

We used a variety of data sources and methods to assess children's drinks in the United States. Through publicly available data, we document and evaluate the nutrition content of children's drinks and marketing to promote them to children and their parents. Whenever possible, we used the same methods as our 2014 report, "Sugary Drink FACTS: Evaluating sugary drink nutrition and marketing to youth,"¹ to measure changes over time.

We first identified children's drink brands in the fruit drink, juice and water categories using IRI syndicated sales data and by examining marketing messages on brand websites. We evaluated the nutrition facts and ingredients in the most popular children's drinks; conducted a content analysis of product packaging, including nutrition-related, child-directed, and other marketing messages; and analyzed syndicated data from Nielsen to assess advertising spending in measured media and TV advertising exposure, including products targeted to children and to Hispanic and Black consumers. We supplemented these analyses with information collected from company websites, monitoring of business and consumer press, numerous visits to retail establishments, and calls to beverage company consumer helplines. These methods are described in detail in the following sections.

We did not have access to food industry proprietary documents, including privately commissioned market research, media, and marketing plans or other strategic documents. Therefore, we do not attempt to interpret beverage companies' goals or objectives for their marketing practices. Rather, we use publicly available data to document the sales, nutrition content, and marketing of children's drinks, assess changes over the past five years, and evaluate the products based on expert recommendations regarding healthy drinks for children.

Scope of the analysis

The analyses in this report focus on **children's drinks**, defined as drink products that companies market as intended for children to consume. Children's drinks may be marketed directly to children or to their parents. For some analyses, we also include other drink products (i.e., those not marketed for children) in the same categories for comparison purposes.

To identify children's drink brands to detail in this report, we obtained 2018 sales data from IRI for all fruit drink, juice, and water categories, including aseptic juices (i.e., boxes and pouches), shelf-stable bottled juices (bottled products that do not require refrigeration), and bottled water, as well as iced tea and sports drinks. For all products within these categories, IRI provided total dollar sales at U.S. supermarkets, convenience stores, drug stores, and mass merchandisers. Sales at vending

machines, smaller retailers (e.g., corner stores), and restaurants were not included in these data.

We first identified all brands in these categories with \$10 million or more of sales in 2018. Using this list of brands, researchers visited the brand websites to determine whether the brand had products marketed as specifically for children. Brands that had products with "kids" in the name and/or websites that referenced children drinking the product or parents serving it to their children (in text and/or pictures) were categorized as children's brands.

We did not identify any children's drink products offered by sports drink or iced tea brands, so these categories were excluded from our analysis.

The report includes the following analyses: 1) a description of the children's drink market, including brands, categories and product sales; 2) children's drink product nutrition; 3) marketing messages on children's drink packages; and 4) advertising of children's and other drink products in the same categories, including a) advertising spending by media, b) TV advertising exposure by children, and c) targeted marketing to Hispanic and Black consumers.

Children's drink market

All children's drink products identified above were assigned a company, brand, sub-brand, and drink category designation, as follows:

- **Company** refers to the company listed on the product package or that owns the official website for the product.
- **Brand** references the marketing unit for each beverage (e.g., Capri Sun, Minute Maid). Brands may include two or more sub-brands.

If a brand had products in more than one drink category, we also assigned a **sub-brand** (e.g., Capri Sun Juice Drink fruit drinks, Capri Sun Roarin' Waters flavored water, Capri Sun 100% Juice). If a brand's products in the same category differed substantially in nutrition quality, they were also assigned to a sub-brand (e.g., Kool-Aid Jammers, Sour Jammers, and Zero Sugar Jammers).

All sub-brands are presented separately in the results sections when data are available.

Children's drink categories

Category describes the type of beverage (e.g., fruit drink, 100% juice). Syndicated industry data sources (e.g., IRI, Nielsen) often do not differentiate between products with different ingredients or nutrient profiles. For example, IRI's aseptic juice and bottled juice categories include both fruit drinks and 100% juice. Similarly, both IRI and Nielsen categorize flavored waters with added sweeteners in their "water" categories.

To differentiate between children's products with various ingredients and nutrient profiles, we assigned all brand/sub-brands to one of six categories. We also report **sweetened children's drinks**, those that contain added sugars and/or low-calorie sweeteners, separately from **children's drinks without added sweeteners** (added sugar or low-calorie) as follows:

■ Sweetened children's drinks

- ❑ **Fruit drinks** are fruit-flavored, non-carbonated drinks that may contain some fruit juice (in addition to added sugars and/or low-calorie sweeteners). Manufacturers refer to these products as juice drinks, juice beverages, fruit cocktails, and fruit-flavored drinks.
- ❑ **Drink mixes** include powdered and liquid fruit drink mixes, such as pre-sweetened products and products with no sweeteners intended for consumers to add their own.
- ❑ **Flavored waters** include non-carbonated drinks described as a "water beverage" on the product container or that contain the word "water" in the drink name.

■ Children's drinks without added sweeteners

- ❑ **100% juice** products are labeled as 100% juice on the product package. They only contain fruit and/or vegetable juice, including reconstituted juice from concentrate.
- ❑ **Juice/water blends** contain juice concentrates and water, with no additional sweeteners. These products cannot be labeled 100% juice as they are less concentrated than 100% juice. They are typically lower in total sugar and calories.
- ❑ **Sparkling water** includes carbonated products labeled as "water." They may have flavors, but no sweeteners.
- ❑ There were no children's **plain water** (i.e., non-carbonated, still) products that met our minimum sales criteria to include in the report.

Sales by category

The IRI sales data specified all products sold in the aseptic juice, shelf-stable bottled juice, and bottled water categories in 2018. **Products** included all combinations of flavor, package type, and package size for each sub-brand, identified as a Universal Product Code (UPC). IRI also identified a category and sub-category for each UPC, as well as the brand name and other product descriptors. There were 12,824 UPCs in the dataset.

The IRI categories do not correspond directly to the children's drink categories used in this analysis. **Aseptic juices** include 100% juice, juice/water blend, and fruit drink products that come in single-serving non-resealable packages (e.g., juice boxes, pouches) and do not require refrigeration. **Shelf-**

stable bottled juices include 100% juice, juice/water blend, and fruit drink products that come in bottles (single-serving and multi-serving) and do not require refrigeration. **Bottled water** includes plain, sparkling, and flavored water products. These sales data do not include products in the drink mix or refrigerated juice categories.

Researchers first selected all brands and sub-brands of children's drinks identified above in the IRI data and assigned them to the appropriate product category (i.e., fruit drink, flavored water, 100% juice, juice/water blend, or sparkling water).

Researchers also assigned the remaining (i.e., not children's) products to **other drinks** in the same categories, but the coding method varied by IRI category and sub-category:

■ IRI shelf-stable bottled juice category

- ❑ Other fruit drinks include all remaining products (i.e., not children's drinks) in the following IRI sub-categories: cranberry cocktail/juice drink, fruit drinks, fruit nectar, grapefruit cocktail, lemonade, cranberry juice/cranberry juice/water blend, and tomato/vegetable juice/cocktail.
- ❑ Other juice/water blends include all remaining products in the following IRI sub-categories: fruit juice/water blend and sparkling juice.
- ❑ Other 100% juice includes all remaining products in the following IRI sub-categories: aloe vera juice, apple juice, apricot juice, cherry juice, cider, grape juice, grapefruit juice, orange juice, pineapple juice, prune/fig juice, and other fruit juices.

■ IRI aseptic juice category

- ❑ Researchers checked brand websites to determine product ingredients and assigned products to the appropriate category.
- ❑ Products in the IRI aseptic juice drinks sub-category include other fruit drinks (87%), other juice/water blends (11%), and other 100% juice (2%).
- ❑ Products in the IRI aseptic juices sub-category also include fruit drinks (13%), juice/water blends (25%), and other 100% juice (62%).

■ IRI bottled water category

- ❑ All products in the IRI jug/bulk still water sub-category were assigned to the plain water category.
- ❑ Researchers examined all remaining products in the IRI convenience/pet still water sub-category.
 - If the product did not contain a flavor in the name, it was assigned to the plain water category.
 - If the product did contain a flavor in the name, researchers checked the brand website to determine

whether it contained added sweeteners. Products with sweeteners were assigned to the flavored water category. Products without sweeteners were assigned to the plain water category.

- Researchers examined all remaining products in the IRI seltzer/sparkling/mineral sub-category.
 - If the product did not contain a flavor in the name, it was assigned to the other sparkling water category.
 - If the product did contain a flavor in the name, researchers checked the brand website to determine whether it contained added sweeteners. Products with sweeteners were assigned to the other flavored water category. Products without sweeteners were assigned to the other sparkling water category.

Finally, 2018 dollar sales were aggregated by category for a) all drink products, b) children's drink products, and c) other (not children's) drink products for analysis.

Nutrition information

Researchers collected nutrition information for 100% juice, juice/water blends, fruit drinks, flavored waters, drink mixes, and seltzers in our analysis from company or brand websites in April to May 2019. If nutrition and/or ingredient information was not provided online or had implausible data (e.g., 0 kcals and 10g of sugar), researchers visited local stores to obtain nutrition information directly from packages.

We report the nutrition information per single-serving container, including calories, sugar, sodium, and percent juice. Nutrition information for multi-serving containers is reported using the serving size on the nutrition facts panel (i.e., 8 oz).

- **Single-serving containers** include drinks in pouches, boxes, cans, and bottles up to 20 ounces.
- **Multi-serving containers** include drinks in bottles, canisters, and cartons with more than 20 ounces.

We report the following measures of nutrition content for the children's products in our analysis:

- **Nutrition information** includes calories, total sugar, and sodium content per serving as defined above from the nutrition facts panels. Medians and ranges of values per sub-brand are reported. Nutrition information by category was calculated by determining the median of medians by sub-brand.
- **Ingredient information** includes percent juice and types of sweeteners used in each product. This information is provided on product packages within the nutrition facts label. Juice content is reported as percent of total volume. Presence and type(s) of added sugar and low-calorie sweetener are noted.

- **Added sugars** are any type of sugar(s) listed on the nutrition facts panel that were added to the drink during processing, including (but not limited to) sugar, cane sugar, invert sugar, high fructose corn syrup, sucrose, and glucose.

- **Low-calorie sweeteners** refer to all nonnutritive (also known as non-caloric or zero-calorie) sweeteners, including acesulfame potassium, aspartame, sucralose, neotame, and stevia. These products are also referred to as high-intensity sweeteners.² Product packaging sometimes refers to stevia as a "natural" sweetener because it is obtained from the leaves of the stevia plant.

- **Reduced-calorie drinks** are lower-sugar, lower-calorie drinks with 40 or fewer calories per 8-ounce serving. This definition of reduced-calorie was adopted from *Recommendations for Healthier Beverages* developed by a national panel of experts.³ The experts recommended non-caffeinated, non-fortified beverages with no more than 40 calories per container as healthier drink choices for adolescents. Reduced-calorie drinks often contain low-calorie sweeteners in addition to added sugar. The drink name may contain the words "light" or "diet," or it may give no indication that the drink is lower in calories.

We also analyzed changes in nutrition content from 2014 by sub-brand for sub-brands with data available for both years. The 2014 Sugary Drink FACTS report included sweetened drinks only, so we could not assess changes in nutrition for 100% juice and juice/water blends.

On-package marketing

Researchers conducted a content analysis of the marketing messages that appeared on children's drink product packaging, including nutrition and other claims, promotions, and child features. Data were collected by surveying product packages in two large supermarkets in Manchester and East Hartford, Connecticut during February and March 2019, supplemented by visits to other stores and online orders for products not available at the two locations.

Researchers created an initial list of product packages for coding that included all flavors listed on brand websites for all children's drink products analyzed in this report. Prior to data collection, one researcher visited the supermarkets to identify the primary and secondary shelving locations, brands, sub-brands, flavors, and forms of packaging available for the drinks. The researcher also conducted a preliminary assessment of marketing messages that appeared on product packages. If children's drink products had more than one form of packaging, such as multipacks of single-serving containers and multi-serving bottles, all packages were coded. If a product had more than one version of a package with different messages (e.g., one version included a promotion and the other did not), both packages were coded. Packages for all flavors of each brand available for each package type were coded.

The following package types for each of the six children's drink categories were examined:

- Flavored water: multipacks of pouches or boxes, and single-serving bottles.
- Fruit drinks: multipacks of pouches or boxes, single-serving bottles, and multi-serving bottles.
- 100% juice: multipacks of pouches or boxes, single-serving bottles, and multi-serving bottles.
- Juice/water blends: multipacks of pouches or boxes, single-serving bottles, and multi-serving bottles.
- Drink mixes: multi-serving canisters, packets, and drops, and single-serving packets.
- Sparkling water: multipacks of single-serving cans.

The codebook for this analysis was based on the codebook from a previous analysis of marketing on sugary drink packages,⁴ with modifications based on new messages that appeared frequently on children's drink packages as identified in preliminary store visits.

The coding manual outlined two main categories of nutrition-related and real messages:

- **Nutrition-related messages** describe all types of messages that imply the product is nutritious and/or beneficial for children in some way, including ingredient, real, and other health-related claims.
 - **Ingredient claims** include messages about ingredients in the product, including sugar, micronutrients, and other types of ingredients.
 - **Other health-related claims** refer to messages that imply health-related benefits from consuming the products, including hydration, exercise performance, and energy. Images of fruit on the package were also coded in this category as they imply health-related benefits.
- **Real claims** include messages about natural or no artificial ingredients/flavors/colors, in addition to real, organic, and non-GMO messages.

Due to the many ingredient claims found, subsets of these messages were coded as follows:

- **Sugar claims** describe the sugar content of the product, including no sugar added, less or low sugar, no high fructose corn syrup, and no artificial sweeteners.
- **Other ingredient claims** refer to any other claims regarding ingredients, including juice and fruit/vegetable servings, micronutrients (i.e., vitamins and minerals), antioxidants, gluten-free, and caffeine.

The coding manual included two main types of **other marketing messages**:

- **Promotions** describe a wide range of marketing strategies such as licensed characters, contests and giveaways, celebrity endorsements, entertainment tie-ins (e.g., movies, music), cause-related marketing, and education. Eleven categories of promotional messages were coded, including brief descriptions of each promotion.
- **Child features** are features that indicate the product is intended for child consumption, including cartoon brand characters and other cartoon pictures, any reference to children or families, fun/cool messages, wacky names, and novelty shapes.

Researchers also coded additional marketing messages on the package, including Spanish-language information, recycle or environmentally friendly, and Good/Best/Promise. Finally, researchers coded the package and per-unit price listed on the shelf tag.

A team of six researchers conducted in-store surveys in pairs to ensure that all messages were recorded and coded correctly. In addition to coding the existence of each type of message, researchers recorded the specific message. They also wrote in any additional messages that were not included on the coding form. All messages were recorded regardless of their location on the package, excluding information contained in the nutrition facts panel. In addition to the original list of products for coding, researchers examined all products in the juice, fruit drink, and water aisles to identify additional products with child features. These packages, as well as the products that were obtained from other stores and online, were coded using the same procedures.

Researchers analyzed the on-package marketing data by brand and drink category. Duplicates of packages coded in both stores were removed from the analysis. In addition, if packages for different flavors of a brand/sub-brand were identical, except for the flavor name, only one package of the brand/sub-brand was included in the analysis. We provide the percentage of packages that included each type of message, as well as the average number of these messages per package (on packages that contained these messages). Ingredient claims and other health-related messages were coded separately and combined for total nutrition-related messages per package. Percentage of packages with promotions and any child features, as well as the average number of child features per package were also calculated.

Advertising in traditional media

To analyze advertising spending and TV advertising exposure, we licensed data from Nielsen for January through December of 2018 in the following non-alcoholic beverage categories: drink product, bottled water, fruit drinks, fruit juices, and drink mixes. These Nielsen categories incorporate all of the sweetened drink categories in our analysis, as well as 100% juice, juice/water blends, and sparkling and plain water. The

data include children's drinks in these categories, as well as all other drinks.

The Nielsen categories and brands do not always correspond directly with the categories and brands in our analyses. For example, Nielsen's fruit drink category includes fruit drinks as well as juice/water blends, and its bottled water category includes both plain and sweetened flavored waters. Therefore, we used the descriptions provided by Nielsen to assign each Nielsen brand to the appropriate brand, sub-brand, and category in our analysis. In some cases, the description could apply to more than one sub-brand and/or category (e.g., Capri Sun drink products). When brands included products in more than one category and the Nielsen data did not specify the product advertised, we labeled it as **brand-level advertising**.

Advertising spending

Nielsen tracks total media spending in 18 different media, including TV (including Spanish-language TV), internet, radio, magazines, newspaper, free-standing insert (FSI) coupons, and outdoor advertising. These data provide a measure of **advertising spending**.

We report total advertising spending by category for children's drinks and other drink brands. We also report total advertising spending for children's drinks by brand, sub-brand, and company, as well as advertising spending by media type (including TV, magazines, and digital). In addition, we report changes in advertising spending from 2010 and 2013 to 2018 by category for children's drinks and other drinks and by brand and sub-brand for children's drinks, using data from the 2014 Sugary Drink FACTS report.

TV advertising exposure

To measure exposure to TV advertising, we also licensed **gross rating points (GRP)** data from Nielsen for the same period and drink categories. GRPs measure the total audience delivered by a brand's media schedule. It is expressed as a percent of the population that was exposed to each commercial over a specified period of time across all types of TV programming. It is the advertising industry's standard measure to assess audience exposure to advertising campaigns, and Nielsen is the most widely used source for these data.⁵ GRPs, therefore, provide an objective assessment of advertising exposure.

In addition, GRPs can be used to measure advertisements delivered to a specific audience, such as an age or other demographic group (also known as target rating points or TRPs), and provide a per capita measure to examine relative exposure between groups. For example, if a sub-brand had 2,000 GRPs in 2018 for 2- to 5-year-olds and 1,000 GRPs for 18- to 49-year-olds, then we can conclude that on average preschoolers saw twice as many ads for that brand in 2018 compared with adults.

The GRP measure differs from the measure used to evaluate food industry compliance with their CFBAI pledges. The pledges apply only to advertising in children's TV programming as defined by audience composition (i.e., programs in which at least 35% of the audience is younger than age 12). However, less than one-half of all advertisements viewed by children younger than 12 occur during children's programming.⁶ In contrast, GRPs measure children's total exposure to advertising during all types of TV programming.

For the TV advertising exposure analyses, we used 2018 GRP data by age group and race. We first obtained GRPs for the following age groups (pre-defined by Nielsen): preschoolers (2-5 years), children (6-11 years), and adults (18-49 years). These data provide total exposure to national (network, cable, and syndicated) and local (spot market) TV combined. In addition, we obtained GRPs for ads viewed on **children's TV** programming (as defined by Nielsen), which includes the following program types: child day animation, child day live, child evening, child multi-weekly, and child news (e.g., programming on Nickelodeon, Cartoon Network, Nicktoons, and Disney XD).

To assess targeted marketing to Black consumers, we also obtained GRPs for advertising viewed by Black and White youth in the same age groups on national TV only, as Nielsen does not provide spot market GRPs by race at the individual level.

To assess exposure by Hispanic youth to Spanish-language advertising, we analyzed GRP data for advertising that occurred on **Spanish-language TV**. Spanish-language TV includes TV programming presented on Spanish cable and broadcast networks (e.g., Univision, Telemundo). Nielsen only provides data for ads viewed by consumers with a Hispanic head-of-household on Spanish-language TV programming. Therefore, we could not assess differences in exposure between Hispanic and non-Hispanic individuals on other types of TV programming.

Nielsen calculates GRPs as the sum of all advertising exposures for all individuals within a demographic group, including multiple exposures for individuals (i.e., gross impressions), divided by the size of the population, and multiplied by 100. GRPs can be difficult to interpret. Therefore, we also use GRP data to calculate the following TV advertising exposure measures:

- **Average number of TV ads viewed.** This measure is calculated by dividing total GRPs for a demographic group during a specific time period by 100. It provides a measure of ads viewed by individuals in that demographic group during the time period measured. For example, if Nielsen reports 2,000 GRPs for 2- to 5-year-olds for a brand in 2018, we can conclude that on average all 2- to 5-year-olds viewed 20 ads for that brand in 2018.

▪ **Targeted ratios.** GRPs provide a per capita measure of advertising exposure for specific demographic groups, so we also used GRPs to assess relative exposure to advertising between demographic groups. We report the following targeted GRP ratios:

- ❑ Preschooler-to-adult targeted ratio = GRPs for 2-5 years/GRPs for 18-49 years
- ❑ Child-to-adult targeted ratio = GRPs for 6-11 years/GRPs for 18-49 years
- ❑ Black-to-White preschooler targeted ratio = GRPs for Black preschoolers 2-5 years/GRPs for White preschoolers 2-5 years. This measure uses only national GRPs.
- ❑ Black-to-White child targeted ratio = GRPs for Black children 6-11 years/GRPs for White children 6-11 years. This measure uses only national GRPs.

A targeted ratio greater than 1.0 indicates that on average persons in the group of interest (e.g., children in the child-to-adult ratio) viewed more advertisements than persons in the comparison group (i.e., adults). A targeted ratio of less than 1.0 indicates that the person in the group of interest viewed fewer ads. For example, a child-to-adult targeted ratio of 2.0 indicates that children viewed twice as many ads as adults viewed.

If this ratio is greater than the relative difference in **TV viewing times**, or the amount of TV viewed by each group, we can conclude that the advertiser likely designed a media plan to

reach this specific demographic group more often than would occur by chance. We obtained the average weekly amount of time spent viewing TV in 2018 from Nielsen Market Breaks for each age and demographic group in the analysis.

Finally, we compared changes in children's exposure to TV advertising from 2010 and 2013 to 2018, using data from the 2014 Sugary Drink FACTS report. We report changes in exposure to ads for children's and other drinks by category, as well as by brand and sub-brand for children's drinks.

Endnotes

1. Harris JL, Schwartz MB, LoDolce M, et al. (2014). Sugary Drink Facts 2014. Sugary drink marketing to youth: some progress but much room to improve. Rudd Center for Food Policy & Obesity. www.sugarydrinkfacts.org.
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