Breakfast of Champions?

Introduction

If you haven't guessed already, our new project revolves around breakfast foods. Our task is to fashion an information graphic that addresses the relative nutritional merits of a range of foods for which we'll receive data. We expand the first project's univariate information to tell the "story" of these foods.

These graphics should tell their story *visually* more than *textually* and may take any form *except* a table, charticle, or a pie chart. It should use typography, color, scale, position, iconography, and the representation of two- and three-dimensional forms to to develop an information hierarchy, construct a visual framing metaphor, and contribute to the viewer's understanding of the content.

Design Process

Evaluating the Data Data are just *facts* until they're presented in relation to each other — only then do they become *information*. We need to assess whether relationships can be demonstrated between the facts we encounter in the data set. Are all the categories (e.g., folic acid) represented across all the breakfast foods? Do they need to be? Which factors can we — must we — use to compare the foods' nutritional merits? We need to look for parallels in the facts presented. Our graphics will only be as good as our assessment of the data's relevance.

FastCo recently posted a relevant article, "Are We Designing Nutrition Labels All Wrong?" (*goo.gl/dg917v*), which may help frame some of these questions.

Choosing an Audience In every form communication, knowing what we want to say is merely one step in crafting and sending a message. Understanding our audience is every bit as important: this knowledge is central to ensuring our messages are comprehended. With that in mind, our next task is to select a target audience for each of our infographics. Our selections can be generic — *children, adults, calorie counters* — or specific — *middle-aged women with hypertension, twenty-something kettlebell trainers*. However, we should use our sense of our audiences to shape the categories of information we present *and* the way we frame it.

Take some time to get to know your audience, their interests, biases, fears, likely educational levels. *Everything* is worth questioning when it comes to research — content and audience alike.

Selecting Nutrients The data collected here contains many categories of information: calories, fats, carbohydrates, fiber, vitamins, etc. Representing it all would be overload, both for us and our audiences, so we need to select a handful of categories — kinds of facts — around which to build our graphics.

Select **FIVE** nutrients to include in our designs. Be sure to include data from all twelve food items in your pair of infographics. You may add information (e.g., glycemic indexes) or foods, but not change the data you've received or omit foods.

Considering the Design's Format While the table you've been provided aims to be largely informative, the design you create can, and should, be more expressive and entertaining. What sort of infographic best represents the kind of *information* we want to present? What format frames the

Questions to Consider

- *Which breakfast is most nutritious? Least? Which factors — calories, fat, carbs, sodium, etc. — influence our interpretation? (See the "Choosing an Audience" section for some guidance.)*
- *What changes to the nutritional info are needed to make it useful?* (HINT: *Some are necessary.*)
- *Which factors are most important to highlight?*
- *Which are most interesting? Which might make for an interesting "story"?*
- *What patterns can we observe, and how can we express them visually?*

kind of *narrative* we want to shape? Check out the gallery of infographic types on page 3, as well as the brief glossary, to help inform your choices.

Creating an Informative Space and Visual Metaphor These graphics rely heavily on design elements (preattentive attributes) such as location, form, and color as keys to meaning. We should choose elements and their uses based on what they contribute to the narrative. What might the volume of a visual element, its color, or its position tell us about that fact or category of facts? We might imagine that vitamin C is yellow, but what color is potassium? How do we know — or how can we ensure — the audience will register the meaning of these respective colors?

Likewise, what kinds of visual metaphors or framing devices might deepen the audience's understanding of our information? How much metaphor is enough? What choices about metaphor and framing will contribute to our message and what choices might detract from it?

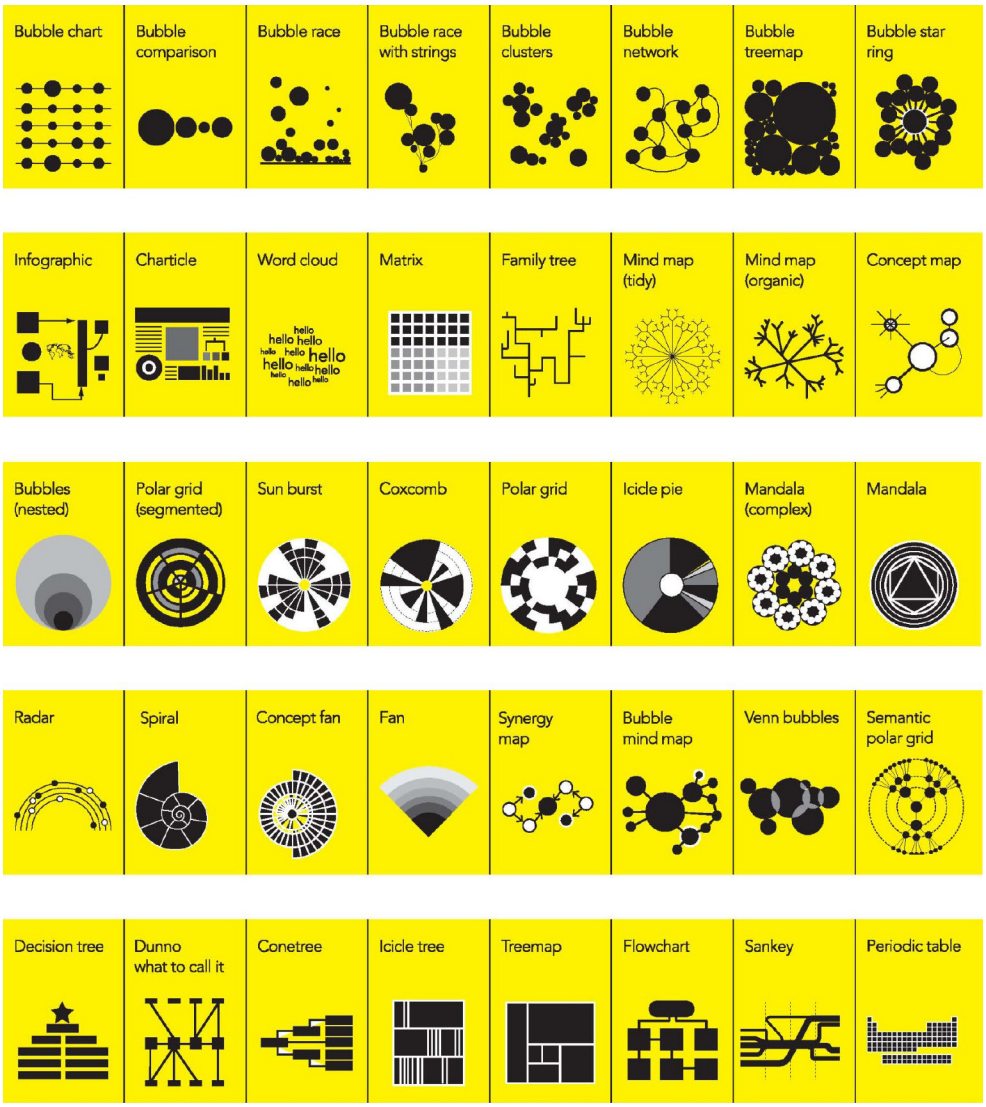
Timeline & Products

- **01 June • Concepts and Hand Sketches** Determine which facts to include in your graphics and identify a target audience to address. Present these choices and a minimum of **THREE** different directions/concepts for each information graphic. Preliminary sketches should be pencil or ink hand renderings only. Each sketch should be on a separate sheet. Minimum sheet size is 11 × 17." Mounting isn't required, but may be useful for large drawings.
- **06 June • Second-round Sketches** Present and discuss second round of sketches. This round may be either digital or analog. Digital sketches may be presented as prints or via projection. (NOTE: Save file as pdf first, with one sketch per page.) Minimum print size is 11 × 17."
- **08 June • Comp Layouts** Mock-up your designs digitally, including all informational and visual elements. Comps may be presented as physical objects or projected digitally as pdfs.
- **13 June • Final Layouts** I recommend printing physical copies of these designs, especially if they require multiple pages/panels. Size and proportions will vary. Please provide written comments that describe the factors that influenced your choice of design elements and your decisions regarding audiences, metaphors/framing devices, etc. Submit files via e-mail or file transfer. *Please name files following the usual pattern*: firstinitial+lastname-project#.extension. (Example: *hsimpson-project2.pdf*).

Types of Information Visualization

Deciding which form of information graphic best communicates the information or perspective we have in mind can be like choosing one ice cream from a menu of dozens of flavors. We might already have favorites, but we're bound to wonder if a new fave awaits — or hides in plain sight.

We've only begun to explore the many kinds of infographics available to us, which means our options may not be obvious. The matrix and text below offer a quick-and-dirty survey of common formats for presenting information. We've already seen many of the examples below in class, and others will undoubtedly look familiar. Each is useful for some sort of project. We can treat this graphic as a menu from which to order our designs.



(From *visual-literacy.org*)

Notes on Kinds of Infographics

- **Bar chart** A bar chart uses either horizontal or vertical bars to show comparisons among categories. One axis of the chart shows the specific categories being compared, and the other axis represents a discrete value. Some bar graphs present bars clustered in groups of more than one (grouped bar graphs), and others show the bars divided into subparts to show cumulative effect (stacked bar graphs).

- **Bubble chart** A type of chart that displays three dimensions of data. Each entity is plotted as a disk that expresses value through the disk's horizontal location, a second through its vertical location, and the third through its size. Bubble charts can facilitate the understanding of social, economical, medical, and other scientific relationships.
- **Icicle diagram** A kind of "adjacency diagram" in which nodes are drawn as solid areas (either arcs or bars), and their placement relative to adjacent nodes reveals their position in the hierarchy. Icicle diagrams often resemble mobiles, in that the root node appears at the top, with child nodes underneath.
- **Sankey diagram** A type of flow diagram in which the width of the arrows is shown proportionally to the flow quantity. Sankey diagrams place visual emphasis on the major transfers or flows within a system. They're helpful in locating dominant contributions to an overall flow.
- **Sunburst chart** Also known as a **ring chart** or a **multilevel pie chart**, a sunburst chart visualizes hierarchical data depicted by concentric circles. The circle in the center represents the root node, with the hierarchy moving outward from the center. Each segment ("wedge") of the inner circle bears a hierarchical relationship to those segments of the outer circle which lie within the angular sweep of the parent segment.
- **Treemap** Treemaps display hierarchical (tree-structured) data as a set of nested rectangles. Each branch of the tree is assigned a rectangle, which is then tiled with smaller rectangles representing sub-branches. The area of each rectangle (or *leaf node*) is proportional to a specified dimension on the data. Leaf nodes are often colored to show a separate dimension of the data. Also called **enclosure diagrams**.

Finally, several faculty at Stanford offer a compact and comprehensive discussion of how some of these formats work at their *A Tour Through the Visualization Zoo* (*homes.cs.washington.edu/~jheer/files/zoo*). The visuals are worth a click.

Project 2 — Nutrition Facts

Item	Bacon Egg and Cheese Sandwich		Cap'n Crunch, Peanut Butter		Cranberry Orange Muffin		Frosted Flakes		Grape Nuts		Greek Yogurt, Plain		Leftover Pizza		Pop Tarts, Frosted B. Sugar		Raisin Bran		Scrambled Eggs		Sliced Fish Congee		Swiss Müesli	
Serving Size	1 sandwich		0.75 cup (27g)		1 muffin (110g)		0.75 cup (30g)		0.5 cup (58g)		5.3oz (150g)		1 Lg slice (130g)		1 pastry (50g)		1 cup (59g)		2 eggs (132g)		1 bowl (559g)		0.58 cup (50g)	
Total Calories	**470 (? cal/g)**		**112 (4.15 cal/g)**		**410 (3.73 cal/g)**		**110 (3.67 cal/g)**		**210 (3.62 cal/g)**		**80 (0.53 cal/g)**		**320 (2.46 cal/g)**		**211 (4.22 cal/g)**		**190 (3.22 cal/g)**		**204 (1.57 cal/g)**		**211 (0.38 cal/g)**		**170 (3.68 cal/g)**	
Calories from fat	110		23		180		1		10		0		120		67		10		134		27		22	
	AMOUNT/SERVING	%DV	AMOUNT/SERVING	%DV	AMOUNT/SERVING	%DV	AMOUNT/SERVING	%DV	AMOUNT/SERVING	%DV	AMOUNT/SERVING	%DV	AMOUNT/SERVING	%DV	AMOUNT/SERVING	%DV	AMOUNT/SERVING	%DV	AMOUNT/SERVING	%DV	AMOUNT/SERVING	%DV	AMOUNT/SERVING	%DV
Total Fat	**12g***	**18%**	**2g***	**4%**	**20g***	**31%**	**0.5g**	**0%**	**1g***	**2%**	**0g***	**0%**	**13g***	**20%**	**7g***	**11%**	**1g***	**2%**	**14g***	**14%**	**3g***	**5%**	**2.5g***	**4%**
Saturated fat	5g	25%	1g	5%	4g	20%	0.1g	0%	0g	0%	0g	0%	5g	25%	1g	6%	0g	0%	4g	22%	0g	0%	0.5g	2%
Polyunsaturated fat	0g		0g		0g		0.2g		0g		0g		0g		0g		0g		0g		0g		0g	
Monounaturated fat							0.1g		0.5g								0g							
Trans fat							0g		0g								0g							
Cholesterol	80mg	27%	0mg	0%	70mg	23%	0mg	0%	0mg	0%	<5mg	1%	25mg	8%	0mg	0%	0mg	0%	434mg	144%	22mg	7%	0mg	0%
Sodium	1140mg	48%	200mg	8%	400mg	17%	140mg	5%	270mg	11%	60mg	3%	840mg	35%	184mg	8%	230mg	10%	342mg	14%	1347mg	56%	115mg	4%
Potassium							23mg	0%	230mg	7%	230mg	7%					310mg	9%	0mg	0%	0mg	0%	230mg	7%
Total Carbohydrate	**67g**	**22%**	**21g**	**7%**	**53g**	**18%**	**27g**	**9%**	**47g**	**16%**	**6g**	**2%**	**37g**	**12%**	**34g**	**16%**	**47g**	**16%**	**0g**	**0%**	**32g**	**11%**	**39g**	**13%**
Dietary fiber	4g	16%	1g	3%	2g	8%	0.7g	2%	7g	28%	0g	0%	2g	8%	1g	3%	8g	32%	0g	0%	0g	0%	4g	18%
Soluble fiber									1g								<1g							
Insoluble fiber									6g								19g							
Sugars	7g		9g		31g		11g		5g		6g		4g		15g		20g		0g		0g		15g	
Other carbohydrate									35g															
Protein	**23g**		**2g**		**5g**		**1.2g**	**2%**	**6g**	**14%**	**15g**		**12g**		**3g**		**5g**		**12g**		**14g**		**5g**	

Vitamin A	4%	Vitamin A	1%	Vitamin A	4%	Vitamin A	9%	Vitamin A	0%	Vitamin A	0%	Vitamin A	4%	Vitamin A	10%	Vitamin A	15%	Vitamin A	12%	Vitamin A	0%	Vitamin A	5%
Vitamin C	0%	Vitamin C	0%	Vitamin C	4%	Vitamin C	12%	Vitamin C	0%	Vitamin C	0%	Vitamin C	6%	Vitamin C	0%	Vitamin C	0%	Vitamin C	0%	Vitamin C	0%	Vitamin C	0%
Calcium	10%	Calcium	0%	Calcium	0%	Calcium	0%	Calcium	2%	Calcium	20%	Calcium	15%	Calcium	1%	Calcium	2%	Calcium	8%	Calcium	0%	Calcium	2%
Iron	20%	Iron	28%	Iron	10%	Iron	44%	Iron	90%	Iron	0%	Iron	15%	Iron	10%	Iron	60%	Iron	8%	Iron	0%	Iron	24%
						Vitamin D	14%	Vitamin D	0%	Thiamin	6%					Vitamin D	10%						
						Vitamin B6	55%	Thiamin	25%	Riboflavin	20%					Thiamin	25%						
						Vitamin B12	40%	Riboflavin	4%	Vitamin B6	2%					Riboflavin	25%						
						Magnesium	0%	Niacin	25%	Vitamin B12	15%					Niacin	25%						
								Vitamin B6	25%	Pantothenic acid	8%					Vitamin B6	25%						
								Folic acid	50%	Phosphorous	20%					Folic acid	50%						
								Vitamin B12	0%	Magnesium	4%					Vitamin B12	25%						
								Pantothenate	2%							Phosphorus	20%						
								Phosphorus	20%							Magnesium	25%						
								Magnesium	20%							Zinc	15%						
								Zinc	8%							Copper	10%						
								Copper	10%														

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Bacon, Egg, & Cheese on English Muffin (Dunkin' Donuts)

dunkindonuts.com/content/dunkindonuts/en/menu/food/sandwiches/breakfastsandwiches/bacon_egg_cheese.html?DRP_CARRIER=English%20Muffin&DRP_EGG=Egg&DRP_MEAT=Bacon

Serving Size: 1 sandwich

Amount Per Serving

Calories	470
Calories from Fat	110
	% Daily Value**
Total Fat 12g*	18%
Saturated Fat 5g	25%
Trans Fat 0g	
Cholesterol 80mg	27%
Sodium 1140mg	48%
Total Carbohydrate 67g	22%
Dietary Fiber 4g	16%
Sugars 7g	
Protein 23g	
Vitamin A	4%
Vitamin C	0%
Calcium	10%
Iron	20%

2/12 Cap'n Crunch's Peanut Butter Crunch (Quaker)

nutritiondata.self.com/facts/breakfast-cereals/1521/2

Serving Size: 0.75 cup (27g)

Amount Per Serving

Calories	112
Calories from Fat	23
	% Daily Value**
Total Fat 2g*	4%
Saturated Fat 1g	5%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 200mg	8%
Total Carbohydrate 21g	7%
Dietary Fiber 1g	3%
Sugars 9g	
Protein 2g	
Vitamin A	1%
Vitamin C	0%
Calcium	0%
Iron	28%

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Cranberry Orange Muffin (Starbucks)

nutritiondata.self.com/facts/foods-from-starbucks/9728/2

Serving Size: 1 muffin (110g)

Amount Per Serving

Calories	410
Calories from Fat	180
	% Daily Value**
Total Fat 20g*	31%
Saturated Fat 4g	20%
Trans Fat 0g	
Cholesterol 70mg	23%
Sodium 400mg	17%
Total Carbohydrate 53g	18%
Dietary Fiber 2g	8%
Sugars 31g	
Protein 5g	
Vitamin A	4%
Vitamin C	4%
Calcium	0%
Iron	10%

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Frosted Flakes (Kellogg)

nutritiondata.self.com/facts/breakfast-cereals/1555/2

Serving Size: 0.75 cup (30 g)

Amount Per Serving

Calories	110
Calories from Fat	1
	% Daily Value**
Total Fat 0.5 g	0%
Saturated fat 0.1 g	0%
Polyunsaturated fat 0.2 g	
Monounsaturated fat 0.1 g	
Trans fat 0 g	
Cholesterol 0 mg	0%
Sodium 140 mg	5%
Potassium 23 mg	0%
Total Carbohydrate 27 g	9%
Dietary fiber 0.7 g	2%
Sugar 11 g	
Protein 1.2 g	2%
Vitamin A	9%
Vitamin C	12%
Calcium	0%
Iron	44%
Vitamin D	14%
Vitamin B-6	55%
Vitamin B-12	40%
Magnesium	0%

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Grape Nuts (Post)

nutritiondata.self.com/facts/breakfast-cereals/7276/2

Serving Size: 0.5 cup (58 g)

Amount Per Serving	Cereal	Cereal with 1/2 cup Fat Free Milk
Calories	210	250
Calories from Fat	10	10
		% Daily Value**
Total Fat 1g*	2%	2%
Saturated Fat 0g	0%	0%
Trans Fat 0g		
Polyunsaturated Fat 0.5g		
Monounsaturated Fat 0g		
Cholesterol 0mg	0%	0%
Sodium 270mg	11%	14%
Potassium 230mg	7%	12%
Total Carbohydrate 47g	16%	18%
Dietary Fiber 7g	28%	28%
Soluble Fiber 1g		
Insoluble Fiber 6g		
Sugars 5g		
Other Carbohydrate 35g		
Protein 6g	6%	14%
Vitamin A	0%	4%
Vitamin C	0%	0%
Calcium	2%	15%
Iron	90%	90%
Vitamin D	0%	15%
Thiamin	25%	30%
Riboflavin	4%	15%
Niacin	25%	25%
Vitamin B6	25%	25%
Folic Acid	50%	50%
Vitamin B12	0%	8%
Pantothenate	2%	6%
Phosphorus	20%	30%
Magnesium	20%	25%
Zinc	8%	10%
Copper	10%	10%

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Greek Yogurt, Plain Organic Nonfat (Stonyfield)

stonyfield.com/products/yogurt/greek/plain

Serving Size: 5.3oz (150g)

Amount Per Serving

Calories	80
Calories from Fat	0
	% Daily Value**
Total Fat 0g*	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol <5mg	1%
Sodium 60mg	3%
Potassium 230mg	7%
Total Carbohydrate 6g	2%
Dietary Fiber 0g	0%
Sugars 6g	
Protein 15g	
Vitamin A	0%
Vitamin C	0%
Calcium	20%
Iron	0%
Thiamin	6%
Riboflavin	20%
Vitamin B6	2%
Vitamin B12	15%
Pantothenic Acid	8%
Phosphorous	20%
Magnesium	4%

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nutritiondata.self.com/facts/foods-from-papa-johns/8244/2

Serving Size: 1 slice from large pizza (130g)

Amount Per Serving

Calories	320
Calories from Fat	120
	% Daily Value**
Total Fat 13g*	20%
Saturated Fat 5g	25%
Trans Fat 0g	
Cholesterol 25mg	8%
Sodium 840mg	35%
Total Carbohydrate 37g	12%
Dietary Fiber 2g	8%
Sugars 4g	
Protein 12g	
Vitamin A	4%
Vitamin C	6%
Calcium	15%
Iron	15%

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Pop Tarts, Frosted Brown Sugar Cinnamon (Kellogg)

nutritiondata.self.com/facts/baked-products/5194/2

Serving Size: 1 pastry (50g)

Amount Per Serving

Calories	211
Calories from Fat	67
	% Daily Value**
Total Fat 7g*	11%
Saturated Fat 1g	6%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 184mg	8%
Total Carbohydrate 34g	11%
Dietary Fiber 1g	3%
Sugars 15g	
Protein 3g	
Vitamin A	10%
Vitamin C	0%
Calcium	1%
Iron	10%

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Raisin Bran (Kellogg)

nutritiondata.self.com/facts/breakfast-cereals/7280/2

Serving Size: 1 cup (59 g)

Amount Per Serving	Cereal	Cereal with 1/2 cup Fat Free Milk
Calories	190	230
Calories from Fat	10	10
		% Daily Value**
Total Fat 1g*	2%	2%
Saturated Fat 0g	0%	0%
Trans Fat 0g		
Polyunsaturated Fat 0g		
Monounsaturated Fat 0g		
Cholesterol 0mg	0%	0%
Sodium 230mg	10%	13%
Potassium 310mg	9%	15%
Total Carbohydrate 47g	16%	18%
Dietary Fiber 8g	32%	32%
Soluble Fiber <1g		
Sugars 19g		
Other Carbohydrate 20g		
Protein 5g		
Vitamin A	15%	20%
Vitamin C	0%	0%
Calcium	2%	15%
Iron	60%	60%
Vitamin D	10%	25%
Thiamin	25%	30%
Riboflavin	25%	35%
Niacin	25%	25%
Vitamin B6	25%	25%
Folic Acid	50%	50%
Vitamin B12	25%	35%
Phosphorus	20%	30%
Magnesium	25%	30%
Zinc	15%	20%
Copper	10%	10%

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Scrambled Eggs

nutritiondata.self.com/facts/dairy-and-egg-products/120/2

Serving Size: 2 eggs (132g)

Amount Per Serving

Calories	204
Calories from Fat	134
	% Daily Value**
Total Fat 14g*	22%
Saturated Fat 4g	22%
Trans Fat 0g	
Cholesterol 434mg	144%
Sodium 342mg	14%
Potassium 0mg	0%
Total Carbohydrate 0g	0%
Dietary Fiber 0g	0%
Sugars 0g	
Protein 12g	
Vitamin A	12%
Vitamin C	0%
Calcium	8%
Iron	8%

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Sliced Fish Congee

caloriecount.com/calories-fish-congee-i331538

Serving Size: 1 bowl (559g)

Amount Per Serving

Calories	211
Calories from Fat	27
	% Daily Value**
Total Fat 3g*	5%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 22mg	7%
Sodium 1347mg	56%
Potassium 0mg	0%
Total Carbohydrate 32g	11%
Dietary Fiber 0g	0%
Sugars 0g	
Protein 14g	
Vitamin A	0%
Vitamin C	0%
Calcium	0%
Iron	0%

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Swiss Müesli (Familia)

nutritiondata.self.com/facts/breakfast-cereals/7540/2

Serving Size: 0.58 cup, dry (50g)

Amount Per Serving

Calories	170
Calories from Fat	22
	% Daily Value**
Total Fat 2.5g*	4%
Saturated Fat 0.5g	2%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 115mg	4%
Potassium 230mg	7%
Total Carbohydrate 39g	13%
Dietary Fiber 4g	18%
Sugars 15g	
Protein 5g	
Vitamin A	5%
Vitamin C	0%
Calcium	0%
Iron	24%