

# Nutrition Labeling

Decoding the Common Sources of Confusion

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# Overview

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- Labeling & Caloric Reductions

**\* CP = Confusion Point \***

# Serving Sizes

# Serving Size (SS) on the Nutrition Facts Panel

- Declared as Common Household Measure & Metric quantity



- The FDA uses Reference Amount Customarily Consumed (RACC) as the basis for serving sizes
  - Updated & added to RACC in 2016
    - About 20% changed
    - **CP** – Cannot make up your own Serving Size without consulting the RACC.
  - Not required to match RACC exactly, but should be as close as possible
  - These are **NOT** Serving Size recommendations!
    - Based on what average Americans tend to eat today (derived from food consumption data).

# Common Household Measure & Metric Quantity

- FDA requires that Serving Size be displayed as both:
  1. Common Household Measure (CHM) as
    - *Standard* units (Tbsp, cup, fl oz, oz)
    - *Descriptive* units (Slice, piece, cookie)
  2. Metric weight (g) or volume (mL)



- The metric quantity should relate to the household measure and provide context & consistency!

# RACC Example

Product category	Reference amount	Label statement <sup>4</sup>
Cookies	30 g	_ piece(s) (_ g)
Crackers that are usually not used as snack, melba toast, hard bread sticks, ice cream cones <sup>8</sup>	15 g	_ piece(s) (_ g)
Crackers that are usually used as snacks	30 g	_ piece(s) (_ g)

- Label statements column is meant to provide examples of SS, but wording may be changed as appropriate
  - “Piece” is used as a generic description
  - Use the description of a unit that is most appropriate for specific product
- Most RACCs in ready-to-serve forms of food, but includes some dry/mix forms
  - CP** - For products needing further prep, SS = amount of unprepared product needed to make **1 serving** of the **finished** food
- Unprepared foods – SS should be prepared form & Nutrition Facts Panel would state “as consumed/prepared”



<b>Nutrition Facts</b>				
16 servings per container				
Serving size 1/16 of Package (28g Mix)				
Amount/serving	Mix	Prepared		
Calories	90	120		
	% DV*	% DV*		
<b>Total Fat</b>	1g	1%	4g	6%
Saturated Fat	<1g	2%	1g	4%
Trans Fat	0g		0g	
<b>Cholesterol</b>	15mg	5%	15mg	5%
<b>Sodium</b>	125mg	5%	125mg	5%
<b>Total Carb.</b>	22g	7%	22g	7%
Dietary Fiber	1g	4%	1g	4%
Total Sugars	0g		0g	
Incl. Added Sugars	0g	0%	0g	0%
Sugar Alcohol	10g		10g	
<b>Protein</b>	2g		2g	
Vitamin D	0mcg	0%	0mcg	0%
Calcium	30mg	3%	30mg	3%
Iron	1mg	8%	1mg	8%
Potassium	140mg	4%	140mg	4%

\* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

# Determining Serving Size from RACC

- Bulk products – household measure closest to the RACC




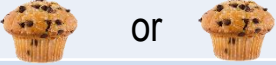


- Discrete large unit – fraction closest to RACC
  - 1/2, 1/3, 1/4, 1/5, and 1/6 (can divide by 2 or 3)
  - NEVER** use 1/7!!



- Discrete individual units:



RACC – 110g

Muffin Weight	% of RACC	Serving Size	# of Muffins
≤ 55g	Unit weight is ≤50%	Number of units closest to reference amount	
57g – 84g	Unit weight is >50% but <67%	Can choose 1 or 2 units	 or 
85g – 219g	Unit weight is >67% but <200%	Must be 1 unit	
220g+	<b>CP</b> - Unit weight is ≥200 up to 300%	Must be per serving & total package ( <b>Dual Column</b> )	One really big muffin!

# Determining Serving Size from RACC

- Units that vary in size (**CP**) – amount in **ounces** that most closely approximates the reference amount

Jerky Weight	% of RACC	Serving Size	# of Pieces
2g	Unit weight is $\leq 50\%$	Number of units closest to reference amount	15 pieces
17g	Unit weight is $> 50\%$ but $< 67\%$	Can choose 1 or 2 units	1 or 2 pieces
25g	Unit weight is $> 67\%$ but $< 200\%$	Must be 1 unit	1 piece
Varies (10g - 20g)	---	<b>Oz closest to reference amount (30g)</b>	<b>1 oz (28g)</b>



RACC – 30g

<b>Nutrition Facts</b>
About 2 servings per container
<b>Serving size</b> 1 oz (28g)



# Dual Column Requirements

- Required:
  - Units – weight is  $\geq 200$  up to 300%
  - Containers – product packaged & sold individually is  $\geq 200$  up to 300%

% of RACC	Serving Size	# of Muffins
Unit weight is $\geq 200$ up to 300%	Must be per serving & total package ( <b>Dual Column</b> )	One really big muffin!



- **CP** – Optional:
  - Single-serving containers  $\geq 150$  but  $< 200\%$

<b>Nutrition Facts</b>			
12 servings per container			
<b>Serving size</b>		<b>1/2 muffin (144g)</b>	
<b>Calories</b>	Per 1/2 muffin	Per 1 muffin	
	<b>380</b>	<b>760</b>	
	% DV*	% DV*	
<b>Total Fat</b>	16g <b>21%</b>	32g	<b>41%</b>
Saturated Fat	3g <b>15%</b>	6g	<b>30%</b>
Trans Fat	0g	0g	
<b>Cholesterol</b>	50mg <b>17%</b>	100mg	<b>33%</b>
<b>Sodium</b>	480mg <b>21%</b>	960mg	<b>42%</b>
<b>Total Carb.</b>	56g <b>20%</b>	112g	<b>41%</b>
Dietary Fiber	2g <b>7%</b>	4g	<b>14%</b>
Total Sugars	32g	64g	
Incl. Added Sugars	30g <b>60%</b>	60g	<b>120%</b>
<b>Protein</b>	3g	6g	
Vitamin D	0.1mcg 0%	0.2mcg	2%
Calcium	40mg 4%	80mg	6%
Iron	2mg 10%	4mg	20%
Potassium	190mg 4%	380mg	8%

\* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

# Dual Column Exceptions

- Dual Columns are not mandatory for the following products:
  - Products that meet requirements for tabular or linear label format
  - Raw fruits, vegetables, and seafood that provide voluntary labeling or advertising or when claims are made about the product
- Varied weight products – servings per container varies
- Products already bearing an additional column in the label
  - Additional column with “as prepared”
  - Additional column with “as packaged”
  - Products commonly consumed with another food & provide an additional column for the combination



<b>Nutrition Facts</b>	
About 2 servings per container	
<b>Serving size</b>	<b>1 oz (28g)</b>

<b>Nutrition Facts</b>		
12 servings per container		
<b>Serving size</b>	<b>1/4 cup dry mix (44g)</b>	
<b>Calories</b>	<b>Per 1/4 cup dry mix</b> <b>170</b>	<b>Per baked portion</b> <b>300</b>

<b>Nutrition Facts</b>		
About 18 servings per container		
<b>Serving size</b>	<b>1 cup (41g)</b>	
<b>Calories</b>	<b>Cinnamon Toast Crunch</b> <b>170</b>	<b>with 1/2 cup skim milk</b> <b>220</b>

# Standard vs Descriptive – When to Use

- Use *Standard* units wherever possible & appropriate (except beverages)
  - Cups – 1/4 cup or 1/3 cup increments
  - Tbsp – 1, 1 1/3, 1 1/2, 1 2/3, 2, or 3 tablespoons
  - Tsp – 1/8, 1/4, 1/2, 3/4, 1, or 2 teaspoons
  - If above not applicable, use *descriptive* units
    - Piece, slice, tray, jar, etc.
- Single serving containers – *descriptive* units of the container or package
  - Can, bottle, box, pouch, etc.
- Beverages – g/fl oz
  - 12 fl oz (360 mL) or 1 cup (240 mL) or 8 fl oz (240 mL)
- Composite foods – composite weight + backslash + *descriptive* units in parentheses
  - Macaroni & cheese
  - 4 oz (112 g/about 2/3 cup macaroni and 2 tbsp dry cheese mix)
- Other (non-applicable to the above) – weight in oz with a visual reference
  - 1 oz (28 g/1/2 pickle)

# Servings per Container

- **CP** – Whenever rounding SPC, use the term ‘about’
- Round to the nearest whole number
  - Except between 2 and 5
  - **CP** – Cannot use 0.5 increments on any other SPCs!
- ‘Varied’ can be used for random weight products that vary in size

Nutrition Facts	
12 servings per container	
Serving size	2 slices (43g)

Nutrition Facts	
about 3.5 servings per container	
Serving size	3 cookies (30g)

Nutrition Facts	
varied servings per container	
Serving size	1 oz (28g)

SPC < 2	
0.5 – 1.49	1
1.5 – 2.24	2
SPC = 2-5 (can use 0.5 increments)	
2.25 – 2.74	2.5
2.75 – 3.24	3
3.25 – 3.74	3.5
3.75 – 4.24	4
4.25 – 4.74	4.5
4.75 – 4.99	5
SPC > 5	
5.0 – 5.49	5
5.50 – 6.0	6
Etc.	Etc.

# Sugar Alcohols

# What Are Sugar Alcohols?

- Carbohydrates that chemically have characteristics of both sugars and alcohols
  - Do not contain the type of alcohol found in alcoholic beverages
- Found naturally in small amounts in a large variety of fruits & vegetables
  - Aronia berries – sorbitol
- Commercially produced from sugars and starch
- **CP** – Only partially digested by the body, contributing to a lower caloric value

Sugar Alcohols
Erythritol
Glycerol
Isomalt
Lactitol
Maltitol
Mannitol
Sorbitol
Xylitol
HSH (Hydrogenated Starch Hydrolysates)

# Common Matrices & Functions



- Baked goods
  - Cakes, cookies, pies
- Chewing gum
- Desserts
  - Ice cream, pudding
- Jams & jellies
- Frosting
- Candies



- Add bulk and texture
- Sustain moisture and impede browning during baking
- Produce cooling sensation in the mouth when added to foods in high concentrations
- Do not react with plaque bacteria, so do not cause cavities
- Support Sugar Free claims & less calories
  - **CP** – are STILL carbohydrates & should be reflected as such in the Facts Panel

# Labeling of Sugar Alcohols

- Must be declared on NFP if a statement (claim) is made about health effects
  - ‘No Sugar Added’ or ‘Sugar-free’
- **CP** – Recommend Sugar Alcohol profile in tandem with standard sugar profile
  - ELSD (‘universal’) detector used
    - Potential to interfere with sugar peaks

Sugar Alcohol	Sugar Interference
Maltitol	Maltose
Lactitol	Lactose
Xylitol	Fructose
Mannitol & Sorbitol	Glucose

- Standard caloric contribution of ‘normal’ carbohydrates is 4 kcal/g

<b>Total Carbohydrate</b> 46g	<b>17%</b>
Dietary Fiber 7g	<b>25%</b>
Total Sugars 4g	
Includes 2g Added Sugars	<b>4%</b>
Sugar Alcohol 0g	
<b>Protein</b> 11g	

Sugar Alcohols	Caloric Contribution (kcal/g)
<b>Carbohydrates</b>	<b>4</b>
Isomalt, Lactitol	2
Xylitol	2.4
Maltitol	2.1
Sorbitol	2.6
Mannitol	1.6
Erythritol	0
HSH (Hydrogenated starch hydrolysates)	3



# Dietary Fiber

# Dietary Fiber – 2016 Definition

1. Non-digestible soluble and insoluble carbohydrates (with 3 or more monomeric units), and lignin that are **intrinsic** and **intact** in plants



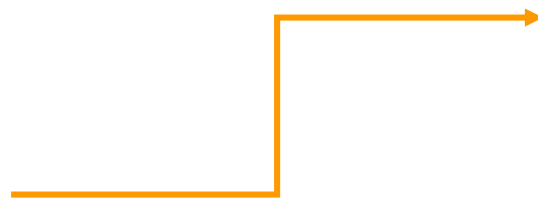
2. **Isolated** or synthetic non-digestible carbohydrates (with 3 or more monomeric units) determined by FDA to have beneficial physiological effects.
  - **CP** – Isolated = fibers that are crystallized, concentrated, solvent extracted, etc.
    - Fibers that are not natural in form/processed.
  - **CP** – Those that are not listed in the CFR or those for which the FDA has not announced enforcement discretion are NOT dietary fiber.

# Official List of ‘Approved’ Fibers

- May 2016 – FDA final rule includes definition of Dietary Fiber for U.S. nutrition labeling purposes and includes list of isolated or synthetic carbohydrates that meet the definition
- June 2018 – Additional fibers added to list
  - **CP** – the final rule has not been amended to include these, but they can be labeled as fiber per FDA.
- 2019 & 2020 – Two more additions to the list.

2016 List	Added in 2018	Added in 2019	Added in 2020
Beta-Glucan	Arabinoxylan	Cross-linked phosphorylated RS4	Glucomannan
Cellulose	Alginate		
Guar Gum	Galactooligosaccharides (GOS)		
Hydroxypropylmethylcellulose	High Amylose Starch (RS2)		
Locust Bean Gum	Inulin & Inulin-type Fructans		
Pectin	<b>CP – Mixed Plant Cell Wall Fibers</b>		
Psyllium Husk	Polydextrose		
	Resistant Maltodextrin/Dextrin		

# Caloric Contributions of Fiber

- Fiber is a carb, which contributes to Calories
  - $\text{Calories} = 4(\text{protein}) + 9(\text{fat}) + 4(\text{carbs})$
  - Standard caloric contribution of 'normal' carbohydrates is 4 kcal/g
- Eligible for reduced calorie factor 
  - 2018 – FDA proposed 1 kcal/g for polydextrose
  - **CP** – We MUST have the insoluble/soluble breakdown to apply reduced Calorie calculations.

	Soluble	Insoluble
Beneficial	2 kcal/g	0 kcal/g
Non-beneficial	0 kcal/g Subtract from Total Fiber	0 kcal/g Subtract from Total Fiber

# Questions?

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