

# WHERE'S THE FRUIT?

Fruit Content of the  
Most Highly-Advertised  
Children's Food and Beverages

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### INTRODUCTION

Surveys of children's food habits reveal a disturbing trend over the last 60 years. Up to 80% of today's young children have diets that are considered "poor" or "in need of improvement" (Nestle, 2006). Children are consuming less than the daily recommended servings of fruits, vegetables and whole grains, while consuming excess calories in the form of added sugars and fats (IOM, 2006). The appearance of Type II diabetes (formerly known as adult-onset diabetes) in adolescents and younger children has sounded an alarm around the country that ensuring a good diet (and regular physical activity) for children is a public health priority. Establishing good dietary habits in childhood promotes healthy growth and development and helps prevent diabetes, cardiovascular disease and cancer in adulthood.

Parents are concerned about their children's health and try to make healthful food choices for their children, frequently operating under time and financial pressures. They scan the supermarket aisles, often with children in tow, looking for affordable, tasty and nutritious items to feed their families. Today's large supermarkets may display as many as 40,000 products, so these choices can be daunting (Nestle, 2006). The information contained on product packages is one source of information for these choices, augmented by marketing messages encountered before entering the supermarket.

Parents are not the only targets of these marketing messages. Children are seen as prime marketing targets for their direct purchasing power, influence on parental and household purchases, and to cultivate early brand loyalty that will influence their purchases as adults. An



STUDY PRODUCTS

estimated \$10 billion per year is spent for food and beverage marketing to children and youth in the United States (IOM, 2006). This amounts to more than \$1 million spent every hour of every day. The majority of these food and beverage products are high in sugar, salt, fat, and calories and low in nutrients (IOM, 2006). After being exposed to marketing messages, children may ask their parents to purchase these products at the supermarket. In fact, children influence household purchase decisions at an estimated value of \$500 billion annually for 2 to 14 year olds (IOM, 2006).

In order to attract children, advertising and packages tend to be dynamic, brightly colored and frequently include a branded fictional character or familiar children's icon. While taste and fun are the primary appeals to children, good nutrition is valued by parents. Although specific health claims and nutrient content claims are regulated by the Food and Drug Administration (FDA), there are still many phrases food and beverage manufacturers include on packages that potentially mislead par-

ents. Terms such as high-energy, low-fat, multi-grain, all natural, or fruit-flavored connote a healthy aura, and regularly appear on highly-advertised products such as breakfast cereals, fruit drinks and children's snacks. It requires some working knowledge of nutrition to read the ingredients list and nutrition facts panel to realize these products are frequently high in added sweeteners and contain very little of the whole grains, fruits and vegetables and low-fat dairy products recommended by the US Dietary Guidelines.

Parents may have difficulty making healthy choices for their children because the advertising and packaging does not clearly represent the product's contents. This study focuses on one aspect of this parental challenge—products linked with fruit, via pictures or references to fruit in the product name or phrases on the label. Fruit is a healthy food for snacks and mealtime, rich in dietary fiber, vitamins and minerals, and children need a recommended two to four servings per day (AAP, 2001). The purpose of this study was to determine whether indications of fruit on the packaging of the most heavily marketed products to children represented actual fruit in the product. We also calculated the proportion of sugar in these products, as one proxy for the overall nutritional value.

## METHODS

We used the list of brands included in the Kaiser Family Foundation's recent study, *It's Child's Play: Advergaming and the Online Marketing of Food to Children* that were identified as the top-spending children's food advertisers on TV (Moore, 2006). Ninety-six brand-name products were identified by the Kaiser Family Foundation study, grouped according to food categories. We excluded 26 items from our study. The excluded items included brand-name products that clearly did not contain fruit (e.g., Pringles, Doritos, Kraft Macaroni & Cheese, and Coca-Cola). We also excluded restaurants since we based our study on products that are available in supermarkets.

The remaining 70 branded products were included in the study. We visited a local grocery store and reviewed the packaging for the 70 items and identified

the brands that contained words and images on the package related to fruit and/or fruit ingredients. Of the 70 branded products we reviewed, 37 had references to fruit on the packaging.

These 37 products were the focus of our study. We used the ingredient list to determine whether the item contained fruit, the form of the fruit, and the types of sugar in the product. The percentage of calories from sugars was calculated for each product based on information provided on the Nutrition Facts label, and we reviewed the ingredients panel (see box below) to identify all the added sweeteners. For products that contained fruit, we contacted the manufacturers to learn how much fruit was contained in a serving. The manufacturers considered the actual amount of fruit ingredients used to be confidential (proprietary) information. Therefore we were not able to report on the amount of fruit contained in the products. We also examined the references to fruit on the packages, which included both words and pictures.

### FOOD LABELS FOR TWO STUDY BRANDS

\*Sugars are highlighted in bold

**Apple Cinnamon Cheerios:** Whole grain oats, **sugar, brown sugar**, cornmeal, corn starch, **corn syrup**, dried apple pieces, canola and/or rice bran oil, calcium carbonate, salt, cinnamon, trisodium phosphate, zinc, and iron, vitamin C, a B vitamin, artificial flavor, vitamin B6, vitamin B2, vitamin B1, vitamin A, a B vitamin, vitamin B12, vitamin D, wheat starch, vitamin E



**Strawberry Splash Yoplait Go-Gurt Yogurt:** Cultured pasteurized grade A milk, **sugar, high fructose corn syrup**, nonfat milk, modified corn starch, kosher gelatin, tricalcium phosphate, natural and artificial flavor, potassium sorbate, carrageenan, red #40, blue #1



**TABLE 1. FRUIT CONTENT BY BRAND**

Category	# of Products	% of Total Products	Brands
Fruit	10	27%	Apple Cinnamon Cheerios, Apple Jacks, Berry Burst Cheerios ( <i>Strawberry Banana, Triple Berry</i> ), Eggo Waffles ( <i>Apple Cinnamon, Blueberry, Strawberry</i> ), Kellogg's Pop Tarts ( <i>Strawberry</i> ), Quaker Chewy 90 Calorie Granola Bars ( <i>Baked Apple</i> ), Smucker's Jam ( <i>Strawberry</i> ), Fruit by the Foot ( <i>Strawberry</i> ), Fruit Rollups ( <i>Strawberry</i> ), Gushers Fruit Snack ( <i>Strawberry</i> )
100% Fruit Juice	2	6 %	Capri Sun Fruit Waves ( <i>Grape</i> ), Juicy Juice
Minimal Fruit	7	18%	<b>5% Juice Drink:</b> Sunny Delight Fruit Drinks <b>10% Juice Drink:</b> Capri Sun Juice Drink ( <i>Strawberry</i> ), Hi-C Fruit Drinks ( <i>Boppin' Strawberry</i> ), Kool-Aid Jammers <b>Food Products:</b> Popsicle ( <i>Orange, Cherry, Grape</i> ), Skittles, Starbursts
No Fruit	18	49%	<b>Beverages:</b> Nestle Nesquick Milk and Drink Mix ( <i>Strawberry</i> ), Tang <b>Food Products:</b> Air Heads, Berry Berry Kix, Bubble Tape, Captain Crunch with Crunch Berries, Dannon Danimals XL ( <i>Strawberry Explosion</i> ), Froot Loops, Fruity Cheerios, Juicy Fruit Gum, Life Savers ( <i>Wild Cherry</i> ), Post Fruity Pebbles, Push Pop ( <i>Cherry</i> ), Ring Pop ( <i>Cherry</i> ), Trix Cereal, Trix Yogurt ( <i>Strawberry Kiwi</i> ), Twizzlers, Yoplait Go-Gurt Yogurt ( <i>Strawberry Splash</i> )

## RESULTS

### Fruit Content

We sorted the 37 products into four categories based on the type of fruit ingredient they contained:

- 1. Fruit:** including fruit and fruit from concentrate
- 2. 100% Fruit Juice**
- 3. Minimal Fruit Juice:** drinks containing 2-10% fruit juice (no brands contained 11-99% juice), products containing fruit juice
- 4. No Fruit:** including products with no fruit, with only natural fruit flavors [which have no nutritional value (21CFR101.22)], or fruit juice concentrate (which is classified as an added sweetener) (USDHHS, 2005).

Ten products (27%) contained fruit and two (6%) contained 100% fruit juice. The remaining 25 products (67%) contained no or minimal fruit. Table 1 summarizes the results.

### Sugar Content

Most of the products had at least two forms of added sugars, usually high fructose corn syrup/corn syrup and sugar. In the **Fruit** category, there was a wide range of percentage of calories from sugar, with Eggo Waffles having the lowest percentage and Smucker's Jam having the highest. Fruit Juice is high in naturally occurring sugars, and the **100% Juice** products averaged 89% of calories from sugar. The juice drinks in the **Minimal Fruit** category contained high fructose corn syrup and fruit concentrates and three of

**100% FRUIT JUICE** does not contain the equivalent fiber, vitamins, and minerals of whole fruit. The American Academy of Pediatrics (AAP), and the US Dietary Guidelines recommends that children be encouraged to eat whole fruits to meet their recommended daily fruit intake. If fruit juice is consumed, they recommend only 100% juice and that intake is limited to 4 to 12 oz. per day, depending on age (AAP, USDHHS).

## PERCENTAGE OF CALORIES FROM SUGAR

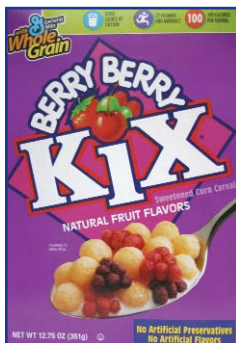
Category	Range (%)	Median (%)
Fruit (10 products)	14-96	46
100% Fruit Juice (2 products)	86-92	89
Minimal Fruit (6 products)		
2 to 10% juice (4 products)	90-100	100
Food (3 products)	57-75	70
No Fruit (18 products)	32-100	62

the four products had 100% of the calories from sugar. **No Fruit** products generally had two or more forms of added sugars in the ingredient list, including high fructose corn syrup.

### The Packaging

Many of the foods in this study had brightly colored packages containing images of fruits and/or words related to fruits regardless of the actual content of fruit ingredients.

Of the 19 products that contained no fruit ingredients, 12 made two references to fruit, six had one reference to fruit, and one had three references to fruit. References to fruit included: pictures of fruit, use of the word “fruit” or “fruity” in the product name and/or description, advertising “fruit flavors” on the package, and using the name of a fruit to describe the product’s flavor (i.e., “strawberry kiwi” yogurt and “wild cherry” lifesavers).



For example, the box for *Berry Berry Kix* cereal uses an image of a cluster of several types of fruit above the letter “i” in Kix, the words “Natural Fruit Flavors,” and a photo of a large spoonful of the cereal which includes clusters that appear to be raspberries and blackberries.

The list of ingredients re-reveals that there are no fruit ingredients in this product besides natural fruit flavors, which, as noted above, have no nutritional value.

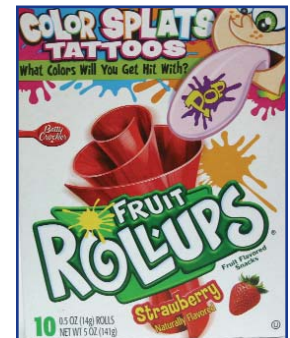
*Hi-C's Boppin' Strawberry Drink* boxes show images of whole strawberries skimming above a stream of

## PERCENTAGE OF CALORIES FROM SUGAR FOR SELECTED PRODUCT TYPES

Category	Range (%)	Average (%)
Cereals (9 products)	32-50	41
Fruit Drinks (8 products)	86-100	95
Fruit Roll-up type product (2 products)	50-58	54
Yogurt (3 products)	55-68	61

fuchsia colored liquid and use the phrase “made with real fruit juice” on the package. The Nutrition Facts panel states that the beverage is only 10% fruit juice and high fructose corn syrup and sugar are listed before the juice ingredients. *Capri Sun*, also features pictures of strawberries floating in a stream, and includes the statements “All Natural,” “Strawberry” in large yellow and red highlighted text. “Strawberry Flavored Juice Blend” appears in much smaller, black letters. The phrase “10% Fruit Juice” only appears at the top of the Nutrition Facts panel on the side of the box.

Three fruit snack products—*Fruit by the Foot*, *Fruit Roll-ups*, and *Fruit Gushers*—all state “Strawberry” in large letters on the label and the phrase “Fruit Flavored Snacks.” Pears or grape from concentrate are the first ingredient for all of these products. Yet the absence of dietary fiber, the listing of sugar and corn syrup as the second and third ingredients, and the average 50% calories from sugar imply there is very little real fruit in the product.



### DISCUSSION

We found that nearly two-thirds of highly-advertised children’s food products with images or references to fruit on the package contained little or no fruit and were high in added sweeteners. The packages might lead a parent to believe they are a healthier option for their children, when many do not actually deliver any

of the nutritional benefits of whole fruit. With the exception of a few products, children are not benefiting nutritionally from these highly-advertised products.

Only two out of the six beverages in the study contained 100% fruit juice. The remaining four products were primarily water and added sweeteners. As noted above, without a careful reading of detailed nutrition panels on the side of the package, it is not readily apparent that these products barely contain fruit juice. These products are calorie vehicles without any nutritional benefits, and there is a growing body of research that sweetened beverage consumption is associated with excess weight gain in children (Ludwig, 2001). One recent study found that low-income preschool children, who were already at risk to be overweight, were twice as likely to become overweight with the consumption of sweetened beverages (including drinks such as vitamin C-containing juices, other juices, fruit drinks, and soda) (Welsh, 2005).

Most of the food products in this study were high in added sweeteners. Adding sugar is a cheap way for food manufacturers to make food taste good (Brownell, 2004). Young children consume added sugars at well above recommended levels, and adolescents are consuming about double the recommended amounts of added sugars in their diets (IOM, 2006).

## CONCLUSION

There is reason to be concerned that current package labels and advertising are misleading parents and children. The Dietary Guidelines for Americans include fruit as an important part of a nutritionally-balanced diet. It is not the image of fruit, but actual fruit that is healthy for children. The packaging of these products reminds people of fruit and its nutritional value without delivering the benefits. Health conscious parents may be drawn to products that seem healthier for their children, but even parents who read labels may have a hard time identifying actual fruit content and determining the amount of sugar since added sweeteners are often listed under different names. Parents may find difficulty in making sense of the misleading messages displayed on children's food

products. Parents deserve, and public health imperatives require, packaging that does not mislead consumers into thinking they are making healthy choices.

Food manufacturers can clear up this confusion by removing misleading images and statements from packaging such as allusions to fruit in products that contain little or no fruit, discontinuing advertising of highly-sweetened foods and beverages to children, and reformulating existing food and beverages to both significantly decrease added sweeteners and increase fruits, vegetables and whole grains.

The findings of this study also suggest that there may be an important role for government regulation. Current FDA regulations on health claims and product definitions such as those for fruit drinks are not sufficiently protecting parents and children; these regulations need to be updated to ensure the packaging clearly states fruit content on the cover. Further, parents and children would be assisted by requiring that added dietary sugars be included on the nutrition facts panel, so they can better understand how much sweetener is in these products.

## WORKS CITED

- AAP (American Academy of Pediatrics) Committee on Nutrition (2001). The use and misuse of fruit juice in pediatrics. *Pediatrics*, 107 (5), 1210-1213.
- Brownell K.D., Horgen K.B. (2004). *Food fight: The inside story of the food industry, america's obesity crisis and what we can do about it*. New York: McGraw-Hill.
- Institute of Medicine (2006). *Food marketing to children and youth: Threat or opportunity?* Washington, DC: The National Academy Press.
- Ludwig D.S., Peterson K.E., Gortmaker S.L. (2001). Relation between consumption of sugar-sweetened drinks and childhood obesity: a prospective, observational analysis. *Lancet*, 357, 505-508.
- Moore, E.S. (2006). It's child's play: Advergaming and the online marketing of food to children. *A Kaiser Family Foundation Report*. Menlo Park, California: Kaiser Family Foundation. Retrieved December 12, 2006, from [www.kff.org/entmedia/upload/7536.pdf](http://www.kff.org/entmedia/upload/7536.pdf).
- Nestle, M. (2006) *What to eat: An aisle-by-aisle guide to savvy food choices and good eating*. New York: North Point Press.
- U.S.D.H.H.S. (United States Department of Health and Human Services) (2005). Dietary guidelines for americans. Retrieved December 15, 2006, from [www.healthierus.gov/dietaryguidelines](http://www.healthierus.gov/dietaryguidelines).
- Welsh J.A., Cogswell M.E., Rogers S., Rockett H., Mei Z., Grummer-Strawn L.M. (2005). Overweight among low-income preschool children associated with the consumption of sweet drinks: Missouri, 1999-2002. *American Journal of Pediatrics*, 115, 223-229.
- 21CFR101.22, Code of Federal Regulations (2002). *U.S. Government Printing Office via GPO Access*, Title 21, Volume 2. Retrieved December 15, 2006, from [www.cfsan.fda.gov/~lrd/CF101-22.HTML](http://www.cfsan.fda.gov/~lrd/CF101-22.HTML).

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