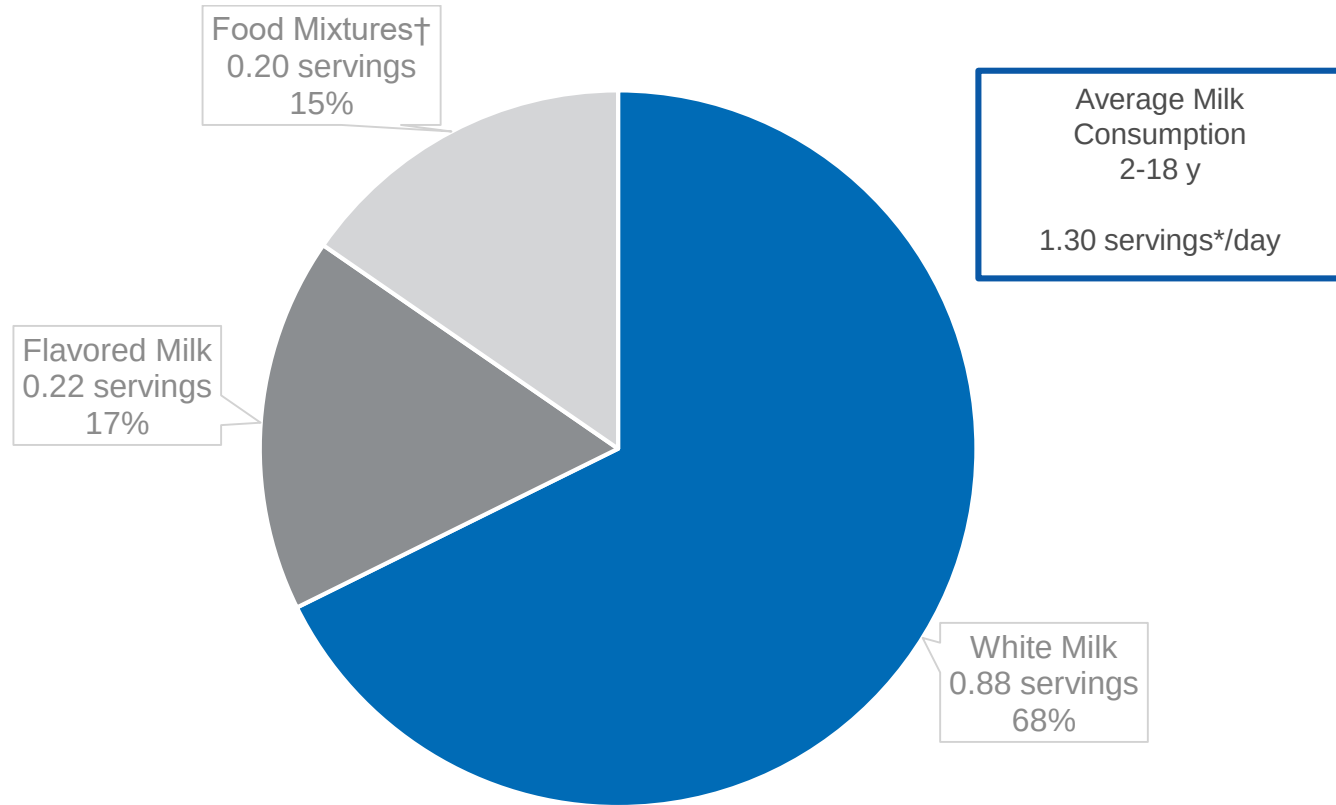
63% of milk consumption by Americans (2+ y) is white milk as a beverage



† Examples of food mixtures include: Macaroni and cheese, Pasta mixed dishes, Eggs and omelets, Ice cream and frozen dairy, Mashed potatoes, Coffee, Quick breads and bread products, pudding

*Cup equivalent servings: 1 cup of milk or yogurt, 1.5 ounces natural cheese, 2 ounces processed cheese

68% of milk consumption by American children (2-18 y) is white milk as a beverage



† Examples of food mixtures include: Macaroni and cheese, Pasta mixed dishes, Eggs and omelets, Ice cream and frozen dairy, Mashed potatoes, Coffee, Quick breads and bread products, pudding

*Cup equivalent servings: 1 cup of milk or yogurt, 1.5 ounces natural cheese, 2 ounces processed cheese

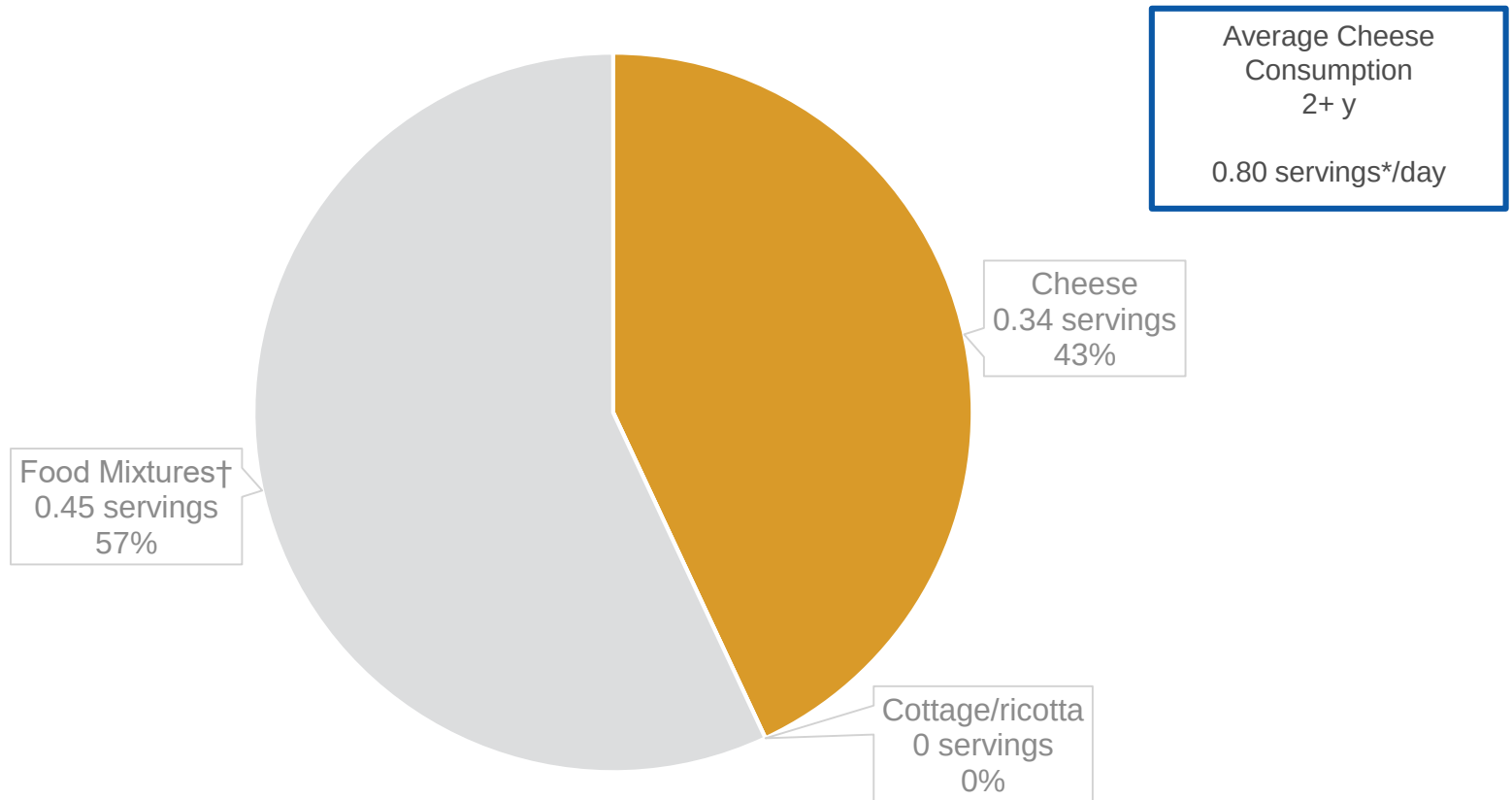


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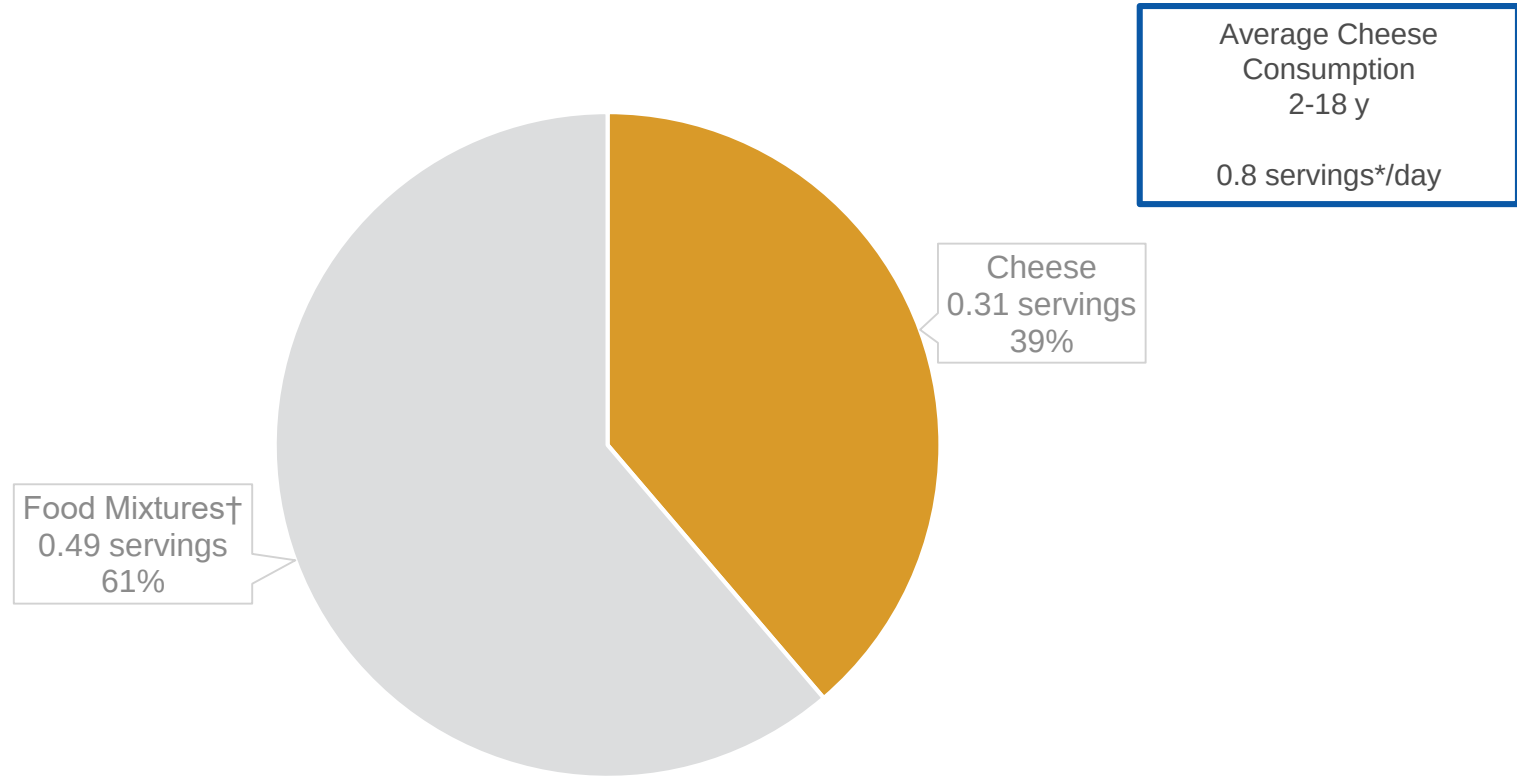
Most cheese in the U.S. diet (2+ y) is part of food mixtures



† Examples include: Macaroni and cheese, Pasta mixed dishes, Eggs and omelets, Burritos and tacos, Mexican mixed dishes, Pizza, Burgers, Sandwiches, Mashed potatoes

*Cup equivalent servings: 1 cup of milk or yogurt, 1.5 ounces natural cheese, 2 ounces processed cheese

Most cheese in American children's (2-18 y) diet is part of food mixtures



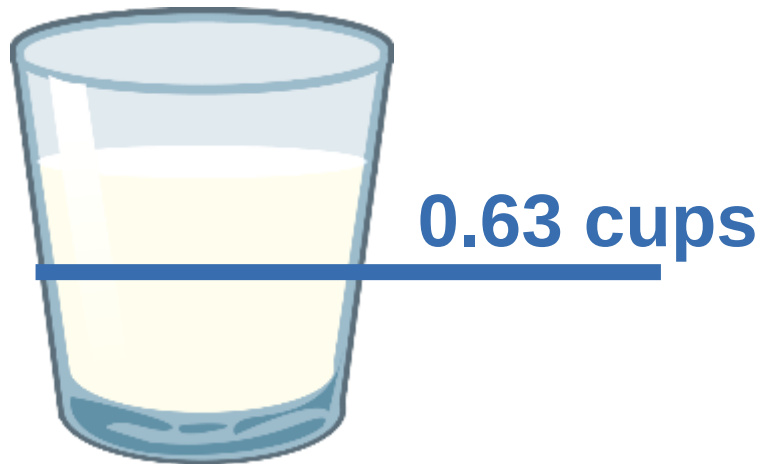
† Examples include: Macaroni and cheese, Pasta mixed dishes, Eggs and omelets, Burritos and tacos, Mexican mixed dishes, Pizza, Burgers, Sandwiches, Mashed potatoes

*Cup equivalent servings: 1 cup of milk or yogurt, 1.5 ounces natural cheese, 2 ounces processed cheese

The average daily consumption of milk substitutes by Americans (2+ y) is lower compared to milk consumed as a beverage

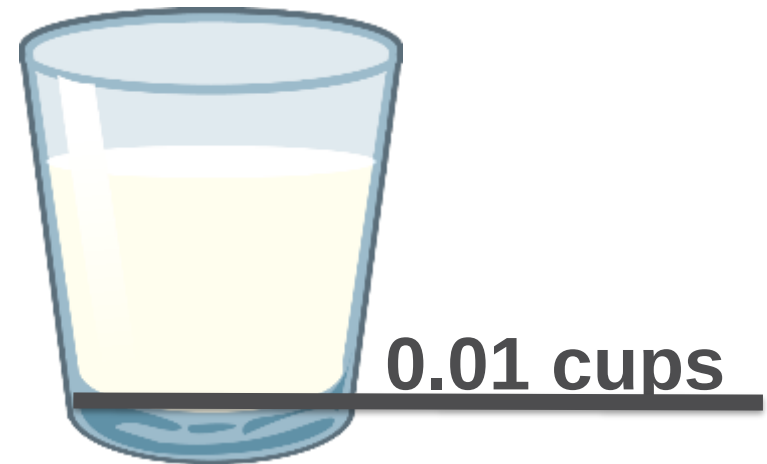
Fluid Milk

Whole, reduced fat, lowfat, nonfat, buttermilk, dry reconstituted, evaporated, lactose-free, kefir, goat's milk, & flavored milks (including sweetened condensed & hot cocoa).



Milk Substitutes

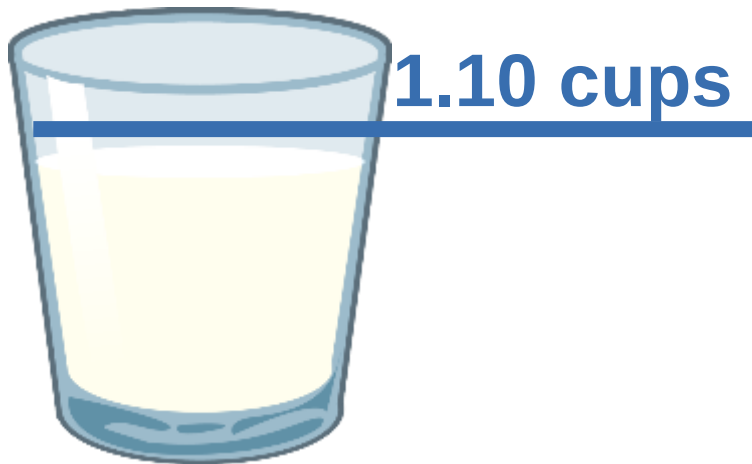
Includes: soy, almond, rice, and coconut beverages



The average daily consumption of milk substitutes by Americans (2-18 y) is lower compared to milk consumed as a beverage

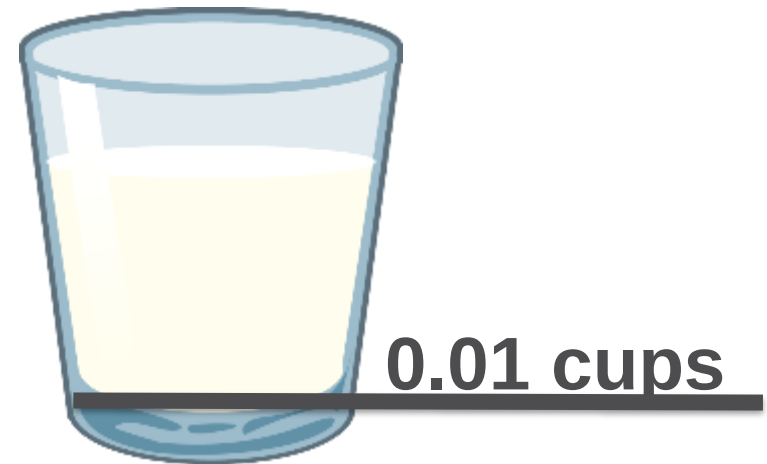
Fluid Milk

Whole, reduced fat, lowfat, nonfat, buttermilk, dry reconstituted, evaporated, lactose-free, kefir, goat's milk, & flavored milks (including sweetened condensed & hot cocoa).

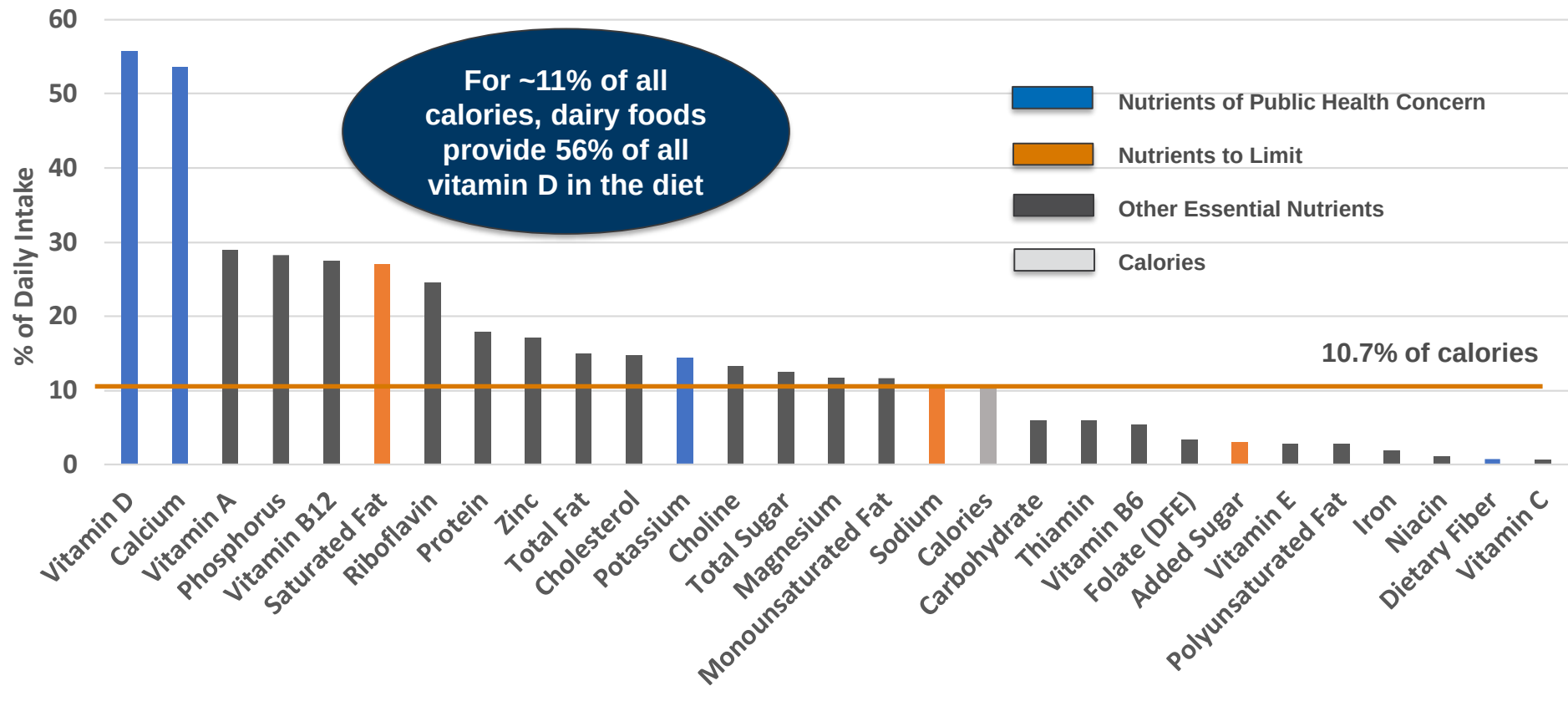


Milk Substitutes

Includes: soy, almond, rice, and coconut beverages



Dairy foods (milk, cheese & yogurt) provide substantial nutrition in the American diet (2+ years-old), even though people aren't eating recommended amounts



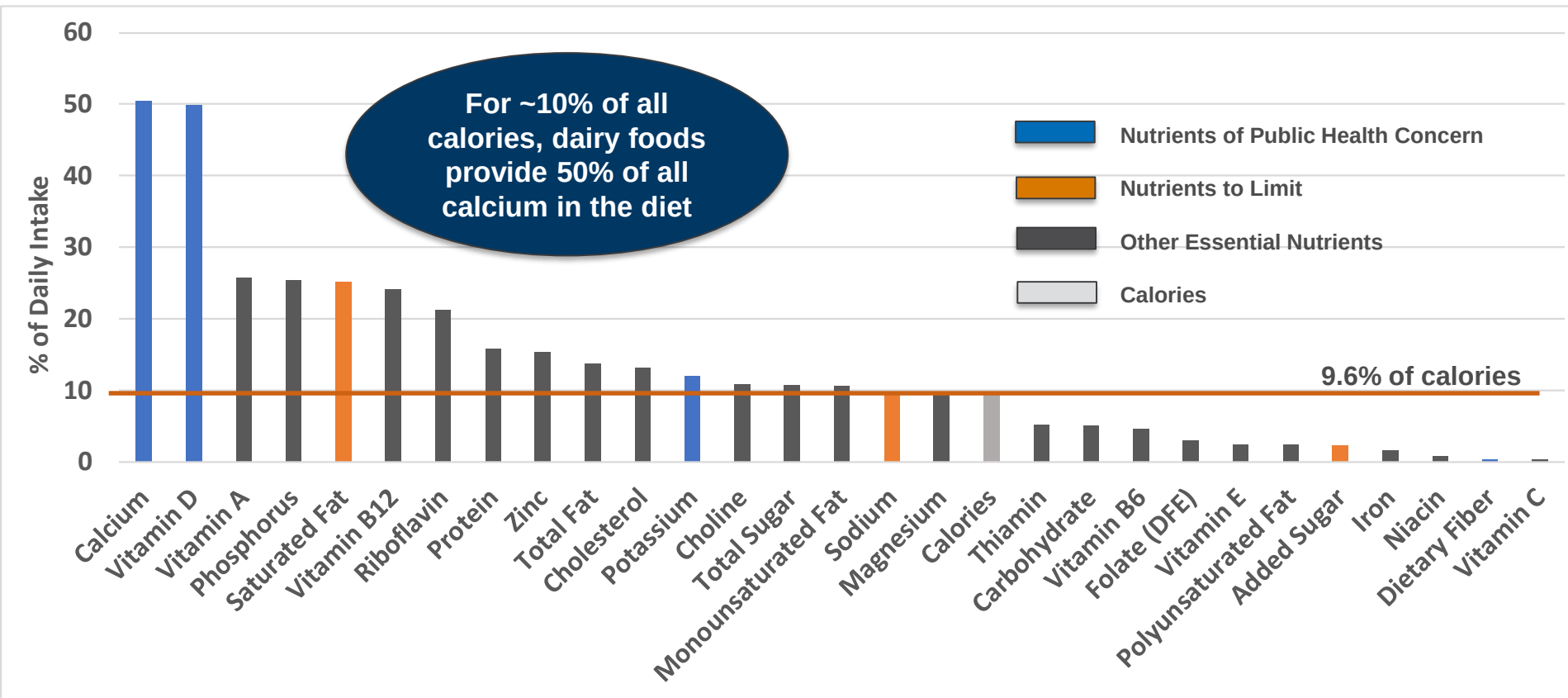
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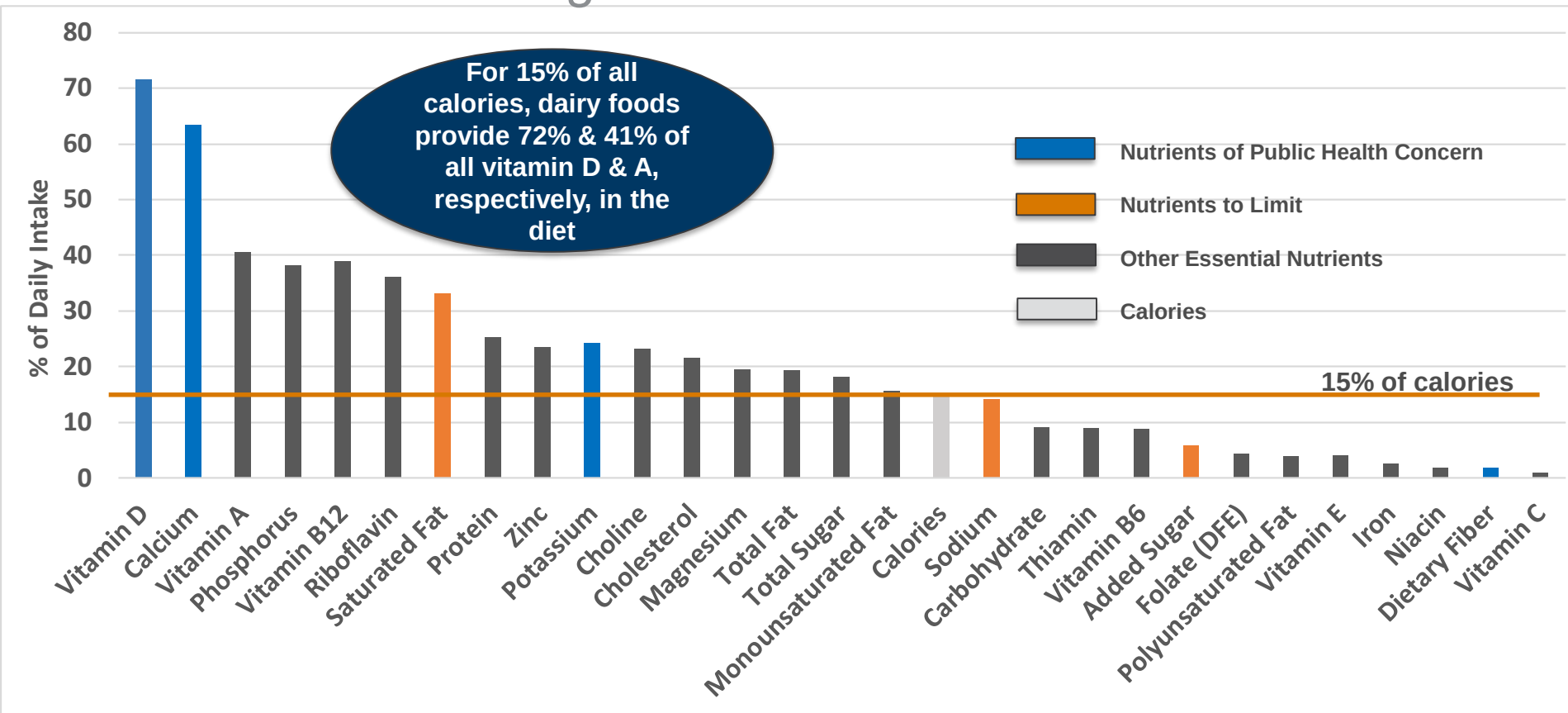
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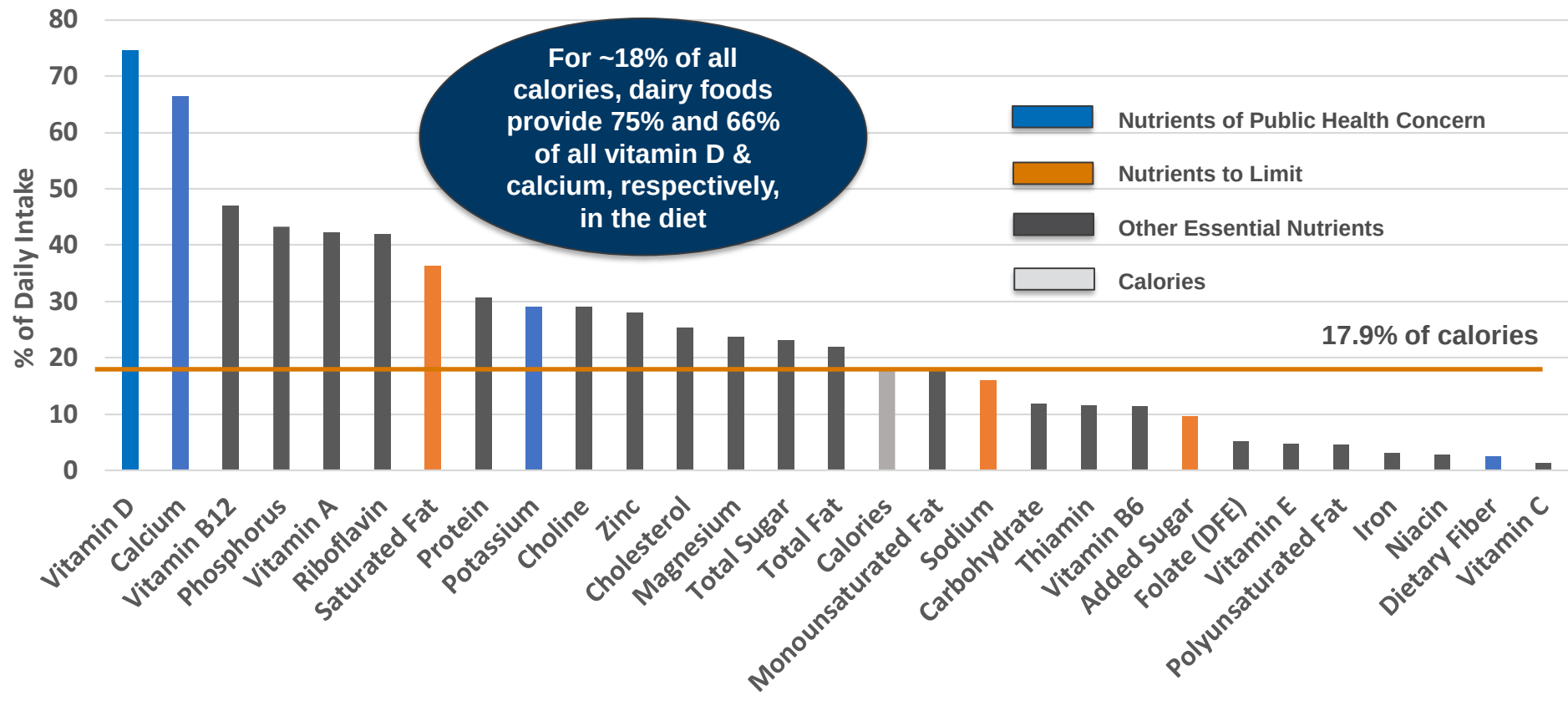
Dairy foods (milk, cheese & yogurt) provide substantial nutrition in the American diet (≥ 19 years-old), even though adults aren't eating recommended amounts



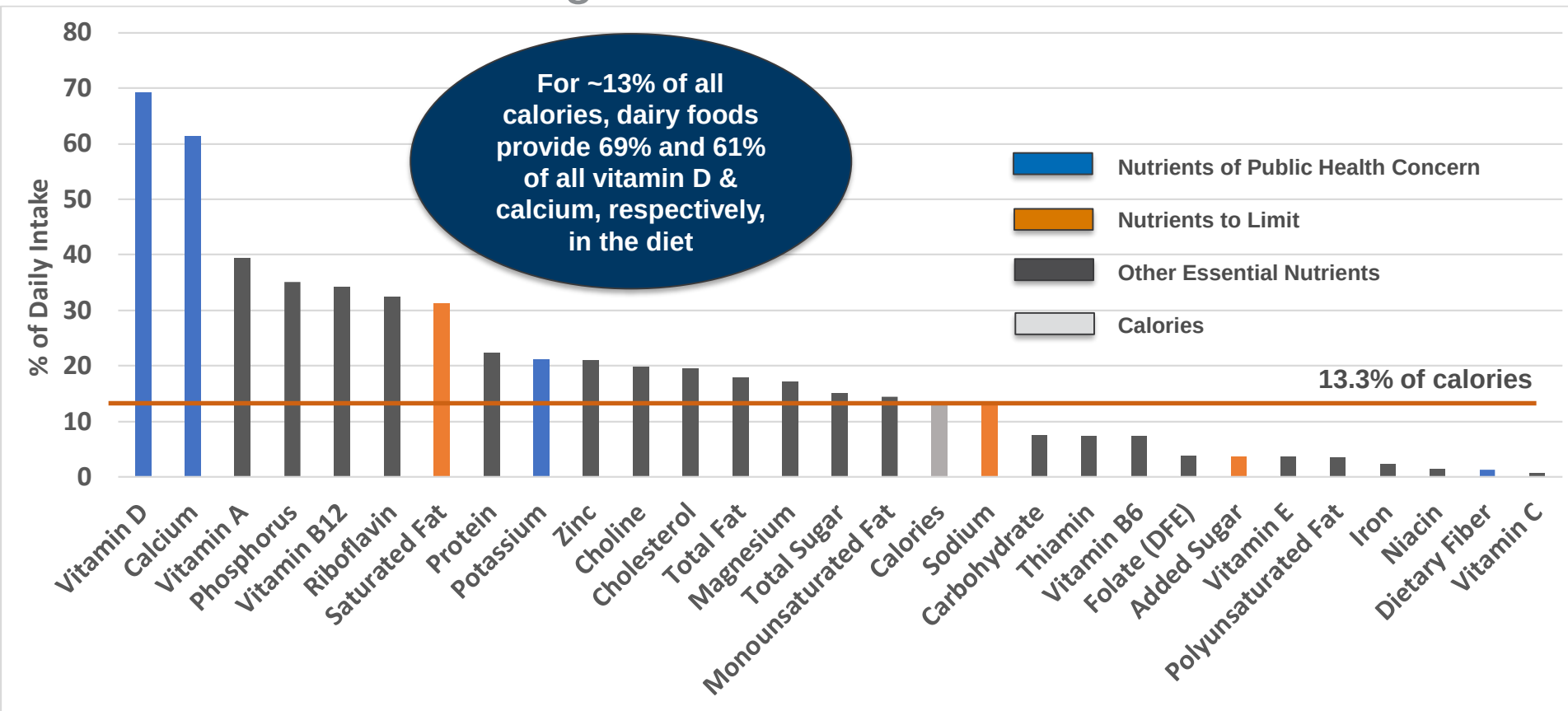
Dairy foods (milk, cheese & yogurt) provide substantial nutrition in the American diet (2-18 years-old), even though children aren't eating recommended amounts



Dairy foods (milk, cheese & yogurt) provide substantial nutrition in the American diet (2-8 years-old), even though children aren't eating recommended amounts



Dairy foods (milk, cheese & yogurt) provide substantial nutrition in the American diet (9-18 years-old), even though children aren't eating recommended amounts



Dairy foods provide a significant proportion of nutrients to the American diet

- On average, dairy foods (milk, cheese, and yogurt) contribute 54% of total daily calcium, 56% of vitamin D, and 14% of potassium in the total diet of Americans 2+ years-old
- Calcium, vitamin D, and potassium are three of the four nutrients of public health concern identified by DGA.¹
- Milk, cheese and yogurt contribute 18% of protein, 29% of vitamin A, 27% of vitamin B₁₂, 25% of riboflavin, 28% of phosphorus, 12% of magnesium, 17% of zinc, 27% of saturated fat, and 3% of added sugars to the diet of Americans 2+ years of age.



1. U.S. Department of Health and Human Services and U.S. Department of Agriculture. *2015-2020 Dietary Guidelines for Americans*. 8th Edition. December 2015. Available at <http://health.gov/dietaryguidelines/2015/guidelines/>.



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Dairy foods provide a significant proportion of nutrients to the diet of American children

For American children ages 2 to 18 years of age, on average, dairy foods (milk, cheese, and yogurt) contribute 63% of calcium, 72% of vitamin D, and 24% of potassium. These foods also contribute 25% of protein, 41% of vitamin A, 39% of vitamin B₁₂, 36% of riboflavin, 38% of phosphorus, 20% of magnesium, 24% of zinc, 33% of saturated fat, and 6% of added sugars to the diet of Americans 2-18 years of age.



Dairy foods (milk, cheese, and yogurt) contribute a significant proportion of potassium to the American diet

Milk is the #1 food source of calcium, vitamin D and potassium,^{1,2} all nutrients of concern in the diets of American children and adults.



On average, dairy foods (milk, cheese, yogurt) provide 14% of potassium to the diet of Americans aged 2+ years.

On average, dairy foods (milk, cheese, yogurt) provide 24% of potassium to the diet of American children aged 2-18 years.

1. Keast DR et al. Nutrients 2013; O'Neil CE et al. Nutrients 2012
2. Low-fat milk provides 366 mg potassium per cup (8% DV), USDA National Nutrient Database for Standard Reference Release 28, #01082



Nutrient-rich dairy foods (milk, cheese, and yogurt) contribute minimal amounts of added sugar to the average American diet

- Flavored milk contributes only 4 percent of added sugars to the diet of American children aged 2-18, on average.
- Soft drinks contribute 3.3 teaspoons of added sugar and flavored milk contributes 0.7 teaspoons of added sugar each day (American children 2-18 years).
- Sweetened beverages* account for 36% of American children's daily added sugar intake, while nutrient-rich flavored milk accounts for only 4%.
- On average, dairy foods (milk, cheese, and yogurt) contribute only 3% of added sugar to the diet of Americans (2+ years).



*Soft drinks, fruit drinks, sports and energy drinks, nutritional beverages



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Cheese contributes an average of 8% of sodium to the U.S. diet

- On average, cheese contributes 27% of calcium, 11% of vitamin A, 9% of vitamin D, 8% of protein, 7% of vitamin B12, 8% of zinc, and 6% of riboflavin (vitamin B2), 18% of saturated fat and 8% of sodium to the American diet (2+ years).
- On average, cheese contributes 26% of calcium, 12% of vitamin A, 8% of vitamin D, 9% of protein, 8% of vitamin B12, 9% of zinc, and 6% of riboflavin (vitamin B2), 19% of saturated fat and 9% of sodium to the diet of American children (2-18 years).

