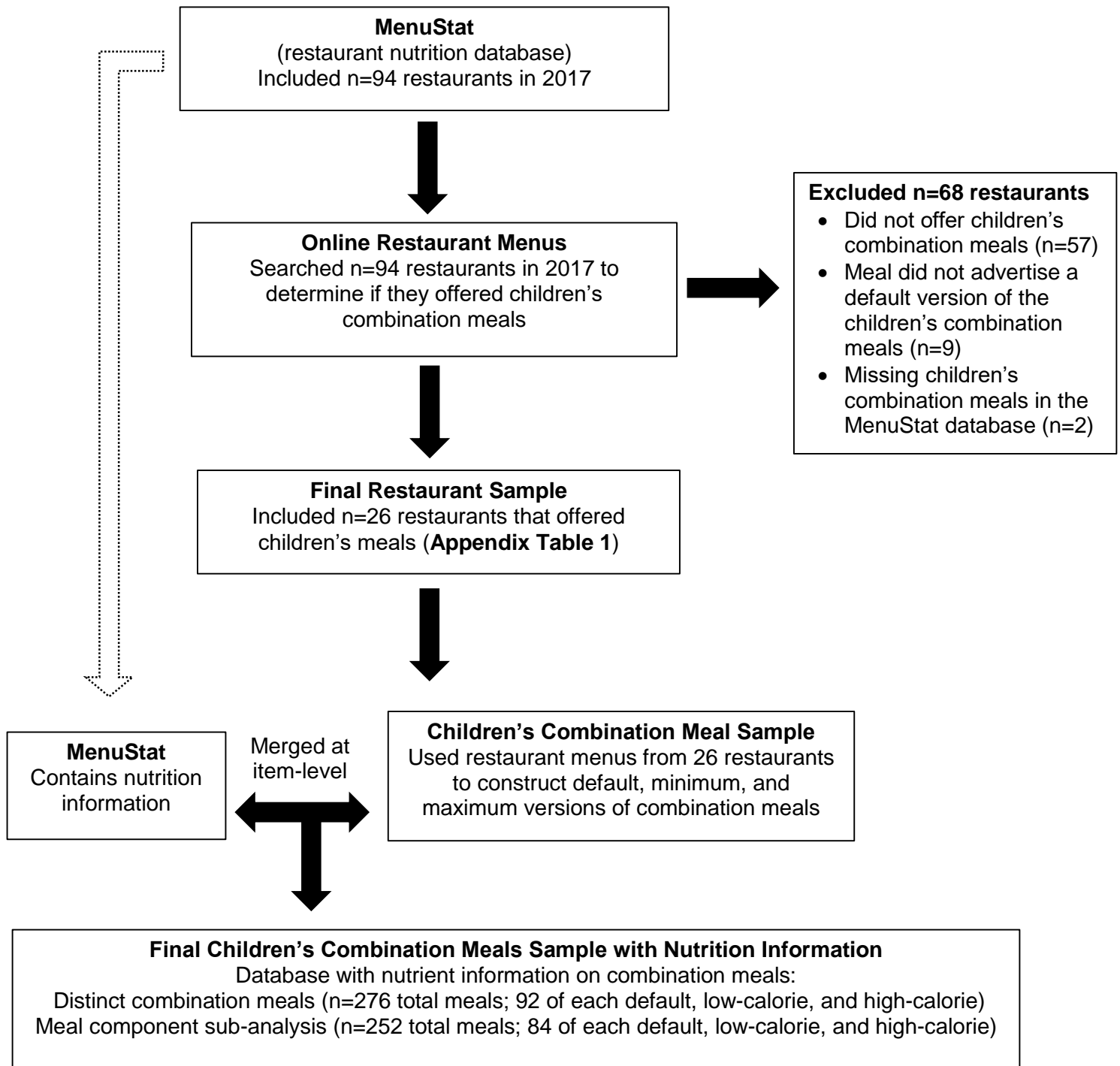


Appendix Figure 1: Combination Meals Sample Identification



Appendix A: Creation of Combination Meals

Restaurant combinations were built primarily using restaurants' websites in October–December 2017 with quality checking completed September–October 2018. When combinations could not be determined from the restaurant website, the most recent drive-thru menu image on Yelp was used. Versions of each combination were assembled as follows:

1. **Default:** as-advertised combination that included an main dish, side(s), beverage, and any default add-ons (e.g., dipping sauce; see Appendix Table 2 for details).
 - a. The default beverage was chosen as advertised in the children's size (see Appendix Table 3 for details).
 - b. When no default side was identified, the side with the closest number of calories to the mean calories across all possible sides was selected. Some meals included multiple side dishes if those were part of the advertised meal.
 - c. For dipping sauces/condiments, the default combination meal included one dipping sauce/condiment for the main dish and one dipping sauce/condiment for the side. When no specific default dipping sauce/condiment was identified, the same mean calorie rule as for sides was used to select the default dipping sauce/condiments.

2. **Minimum:** lowest-calorie version of the default combo that included an main dish, side(s), beverage, and any applicable removals (e.g., toppings).
 - a. The minimum-calorie beverage was chosen as water (or if not available, unsweetened tea or the lowest-calorie children's sized beverage was used) (See Appendix Table 3 for details).
 - b. The minimum side was chosen as the lowest-calorie option offered.
 - c. Only high-calorie toppings and ingredients were removed from the main dish (e.g., mayonnaise, cheese) unless they were included in the name of the main dish (e.g., for a cheeseburger, the cheese would not be removed).
 - d. For dipping sauces/condiments, the minimum combination meal included one of the lowest-calorie dipping sauce/condiment for the main dish and no dipping sauce/condiments for the side (see Appendix Table 2 for details).

3. **Maximum:** highest-calorie version of the default combo that included an main dish, side(s), beverage, and add-ons (e.g., dipping sauce; see Appendix Table 2 for details).
 - a. The highest-calorie kid's size beverage was chosen (See Appendix Table 3 for details).
 - b. The maximum side was chosen as the highest-calorie option offered.
 - c. For dipping sauces/condiments, the maximum combination meal included one of the highest-calorie dipping sauce/condiment for the main dish and one for the side (see Appendix Table 2 for details).

Appendix Table 1: Restaurants included in final analytic sample, with total number of default meal combinations

Restaurant	Restaurant Type ^a	# Combination Meals
Arby's	Fast Food	3
Bojangles	Fast Food	3
Burger King	Fast Food	3
Captain D's	Fast Casual	5
Carl's Jr./Hardees	Fast Food	3
Checker's Drive-In/Rallys	Fast Food	3
Chick-Fil-A	Fast Food	3
Culver's	Fast Food	5
Dairy Queen	Fast Food	5
Del Taco	Fast Food	2
El Pollo Loco	Fast Food	4
Firehouse Subs	Fast Food	4
Frisch's Big Boy	Fast Casual	2
Jack in the Box	Fast Food	4
Jersey Mike's Subs	Fast Food	3
KFC	Fast Food	4
Krystal	Fast Food	3
Long John Silver's	Fast Food	3
McDonald's	Fast Food	2
Sonic	Fast Food	5
Steak 'N Shake	Fast Food	4
Subway	Fast Food	4
Wendy's	Fast Food	4
Whataburger	Fast Food	4
White Castle	Fast Food	4
Zaxby's	Fast Casual	3
Total		92

^a Restaurants were categorized as fast casual if they offered at least two of the following: non-disposable utensils, onsite food preparation, no table service, or commitment to higher-quality or fresh ingredients or sustainability. Restaurants were categorized as fast food if they didn't meet criteria for fast casual. These categorizations have been used by authors in previous analyses using MenuStat.¹⁻³

Appendix Table 2: Rules for choosing main dish and side dish add-ons in default, minimum and maximum meal versions

Main dish Add-Ons (e.g., dipping sauces with chicken tenders; tartar sauce with breaded fish, clam strips; cocktail sauce with shrimp)		
Default	As advertised or closest to mean calorie option	quantity = 1
Minimum	Lowest-calorie option	quantity = 1
Maximum	Highest-calorie option	quantity = 1
Side Dish Add-Ons (e.g., ketchup with fries, marinara sauce with breadsticks)		
Default	As advertised or median calorie option	quantity = 1
Minimum	n/a	quantity = 0
Maximum	Highest-calorie option	quantity = 1

Appendix Table 3: Rules for choosing beverages in default, minimum and maximum meal versions

Default	Advertised beverage, children's size
Minimum	Water (if n/a, used unsweetened tea or lowest-calorie beverage), children's size
Maximum	Highest-calorie beverage (usually chocolate milk or sugar-sweetened beverage), children's size

Appendix Table 4. Default, minimum, and maximum versions of children’s meal from Chick-fil-A.

Combination	Main dish	Side	Beverage	Total calories
Default	Chicken Strips, 2-count (230 kcals)	Fruit Cup (30 kcals)	Honest Kids Apple Juice (35 kcals)	355 kcals
	Honey Roasted BBQ Dipping Sauce (60 kcals)	Toy (N/A)		
Minimum	Chicken Strips, 1-count (120 kcals)	Fruit Cup (30 kcals)	Water (0 kcals)	160 kcals
	Buffalo Dipping Sauce (10 kcals)	Toy (N/A)		
Maximum	Chicken Strips, 2-count (230 kcals)	Waffle Fries, Small (310 kcals)	Lemonade, Kids’ Size (130 kcals)	1070 kcals
	Chick-fil-A Dipping Sauce (140 kcals)	Ice Cream (260 kcals)		

Notes: The default version of a Chick-fil-A Chick-n-Strips Kids Meal included 2 Chick-N-Strips with Honey Roasted BBQ Dipping Sauce, a fruit cup, and an Honest Kids Apple Juice. The meal is also served with a “special surprise,” or children’s toy. To create a minimum version of the meal, a smaller main dish was selected (i.e., 1 Chick-N-Strip option), the Buffalo Dipping Sauce replaced the BBQ Dipping Sauce, the side option remained the same (a lower-calorie side is not available), and water replaced the apple juice. To create the maximum version, the Chick-fil-A Dipping Sauce replaced the BBQ Dipping Sauce; a small side of waffle fries replaced the fruit cup, an Icedream (ice cream cone) replaced the toy, and a kids’ sized lemonade replaced the apple juice. This is an illustrative example to show changes made to each of the meal components to create minimum and maximum meals. Chick-fil-A was chosen as an example restaurant and not for any particular reason.

Appendix Table 5: Differences in Mean Nutrient Value for Default versus Maximum and Minimum, by Meal Component (n=252 meals)^a

	Beverage	Main dish	Side
Calories (kcal)			
Minimum vs. Default	-100 (-110, -90) ^b	-20 (-33, -7) ^b	-59 (-76, -43) ^b
Maximum vs. Default	58 (44, 72) ^c	30 (14, 45) ^c	128 (102, 154) ^c
Fat (g)			
Minimum vs. Default	-0.7 (-1.4, -0.1) ^b	-2.1 (-3.1, -1.1) ^b	-3.5 (-4.5, -2.5) ^b
Maximum vs. Default	0.1 (-0.9, 1.1)	3.1 (2.1, 4.2) ^c	7.5 (6.1, 8.9) ^c
Saturated Fat (g)			
Minimum vs. Default	-0.5 (-0.8, -0.3) ^b	-0.4 (-0.7, -0.1) ^b	-1.1 (-1.6, -0.7) ^b
Maximum vs. Default	0.0 (-0.4, 0.4)	0.7 (0.4, 0.9) ^c	2.3 (1.8, 2.8) ^c
Sodium (mg)			
Minimum vs. Default	-51 (-72, -29) ^b	-10 (-38, 19)	-69 (-99, -39) ^b
Maximum vs. Default	23 (-3, 48)	35 (3, 67) ^c	202 (161, 244) ^c
Sugar (g)			
Minimum vs. Default	-20 (-22, -18) ^b	0 (-1, 2)	-1 (-2, 0)
Maximum vs. Default	16 (13, 19) ^c	0 (-2, 1)	-1 (-3, 1)

Predicted mean difference (bootstrapped 95%CI) using Margins command in Stata.

^a Twenty-four meals (9% of the sample: 8 default, 8 minimum, and 8 maximum) were excluded because restaurants nutrition information was only available for the entire meal.

^b Indicates significant difference between minimum and default (p<0.05).

^c Indicates significant difference between maximum and default (p<0.05).

References

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