Children's Exposure to TV Advertising in 1977 and 2004

Information for the Obesity Debate

Federal Trade Commission
Bureau of Economics Sta   Report

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Executive Summary

Obesity has become a major health concern in the U.S. and other countries as overweight and obesity rates have increased markedly since the early 1980s. The rise in children's obesity is a particular concern, because overweight children are more likely to become overweight adults, and because obese children are likely to su er from associated medical problems earlier in life.

Food marketing is among the postulated contributors to the rise in obesity rates. Food marketing to children has come under particular scrutiny because children may be more

This report can also be used to measure future changes in children's exposure to television advertising as industry, parents, and children react to these health concerns.

Summary of Major Findings for 2004

Children's Exposure to Television Advertising   In 2004 we estimate that children ages 2{11 saw about 25,600 television advertisements. In this study, advertisements include paid ads, promotions for other programming, and public service announcements. Of these 25,600 ads, approximately 18,300 were paid ads and most of the remaining 7,300 ads were promotions for other programming. The average ad seen by children was about 25 seconds long. Thus, children saw about 10,700 minutes of TV advertising in 2004. For comparison, adults saw approximately 52,500 ads and 22,300 minutes of advertising.

Our estimates di er from other published estimates of children's exposure to television advertising; one widely cited estimate, that children see around 40,000 ads per year, is more than 50 percent higher than ours. Our estimates are based on very detailed data not available to most researchers. Most published estimates are based on aggregate estimates of the amount of time children watch television, combined with counts of ads aired per hour

Figure ES.1

Exposure to TV Advertising

on selected samples of TV programming. This approach can be accurate as long as the component estimates are accurate representations of children's viewing habits. But our results indicate, for instance, that ad-supported television accounts for only 70 percent of children's TV viewing in 2004, and children get much of their advertising exposure from prime time and other nonchildren's programming. These and related issues must be re ected in the component estimates for such aggregate estimates to be accurate.

Amount of Time Children Spend Viewing Ad-Supported Television   We estimate that in 2004 children 2{11 watched about two and one-quarter hours of ad-supported television per day, for a total of 16 hours per week, about 70 percent of their total television viewing time, about 23 hours per week. Teens, ages 12{17, watched about two and one-half hours of ad-supported television daily. Adults watched nearly four and one-quarter hours daily, almost twice as much as children, and this accounts for most of adults' greater ad exposure.

When Children Are Exposed to Ads   We nd considerable dispersion in when children accumulated their ad exposure. Saturday morning between
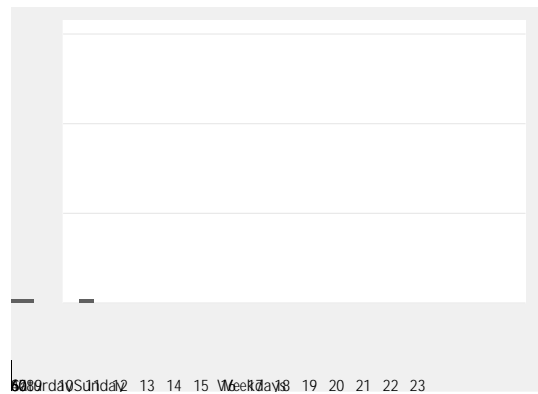
Figure ES.2

Time of Children's Exposure to Advertising

(3.5 percent); Snacks (1.9 percent); Sweetened Drinks (1.7 percent); Dairy (1.4 percent); and Prepared Entrees (0.9 percent). All other food categories combined are 3.1 percent of ad exposure.

We also group shows according to whether the children's share of the audience is at least 20 percent (family shows) or at least 50 percent (children's shows). Food advertising is a larger share of children's advertising exposure as child share increases | from 22 percent of ad exposures on all shows to 32 percent on children's shows. The proportion of children's ad exposure is higher on children's shows for all of the food categories listed above, except for Restaurant and Fast Food ads. Children get nearly 80 percent of their Cereal ad exposure on children's shows and about one-third of 54(Cereasrrcategorid2)]TJ 0 -23.908 r3 0 -23.eQl312gppeU343(

shows was from cable programming.

Changes in Children's Exposure to Advertising Between 1977 and 2004

Children's Exposure to Paid Advertising Has Fallen; Overall Ad Exposure Is Up
Studies from the FTC's Children's Advertising Rulemaking indicate that children 2{11 saw about 19,700 paid ads and 21,900 ads overall in 1977. When compared to our estimates of 18,300 paid ads and 25,600 ads in 2004, we nd that children's exposure to paid advertising fell by about 7 percent and exposure to all advertising rose by about 17 percent since 1977. This di erence re ects the substantial increase in children's exposure to promotional ads for television programming over this time period. Children saw approximately 2 percent fewer minutes of advertising and 19 percent fewer minutes of paid advertising in 2004 than in 1977. These reductions re ect the combined impact of the reduced amount of time children spend watching ad-supported television in 2004 compared to 1977 and ads that are shorter on average.

Children's Exposure to Food Advertising Has Not Risen The 1977 studies do not give a complete estimate of children's exposure to food ads, but using other data from the period we nd that food ad exposure has not risen and is likely to have fallen modestly. In our primary scenario, we estimate that children saw 6,100 food ads in 1977. This suggests that children saw about 9 percent fewer food ads in 2004 than in 1977.
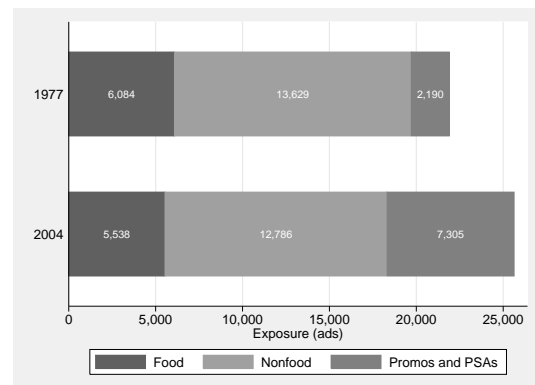
Figure ES.3

Children's Exposure: 1977 and 2004

In 1977 ads for Cereals and for Desserts and Sweets dominated children's food ad exposure, with the Restaurant and Fast Food and the

Sweetened Drinks categories also among the top categories. As seen above, in 2004 these categories were still among the top categories of food ads children saw, though Cereals and Desserts and Sweets no longer dominated. Restaurant and Fast Food ads had an increased presence, and were joined by Snacks, Dairy and Prepared Entrees as substantial sources of children's food ad exposure. Thus, the mix of food ads seen by children in 2004 is somewhat more evenly spread across these food categories than in 1977.

Children's Exposure to Ads for Sedentary Entertainment Has Grown The reduction in food advertisements seen by children has been more than compensated for by substantially increased Promotions for television programming and increased advertising for Screen and Audio Entertainment. These two categories are both larger than any food category in 2004 and exceed Games, Toys and Hobbies, which had been the top nonfood category in 1977.

Children's Ad Exposure Is More Concentrated on Children's Cable Programming in 2004 Children get approximately half of their food advertising and about one-third of their total advertising exposure from programs in which children are at least 50 percent of the audience in 2004, compared to about one quarter in 1977. Ads for some food

categoriesjoa i7.

ins with movies and television programming are all part of the marketing landscape, and research to quantify these e orts is only beginning.[3]

This study was conducted to provide a comprehensive assessment of the amount and type of television advertising seen by children in 2004. It has been nearly 30 years since the last evaluation of children's television ad exposure using detailed viewing data. Advertising seen by children has received considerable attention in recent years as a possible contributor to rising obesity in American children, and as a possible vehicle to help reverse that trend. Hopefully, this report will provide useful information to guide discussion of the issues. The report also provides a baseline against which to measure future changes in children's exposure to television advertising as parents, rms and children react to obesity concerns.

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[3]The FTC is beginning a study to attempt to gauge the extent of these other forms of marketing to children. **Federal Register** / Vol. 72, No. 74 / Wednesday, April 18, 2007 / Notices.

1 Introduction

Obesity has become a major health concern in the U.S. and other countries. As Table 1.1 shows, the fraction of the population that is overweight has increased markedly since the early 1980s. The rise in children's obesity is a particular concern, because overweight children are more likely to become overweight adults, and because obese children are likely to su er from associated medical problems such as diabetes earlier in life.

Table 1.1
Trends in Overweight Among Children, Adolescents, and Adults
Percent of population

Age	NHANES I 1971{1974	NHANES II 1976{1980	NHANES III 1988{1994	NHANES 1999{2000	NHANES 2001{2002	NHANES 2003{2004
2{5	5	5	7	10	11	14
6{11	4	7	11	15	16	19
12{19	6	5	11	16	17	17
20+		47	56	64	66	66

Source. Ogden et al. (2006) for NHANES 1999{2004; Ogden et al. (2002) for NHANES I{III for children and adolescents; and CDC (2005) for NHANES I{III for adults.
Notes. Overweight de ned as BMI for age at 95th percentile or higher on standard sex- and age-speci c CDC growth charts for children and adolescents and BMI $\geq$ 25.0 for adults.

Food marketing is among the postulated contributors to the rise in obesity rates. Food marketing to children has come under particular scrutiny because children may be more susceptible to marketing and because early eating habits may persist. Some researchers report that children's exposure to television advertising has been increasing along with the rise in children's obesity (*e.g.*, IOM 2005; Hastings et al. 2003).

This report undertakes a comprehensive analysis of children's exposure to television advertising in 2004. We estimate that, on average, children 2{11 viewed 25,629 television ads annually. Of these 5,538 were food ads (food ads constituted 21.6 percent of all children's television ad exposure).   all   alla4nnosurp

(7.5 percent), and Screen/Audio Entertainment (7.8 percent).[4]

We also examine the sources of children's advertising exposure. We nd that 41.2 percent of their exposure to TV advertising comes from shows with a relatively small children's audience (fewer than one percent of the child population watching) *and* for which the show's audience had a small percentage of children (less than 20 percent).[5] A substantial amount of their advertising exposure, 31.3 percent, comes from shows with larger children's audiences (greater than one percent of the child population) and for which the show's audience was largely made up of children (greater than 50 percent).[6] Thus, children view 72.5 percent of their ads on two distinct types of programming | general interest or adult-oriented programming with small child audiences and programming apparently (successfully) targeted to children with a large child share and audience.

We nd that 61.4 percent of children's television advertising exposure comes from cable programming. Of the cable ads children see, 35.5 percent come from general interest or adult-387(p)-28(7cws)-33(p)ith aim1(ell)-228(a)27(hildren's)-338(a)ud1(ionce)-3887(less   1-387(p)-

audience with child sudience (greater   1-386(p)-27(ercen)27(t-4267lf)-3826theopulation

the audience could have a significant impact on the mix of ads that children see. Overall, 46.9 percent of children's TV ad exposure comes from shows in which at least 20 percent of the audience is children; 33.8 percent comes from shows in which at least 50 percent of the audience is children.[7]

Second, content analysis that focuses on children's programming, defined by the time of day and day of the week, is missing a significant portion of children's advertising exposure. Over an entire week children receive 28.7 percent of their exposures during prime time and only 6.8 percent on weekend mornings.

We also review and summarize reports submitted by John Abel and J. Howard Beales to the Federal Trade Commission's 1978 Children's Advertising Rulemaking (Abel 1978; Beales 1978). Since these research reports were done in 1978, before children's obesity became a serious health problem, they provide a baseline to measure changes in children's advertising exposure on TV.

We find that children's exposure to television advertising has increased somewhat (21,904 in 1977 to 25,629 in 2004) while exposure to TV food ads has not increased and has likely decreased some since 1977. Not all food categories saw a decrease in children's viewing; we find that children's exposure to ads for Restaurants, Fast Food and Snacks has increased. On the other hand, their exposure to ads for Cereal, Desserts and Sweets has declined. Exposure to ads for Games, Toys and Hobbies also fell. The categories for which exposure

Advertising Bureau (CAB) reports 65 national cable networks. Cable reaches approximately 85 percent of households in the U.S. Of the 65 national cable networks in operation during 2004, 36 reached at least 70 percent of the national market (Cabletelevision Advertising Bureau 2006b,a,d). Cable attracted about one-third of all television advertising dollars.[8] Cable captured 43.9 percent of prime time and 46.5 percent of total daily viewing during the 2003{2004 programming season (Cabletelevision Advertising Bureau 2006c). While cable's overall share continues to increase, no single cable network is viewed by more than 40 percent of the population in an average week. In contrast, ABC, CBS, FOX, and NBC are all viewed by at least 70 percent of the population in an average week.[9]

2.3   Increasing Specialization and Segmentation

The growth in television providers has coincided with increasing specialization and market segmentation. More networks produce and distribute television programming; however, peo-

et al. 2005). Approximately 33 percent of children 6 months to 6 years old have a television in their bedroom, and for 33 percent of these, at least half of total television viewing occurs in their bedroom (Rideout and Hamel 2006). In comparison, only 45 percent of households owned more than one TV in 1977 (A. C. Nielsen Co. 1977).

With the three major networks dominating the television landscape in 1977, less specialization or market segmentation was possible. These changes as they relate to children's viewing can be seen from the relative numbers of children watching speci c programs in the two periods. In 1977 more than 24 percent of all children watched the top nine network programs; more than 10 percent of all children watched the top 60 network programs (Abel 1978, Appendix C). In contrast, in 2004 no program had 10 percent of children watching. The top ranked show by child audience size in our 2004 data drew approximately 8 percent of all children (\American Idol"). Only 11 shows in our data were watched by more than 5 percent of the 2{11 population. Few shows | 7 percent | were watched by more than one percent of the 2{11 population.

While relatively few shows had large child audiences in 2004, many shows successfully specialized in entertaining children. We will explore these issues in detail later, but a few points are appropriate here. Many shows in 2004 had audiences where children constituted a high share of the audience. Moreover, those 2004 shows with a predominantly child audience often also had a high (for 2004) child audience size. For example, about half of the top fty shows each month ranked by size of the child audience also had a child share greater than 50 percent. Finally, this overlap occurred primarily on cable; children constituted a large share of the audience for few broadcast programs.

So overall, the TV world of 1977, with fewer programs aimed at broad audiences, has shifted to a world with many more program choices, smaller audiences for those programs, and more specialized programming appealing to narrower segments of the audience, including the children of interest in this study.

3 Television Advertising in 2004

Children are exposed to advertisements as they watch television. The question of how many advertisements children see, and whether that number has increased substantially over time, has been a topic of considerable interest as investigators attempt to identify the major factors potentially contributing to the rise in childhood obesity in America. Thus, one of the rst issues we examine for 2004 is the total number of advertisements that children see. In subsequent sections we examine when and where children get their advertising exposure in 2004, what products are featured in that advertising, and how much of that advertising comes from \children's programming." We also present some information on advertising to young children.

(PSAs), and Promotions for a network's own or a liated programming. Networks that are not ad-supported are not included in our data. Therefore we have no information on Promotions on pay cable networks or sponsorship messages such as those aired on Disney and PBS.[13] The data covers both national advertising and local spot advertising and includes nearly one million national ads and nearly ve million local spot ads.[14] In addition to audience estimates for children, younger children, teens, and adults, the data includes, for each ad, information on the advertiser, the brand, the television network, the program, the time the ad aired, the ad's length, and a product code.

We use Gross Rating Points (GRPs), which represent the percentage of a given population that is estimated to be in the audience of a program or commercial, to estimate children's average exposure to advertising.[15] Multiplying the child GRP for an ad by the 2{11 population yields an estimate of the number of children who viewed that ad.

3.1   Children's Exposure to Advertising

Table 3.1 presents our estimates of children's exposure to TV advertising. We estimate that children ages 2{11 saw, on average, 25,629 television ads per year in 2004. This gure includes paid ads as well as Promos (promotions for other television programming) and PSAs (public service announcements). Young children 2{5 saw 24,939 ads per year, while older children in the group ages 6{11 saw 26,079 ads per year.[17] Average exposure to TV ads in 2004 continues to rise with age | those 12{17 saw 31,188 ads per year, while those 18 years

Table 3.1

Annual Exposure to TV Advertising by Children, Teens, and Adults

	All advertising		Paid advertising		Food advertising	
	Ads	Minutes	Ads	Minutes	Ads	Minutes
Children (ages 2-11)	25,629	10,717	18,324	7,987	5,538	2,202
Younger children (ages 2 { 5)	24,939	10,425	17,669	7,678	5,390	2,140
Older children (ages 6 { 11)	26,079	10,908	18,750	8,189	5,635	2,242
Teens (ages 12 { 17)	31,188	13,127	23,181	10,306	5,512	2,193
Adults (ages 18 and over)	52,469	22,271	39,842	18,043	7,212	2,834

Source. Sta   analysis of copyrighted Nielsen Media Research/Nielsen Monitor{Plus data; four weeks projected annually.
Note. Paid advertising excludes promotional advertising for a network's own or a   liated shows and public service announcements.

each ad in that time block). Then we can calculate the number of children-hours of TV watching over a 24-hour period by summing the number of children watching in each time block over the day. Then we divide by the population of children 2{11 to obtain the number of hours the average child watched television in that 24-hour period. This method is extended to all 4 weeks of data and averaged.

Compare this to the more common method of estimating the average amount of children's daily television viewing. Typically a sample of children (or their parents) are each asked about the number of hours per day that they watch television. Those numbers are summed and then divided by the number of children in the sample. We instead \sample" hours and check for the number of children watching in those time blocks. Note that before the   nal step | dividing by the number of children | both methods obtain comparable   gures: the total number of hours that all the children watched television.[21]

As shown in Table 3.2 we   nd that, on average, children 2{11 watch just over two and one-quarter hours (2:17) of ad-supported TV per day. Teenagers (ages 12{17) watch just over two and one-half hours (2:31) per day, and adults watch nearly four and one-quarter hours (4:10) of ad-supported television per day. Our estimates for children's viewing time

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[21]See Appendix A for a detailed description of our method.

Table 3.2
Daily Ad-Supported TV Viewing

Figure 3.1

TV Viewing Over the Day

Children ages 2{11
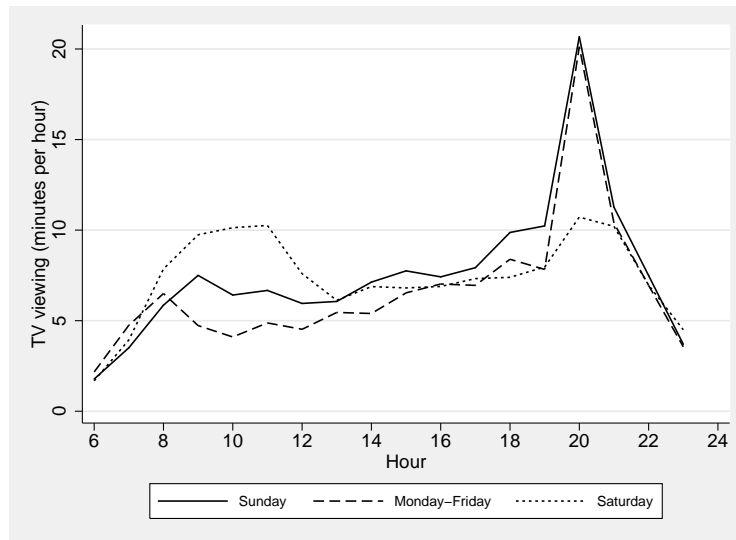
Source. Sta analysis of copyrighted Nielsen Media Research/Nielsen Monitor{Plus data; four weeks projected annually.
Note. Ad-supported TV viewing averaged across weekdays.

viewing between around 7 p.m. and 9 p.m. that peaks around 8 p.m. There is also a noticeable increase in viewing on Saturday mornings; however, minutes viewed per hour at around 8 p.m. on weeknights and Sunday is approximately twice the viewing per hour on Saturday mornings. Saturday evening viewing is comparable to Saturday morning viewing.

Figure 3.2 gives comparable information but breaks out the contribution of each weekday and stacks the time of day viewing pattern, thus showing the contribution of each hour of each day to the total week's viewing time. Over the week as a whole, children view nearly three times as much TV in the peak evening hours as in the mornings.

As Table 3.2 indicates, 66.5 percent of children's television viewing is of cable programming. Figure 3.3 indicates that the time of viewing analysis is markedly di erent for cable and broadcast networks. (Note vertical scales are di erent.) Broadcast network viewing is responsible for virtually all the prime time peak and contributes about half of the Saturday morning peak. Except for these times, broadcast viewing is lower than cable viewing. Chil-

Figure 3.2
Cumulative TV Viewing Per Hour Over the Week
Children ages 2{11
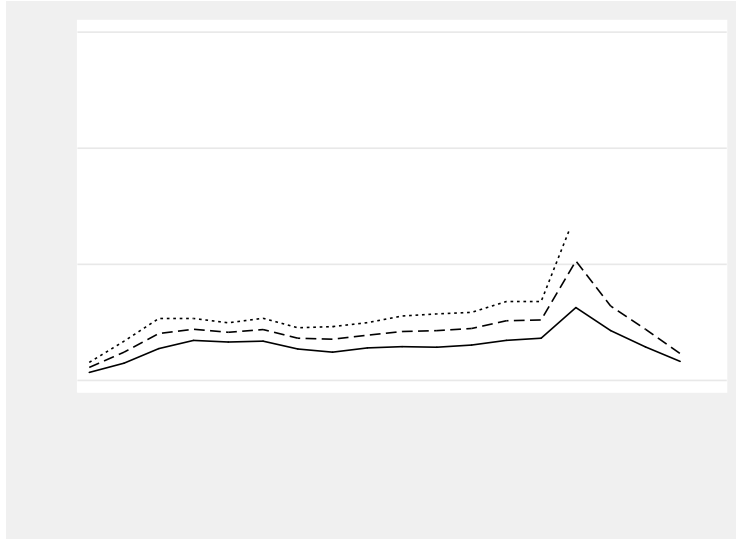
Source

Table 3.3

Percent of Advertising Exposure By Time Of Day

Children ages 2{11

Figure 3.4
Average (a) and Total (b) Exposure to TV Advertising Over the Day
Children ages 2{11
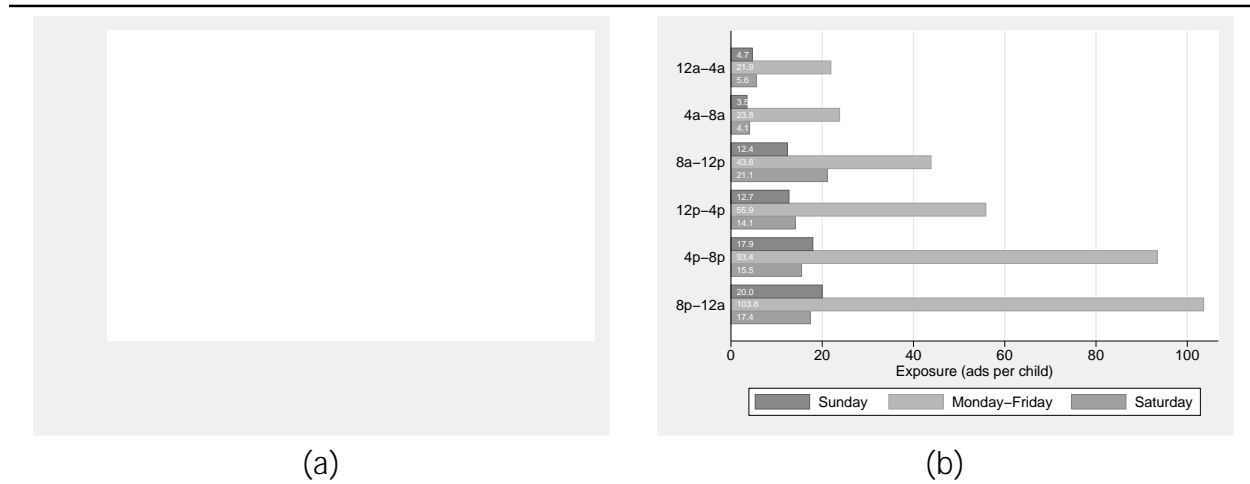
(a)   (b)

Source. Sta   analysis of copyrighted Nielsen Media Research/Nielsen Monitor{Plus data; four weeks projected annually.
Note. Average exposure represents exposure on the average weekday; total exposure represents total exposure across all weekdays. Figures on di erent scales.

weekday programming dominates children's total exposure to television advertising. Children get 21.1 percent of their ad exposure Monday through Friday between 8 p.m. and midnight; 19.0 percent of their exposure on weekdays between 4 p.m. and 8 p.m.; 11.4 percent of their exposure on weekdays between noon and 4 p.m.; and 8.9 percent of their exposure between on weekdays between 8 a.m. and noon. In total, children get 69.7 percent of their ad exposure on Monday through Friday programming.

Figure 3.4 indicates that Sunday is also a big day for ad exposure. Other than the Saturday morning 8 a.m. to noon block of time, Sunday, Saturday, and the average week day make comparable contributions to children's ad exposure. Sunday dominates Saturday in ad exposure from 4 p.m. until midnight and is close to Saturday's exposure for the noon to 4 p.m. period. Children also see more ads per time block on Sunday than the average weekday from 8 a.m. to 4 p.m. and close to the same ad exposure from 4 p.m. to midnight.

Table 3.3 and Figure 3.4 illustrate that evening programming is an important contributor to children's advertising exposure throughout the week. Children get 28.7 percent of their

Figure 3.6

Cumulative Exposure to TV Advertising Per Hour Over the Week
Children ages 2{11

Source. Sta   analysis of copyrighted Nielsen Media Research/Nielsen Monitor{Plus data; four weeks projected annually.

Figure 3.7

Cumulative Exposure to TV Advertising Per Hour Over the Week

Children ages 2{11, cable (a) and broadcast (b)
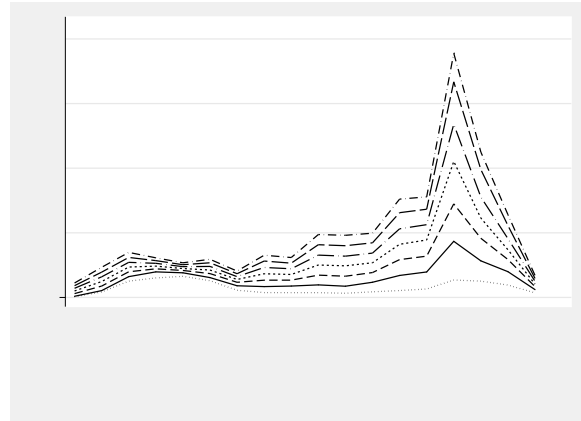
(a)   (b)

Source. Sta   analysis of copyrighted Nielsen Media Research/Nielsen Monitor{Plus data; four weeks projected annually.

higher in prime time viewing.

As with children's television viewing over the day and the days of the week, their exposure to television advertising follows di erent patterns on cable and broadcast networks. Figure 3.7 illustrates how each hour of each day contributes to the average child's total exposure to advertising on cable and broadcast programming. It is only during the evening hours of peak viewing that weekly exposure from broadcast programming surpasses exposure from cable programming.

We see that conclusions about the nature of children's exposure to television advertising based on analyses of Saturday morning programming may be misleading, as they get only 4.3 percent of their weekly ad exposure from that time/day slot. Adding weekday after-school programming to the analysis gives a broader picture of children's exposure | together, weekdays between 4 p.m. and 6 p.m. contribute 8.4 percent of children's ad exposure. However, nearly 30 percent of children's exposure to television advertising comes on programming aired between 8 p.m. and midnight, nearly double the exposure from programming in time periods often treated as representative of children's viewing. Further, we see that patterns of

viewing and ad exposure on cable networks, where 66.5 percent of their viewing takes place, are considerably di erent than on broadcast networks.

3.3   Product Advertising Seen by Children

The types of products advertised to children are not randomly chosen. From an economic point of view, we would expect producers to advertise products on children's programs that

Table 3.4

Annual Exposure to TV Advertising By Product Categories

Children 2{11

ad exposure in each of the *detailed* categories.[26] This illustrates the relative contribution of

3.4 Product Ads Viewed Vary by Type of Show

We also look at how children's exposure to product ads varies over di erent types of shows, where shows are grouped by the proportion of children in the shows' audience.[29] This is of interest for several reasons. First, we can determine whether the product mix of ads changes as the proportion of children in the audience increases. Second, we can provide information on the potential impact of any proposed advertising restrictions that are based on the proportion of children in the audience. For example, restricted advertising on children's shows would have little impact if the children are watching general interest or adult-oriented programming in larger numbers. In the next section we examine the relationship between shows' child audience size and the proportion, or share, of children in the shows' audience.[30]

We refer to the proportion of a show's audience that is children as the child audience share. For example, a child audience share of 20 percent indicates that at least 20 percent of that show's total audience is made up of children ages 2{11.[31] We group shows according to whether the children's share of the audience is at least 20 percent (referred to as *family shows*) or at least 50 percent (referred to as *children's shows*).[32] We nd that 87.7 percent of all shows have a children's audience share of less than 20 percent. Nevertheless, 47.0 percent of children's advertising exposure comes from the 12.3 percent of shows that have a children's audience share of 20 percent or more.

As shown in Table 3.5, as the share of children in the audience increases, food advertising exposure increases | from 21.6 percent on all shows, to 32.2 percent on children's shows. The proportion of ad exposure from Cereal; Desserts and Sweets; Snacks; Dairy Products; Prepared Entrees; Games, Toys and Hobbies; and Screen/Audio Entertainment all increase

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[29]More precisely, we are grouping ads based on the share of children in the audience of a particular episode at the time the ad was aired.

[30]We also looked at how exposure to di erent product categories changed as the child audience size changed. We found little in the way of systematic patterns. That analysis is described in Appendix E.

[31]Note our use of the term is di erent than the industry standard. \Share" is generally used to refer to the percent of people watching television who are tuned to a given show.

[32]In some tables and gures, we examine ad exposure on shows with a child share between 20 and 50 percent and refer to that grouping as family shows as well. Labels will clearly indicate whether we are talking about the 20 to 50 percent range or all shows with a child share greater than 20 percent.

Table 3.5

Annual Exposure to TV Advertising By Child Share of Audience

Children ages 2{11

Category	All ads		Share ≥ 20%		Share ≥ 50%	
	Ads	%	Ads	%	Ads	%
Cereal	993	3.9	888	7.4	782	9.0
Desserts and Sweets	898	3.5	655	5.4	520	6.0
Restaurants and Fast Food	1,367	5.3	656	5.5	436	5.0
Snacks	490	1.9	389	3.2	341	3.9
Dairy Products	353	1.4	271	2.3	239	2.8
Sweetened Drinks	430	1.7	234	1.9	162	1.9
Prepared Entrees	222	0.9	141	1.2	113	1.3
Other Food	786	3.1	280	2.3	198	2.3
All Food Products	5,538	21.6	3,515	29.2	2,792	32.2
Games, Toys and Hobbies	1,909	7.5	1,827	15.2	1,629	18.8
Screen / Audio Entertainment	2,010	7.8	1,205	10.0	888	10.2
Sports and Exercise	24	0.1	16	0.1	12	0.1
Promos and PSAs	7,305	28.5	3,552	29.5	2,474	28.5
Other Nonfood	8,842	34.5	1,923	16.0	877	10.1

;53e8md S/F20t:
923   16

Figure 3.8
Annual Exposure to TV Advertising, Selected Categories
Children ages 2{11

Table 3.6

Percent of Ad Viewing from Children's and Family Shows

	Children			Teens	Adults
	2{11	2{5	6{11	12{17	18 and over
Child 2{11 audience share ≥ 50%					
Food	50.4	55.1	47.5	15.4	3.1
Promos and PSAs	33.9	36.8	32.0	9.6	1.6
Other Nonfood	26.6	31.0	24.0	5.8	0.8
Total	33.8	37.9	31.3	8.5	1.3
Child 2{11 audience share ≥ 20%					
Food	63.5	66.1	61.8	26.7	6.1
Promos and PSAs	48.6	49.9	47.8	20.2	4.2
Other Nonfood	38.9	41.2	37.5	13.5	2.5
Total	47.0	49.1	45.6	17.6	3.4

Source. Sta   analysis of copyrighted Nielsen Media Research/Nielsen Monitor{Plus data; four weeks projected annually.

than 20 percent of the audience. This data suggests that toy ads are highly targeted to children. Similar patterns are seen for Cereal and Snacks, also suggesting that ads in these categories are targeted to children. In contrast, of the 1,367 ads children saw for Restaurants and Fast Food, 32 percent are seen on children's shows while 52 percent are seen on shows where children are less than 20 percent of the audience, suggesting that children are less targeted for these products. The Sweetened Drinks category has a similar ad distribution, suggesting that children are not the primary targets for this advertising. Overall, 50 percent of children's exposure to food advertising comes from children's shows.

We have seen that children's ad exposure comes from all types of programming; Table 3.6 shows that the same is not true for teens and adults. Children get 50.4 percent of their food ad exposure from children's shows. In contrast, teens and adults get very little of their food ad exposure from children's shows | 15.4 and 3.1 percent. While not quite as pronounced, a similar pattern holds on family shows. Children get 63.5 percent of their food ad exposure, and 47.0 percent of all ad exposure, from these shows. Teens get 26.7 percent of their food

ad exposure from these shows and just 17.6 percent of overall ad exposure. Adults still get a very small fraction of their ad exposure on shows where the audience is more than 20 percent children; only 6.1 percent of their food ads and 3.4 of their overall exposure is from these shows. Therefore, changes in advertising on children's shows, or even family shows, would have little e ect on the advertising adults see and a moderate impact on teens' advertising exposure.

3.5   How Are Children's Audience Size and Share Related?

Examining ad exposure based on the children's audience share of programming suggests that children are being targeted with advertising for speci c categories of products. This is not surprising given the number of television channels with specialized programming content that is intended to appeal to children and the types of products children are likely to purchase or in uence. But the shows with a large share of children in the audience are not necessarily the shows that have the largest number of children watching. And the relationship between child audience share and child audience size, or the number of children watching, may vary across the di erent sources of programming. This section examines these issues.

We group shows by size according to whether they are watched by fewer than 1 percent of children, between 1 and 3 percent of children, or more than 3 percent of children. We nd that, in our data, there are no shows watched by more than 10 percent of children and few (less than 1 percent) watched by more than 5 percent of children. In contrast, 86 percent of shows are watched by fewer than 0.2 percent of children and 96 percent are watched by fewer than 1 percent of children. As indicated in Table 3.7, about half of children's ad exposure comes from shows with fewer than 1 percent of children watching and less than 20 percent of exposure comes from shows watched by more than 3 percent of children.

Table 3.7 presents the distribution of ad exposure for ads by child audience size, as measured by Gross Rating Points (GRPs), and child audience share for our data. The top panel illustrates this distribution for all ads. Each cell in the central box represents the

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Table 3.7

Percent of Ad Exposure By Audience Size (GRP) and Audience Share
Children ages 2{11

All ads   25,629 ads

		Share		
GRP	0{20	20{50	$\geq$ 50	Total
0.0 { 1.0	41.2	5.3	2.5	49.1
1.0 { 3.0	8.6	5.9	17.9	32.4
$\geq$ 3.0	3.2	1.9	13.4	18.5
Total	53.0	13.1	33.8	100.0

Ads on Cable   61.4% exposure

		Share		
GRP	0{20	20{50	$\geq$ 50	

Table 3.8

Percent of Food Ad Exposure By Audience Size (GRP) and Audience Share
Children ages 2{11

All ads   5,538 ads

GRP	Share 0{20	20{50	$\geq$ 50	Total
0.0 { 1.0	27.1	4.7	3.0	34.8
1.0 { 3.0	7.0	6.6	25.4	39.0
$\geq$ 3.0	2.5	1.8	22.0	26.3
Total	36.5	13.0	50.4	100.0

Ads on Cable   72.0% exposure

GRP	Share 0{20	20{50	$\geq$ 50	Total
0.0 { 1.0	21.6	4.9	4.1	30.6
1.0 { 3.0	0.2	4.8	34.9	39.9
$\geq$ 3.0	0.0	0.0	29.4	29.4
Total	21.8	9.8	68.4	100.0

Ads on Broadcast   28.0% exposure

GRP	Share 0{20	20{50	$\geq$ 50	Total
0.0 { 1.0	41.1	4.1	0.3	45.5
1.0 { 3.0	24.3	11.1	1.0	36.4
$\geq$ 3.0	8.8	6.3	3.0	18.1
Total	74.3	21.5	4.2	100.0

Source. Sta analysis of copyrighted Nielsen Media Research/Nielsen Monitor{Plus data; four weeks projected annually.

20 percent.

Food Advertising

Table 3.8 presents the comparable child audience distribution data as Table 3.7, but restricted to food advertising. The audience pattern is similar to the overall distribution, with children's food ad exposure somewhat more concentrated on cable programming and on children's programming on cable networks.

In this case we nd that, for all food ads, 47.4 percent of children's exposure comes from programming with a high children's share and with a children's audience of at least one percent of the child population. A much smaller fraction of their food ad exposure, 27.2 percent, comes from shows with a low children's share and a small children's audience. Overall, children's exposure to food ads is more concentrated in children's programming than exposure to ads for other products; 50.4 percent of exposure to food ads comes from shows with a children's share of at least 50 percent, compared to 33.8 percent of exposure to ads for all products.

We also see that children's exposure to food ads is somewhat more concentrated on cable programming | 72.0 percent of children's food ad exposure comes from cable, compared to 61.4 of all ad exposure. On cable programming 68.4 percent of food ad exposure comes from shows with a children's share of at least 50 percent, compared to 52.9 percent of exposure to ads for all products. While 35.5 percent of cable ads are seen on programs with an audience that has a small child share (less than 20 percent) and size (less than 1 percent of

Table 3.9
Annual Exposure to TV Advertising

children's average annual ad exposure in each product category along with the percentage contribution of that category to total ad exposure. Younger children's television ad exposure is very similar to that of children ages 6{11, shown in the second set of columns. The younger children see 1,140 fewer ads per year than 6{11 year olds, on average, primarily because they are watching slightly less television than older children. However, the mix of products they view in ads is strikingly similar to that viewed by children 6{11. The largest di erences are in Games, Toys and Hobbies which contribute 1.5 percentage points more to younger children's exposure and Other Nonfood which contributes 1.9 percentage points less to their exposure. Within the food categories, the largest di erences are that younger children see more Cereal ads and fewer ads for Restaurants and Fast Food, but both di erences are smaller than one percentage point.

Unlike children 2{11, younger children get only a small percentage of their television ad exposure from shows in which they make up at least a 50 percent share of the audience.[35] Table 3.10 presents the number of ads and percent of ad exposure from shows categorized by their share of children 2{5 years of age. The table shows that younger children get only 4.2 percent of their food ad exposure, and 3.8 percent of total exposure, on shows in which they are at least half of the audience. Younger children get 51.3 percent of their food ad exposure on shows in which they make up at least 20 percent of the audience; they get 36.0 percent of total ad exposure from those shows.

Table 3.11 presents the distribution of the audience of younger children (2{5) by young child audience size and audience share. Younger children get 64.0 percent of their exposure to ads from shows with a 2{5 audience share less than 20 percent. Nearly half their ad exposure is on shows with a small 2{5 audience size, that is, less than one percent of the 2{5 population. Younger children get 64.2 percent of their annual advertising exposure from cable programming, compared to 61.4 percent for children 2{11. They get 38.6 percent of

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[35]Because of their smaller proportion in the population, it is, of course, more di cult for younger children to constitute 50 percent of any audience. Children 2{5 are 5.6 percent of the two and over U.S. population; children 2{11 are 14.3 percent of the two and over U.S. population.

Table 3.10

Annual Exposure to TV Advertising By Younger Children's Share of Audience
Younger children ages 2{5

Category	All ads		Share $\geq$ 20%		Share $\geq$ 50%	
	Ads	%	Ads	%	Ads	%
Cereal	1,031	4.1	770	8.6	79	8.3
Desserts and Sweets	857	3.4	477	5.3	6	0.7
Restaurants and Fast Food	1,252	5.0	456	5.1	50	5.2
Snacks	499	2.0	331	3.7	18	1.9
Dairy Products	370	1.5	251	2.8	28	2.9
Sweetened Drinks	388	1.6	147	1.6	0	0.0
Prepared Entrees	218	0.9	106	1.2	5	0.6
Other Food	776	3.1	226	2.5	41	4.2
All Food Products	5,390	21.6	2,764	30.8	227	23.8
Games, Toys and Hobbies	2,092	8.4	1,710	19.0	217	22.8
Screen / Audio Entertainment	1,853	7.4	846	9.4	38	4.0
Sports and Exercise	21	0.1	11	0.1	0	0.0
Promos and PSAs	7,270	29.2	2,575	28.7	214	22.4
Other Nonfood	8,314	33.3	1,078	12.0	258	27.0
All Nonfood Products	19,549	78.4	6,220	69.2	727	76.2
Total	24,939		8,985		954	

Source. Sta   analysis of copyrighted Nielsen Media Research/Nielsen Monitor{Plus data; four weeks projected annually.

Table 3.11

Percent of Ad Exposure By Audience Size (GRP) and Audience Share
Younger children ages 2{5

All ads   24,939 ads

GRP	0{20	Share 20{50	$\geq$ 50	Total
0.0 { 1.0	45.3	3.3	0.1	48.6
1.0 { 3.0	15.0	13.8	0.0	28.8
$\geq$ 3.0	3.8	15.1	3.7	22.6
Total	64.0	32.2	3.8	100.0

Ads on Cable   64.2% exposure

GRP	0{20	Share 20{50	$\geq$ 50	Total
0.0 { 1.0	38.2	4.9	0.1	43.2
1.0 { 3.0	7.3	20.9	0.0	28.2
$\geq$ 3.0	0.3	22.6	5.7	28.6
Total	45.8	48.4	5.8	100.0

Ads on Broadcast   35.8% exposure

GRP	0{20	Share 20{50	$\geq$ 50	Total
0.0 { 1.0	57.8	0.5	0.0	58.3
1.0 { 3.0	28.7	1.1	0.1	29.8
$\geq$ 3.0	10.0	1.7	0.2	11.9
Total	96.5	3.2	0.3	100.0

Source. Sta analysis of copyrighted Nielsen Media Research/Nielsen Monitor{Plus data; four weeks projected annually.

their exposure from broadcast programming. But virtually all of that broadcast exposure (96.5 percent) is from shows in which younger children make up less than 20 percent of the audience.

Taken together, this evidence indicates that any restrictions on advertising based on audience share for younger children (2{5) would a ect only cable programming. And if restricted to programs with more than a 50 percent share of younger children, these restrictions would a ect few programs and few of the ads that these children see.

3.7   Teenagers and Adults

Table 3.12 presents estimated annual ad exposure for teenagers and adults, as well as children, to allow us to compare ad exposures across the three age groups.

Teenagers (those ages 12{17) see, on average, 31,188 ads per year | 5,512 food ads and 25,677 ads for other goods. Food ads constitute 17.7 percent of all the ads teens saw in 2004, a somewhat smaller proportion than that for children. The largest categories of food ads viewed are Restaurants and Fast Food (5.9 percent of all ad exposure), Desserts and Sweets (2.6 percent), and Sweetened Drinks (1.9 percent).

The largest nonfood categories are Promos and PSAs (25.7 percent of all advertising exposure) and Screen/Audio Entertainment (8.4 percent). Games, Toys and Hobbies contribute only 2.5 percent to teenagers' ad exposure.

Adults, on average, see 52,469 ads per year | 7,212 food ads and 45,257 ads for other products. Food ads constitute 13.7 percent of all the ads adults saw in 2004. The only sizeable food category in adults' ad exposure is Restaurants and Fast Food, at 4.9 percent. Promos and PSAs make up 24.1 percent of their overall exposure to advertising.

The Other Nonfood category contributes the most to overall advertising exposure for all age groups. It is 34.5 percent of children's overall exposure, 45.6 percent of teenager's overall exposure, and 56.9 percent of adults overall advertising exposure. Services and products in Other Nonfood include clothing and accessories, prescription and OTC drugs, professional

Table 3.12

Annual Exposure to TV Advertising

Children ages 2{11, teens ages 12{17 and adults ages 18 and over

Category	Children		Teens		Adults	
	Ads	%	Ads	%	Ads	%
Cereal	993	3.9	492	1.6	477	0.9
Desserts and Sweets	898	3.5	806	2.6	754	1.4
Restaurants and Fast Food	1,367	5.3	1,836	5.9	2,546	4.9
Snacks	490	1.9	332	1.1	356	0.7
Dairy Products	353	1.4	260	0.8	338	0.6
Sweetened Drinks	430	1.7	584	1.9	479	0.9
Prepared Entrees	222	0.9	180	0.6	323	0.6
Other Food	786	3.1	1,021	3.3	1,939	3.7
All Food Products	5,538	21.6	5,512	17.7	7,212	13.7
Games, Toys and Hobbies	1,909	7.5	778	2.5	414	0.8
Screen / Audio Entertainment	2,010	7.8	2,633	8.4	2,323	4.4
Sports and Exercise	24	0.1	24	0.1	47	0.1
Promos and PSAs	7,305	28.5	8,007	25.7	12,627	24.1
Other Nonfood	8,842	34.5	14,235	45.6	29,846	56.9
All Nonfood Products	20,091	78.4	25,677	82.3	45,257	86.3
Total	25,629		31,188		52,469	

Source. Sta   analysis of copyrighted Nielsen Media Research/Nielsen Monitor{Plus data; four weeks projected annually.

Table 4.1

Coverage of the Abel and Beales Reports

	Abel	Beales
Source of advertising	Network	Non-network
Unit of analysis	Shows	Dayparts
Data coverage		
All programming	|	Yes
Child share ≥ 20%	Yes	Yes
Child share ≥ 30%	Yes	Yes
Child share ≥ 50%	Yes	Yes
Child audience ≥ 3.5 million	Yes	|
Child audience ≥ 5 million	Yes	|
Child audience ≥ 8 million	Yes	|

Source. Abel (1978); Beales (1978).
Note. Child refers to a child ages 2{11.

4.1.1   Overview of National Network Television Landscape in the Late 1970s

The three network shows with the largest share of children in the audience for February and May were \Jabberjaw," \Captain Kangaroo," and \Tom-Jerry-Mumbly Show;" children made up between 72 and 76 percent of their audiences. In November, the three shows with the largest children's audience share were \All New Superfriends Hour," \Captain Kangaroo," and \C B Bears;" children made up between 69 and 71 percent of their audiences. Children made up between 15 and 19 percent of the audience for shows at the bottom of the list of the 50 shows with the highest children's audience share. Examples of shows in this range include \Gong Show," \The Price is Right," \Good Times," and \Family Feud." Overall, in 1977 there were fewer than 25 shows with a child audience share greater than 50 percent.

The two shows with the largest number of children in the audience for all three months were \Happy Days" and \Laverne and Shirley." \Happy Days" had between 10 and 16 million children in the audience in these three months. Shows with the ftieth largest

Table 4.2
Composition of Summary Categories in 1977

Categories	Abel's Detailed Categories
Cereal	Regular Cereal
	Highly Sugared Cereal
Desserts and Sweets	Candy
	Desserts and Dessert Ingredients
	Cakes, Pies and Pastries
	Regular Gum
	Cookies
	Ice Cream
Snacks	Appetizers, Snacks and Nuts
	Crackers
Sweetened Drinks	Regular Carbonated Beverages
	Non-carbonated Beverages
Restaurants and Fast Food	Restaurants and Drive-ins
Other Food Products	Beer, Wine and Mixers
	Diet Carbonated Beverages
	Fruit Juices
	Sugarless Gum
	Canned Fruit
	Raisins
	Fresh Fruit
	Other Food and Beverages
Games, Toys and Hobbies	Games, Toys and Hobbies
Bicycles	Bicycles
Other Nonfood Prodcuts	Dental Supplies
	Footwear
	Other Nonfood Advertising

Source. Abel (1978).
Note. Beales (1978) used the same categories as Abel (1978).

Table 4.3

Annual Exposure to National Advertising in 1977 By Audience Share

Children ages 2{11, national advertising

Category	Share ≥ 20%		Share ≥ 30%		Share ≥ 50%	
	Ads	%	Ads	%	Ads	%
Cereal	595	21.8	548	29.7	513	32.0
Desserts and Sweets	373	13.7	302	16.3	271	16.9
Restaurants and Fast Food	113	4.1	58	3.1	52	3.3
Snacks	35	1.3	20	1.1	13	0.8
Sweetened Drinks	62	2.3	33	1.8	25	1.6
Other Food	401	14.7	145	7.8	118	7.4
All Food Products	1,579	57.7	1,105	59.9	993	61.9
Games, Toys and Hobbies	610	22.3	593	32.1	551	34.3
Sports and Exercise	0	0.0	0	0.0	8	0.5
Other Nonfood	546	20.0	148	8.0	52	3.3
All Nonfood Products	1,156	42.3	741	40.1	611	38.1
Total	2,735		1,846		1,604	

Source. Abel (1978, Tables XVI, XVII and XVIII).

Notes. Share refers to the average child share of the audience for each shoBT/F29DiBotSharefor E0posurs10dvertisi(e)-n4(the)-llh shos.ising

Table 4.4
Annual Exposure to National Advertising in 1977 By Audience Size
Children ages 2{11, national advertising

Category	Size ≥ 3.5 million		Size ≥ 5 million		Share ≥ 8 million	
	Ads	%	Ads	%	Ads	%
Cereal	303	10.5	189	9.1	78	6.4
Desserts and Sweets	273	9.5	166	8.0	50	4.2
Restaurants and Fast Food	116	4.0	84	4.0	53	4.4
Snacks	127	4.4	113	5.4	8	0.7
Sweetened Drinks	53	1.8	37	1.8	17	1.4
Other Food	483	16.8	373	17.9	271	22.4
All Food Products	1,355	47.1	961	46.1	477	39.5
Games, Toys and Hobbies	313	10.9	179	8.6	127	10.6
Sports and Exercise	0	0.0	0	0.0	0	0.0
Other Nonfood	1,209	42.0	945	45.3	602	49.9
All Nonfood Products	1,522	52.9	1,124	53.9	730	60.5
Total	2,877		2,086		1,207	

Source. Abel (1978, Tables XIX, XX and XI).
Notes. Audience size refers to the average number of child viewers for each show. Abel (1978) did not report exposure to advertising on all shows.

4.2 Beales' Study of Spot Ads

Beales' 1978 research examined the patterns of children's and adults' exposure to spot tele-vision advertising.[43] Spot television is de ned as non-network advertising that local network a liates and independent stations carry for local, regional or national advertisers (Abel 1978). Advertising data were obtained from Broadcast Advertiser's Reports, Inc., and cov-ered approximately 267 television stations located in 75 of the largest US television markets. Each station was monitored for one week in each of four months | February, May, July, and November of 1977. These data were matched with audience data from Arbitron Television Daypart Audience Summary to capture exposure to advertising. Data were accumulated separately for each of 17 dayparts. Dayparts are de ned as a speci ed period of time, on a speci ed day (or days) of the week, on a speci ed station. Table 4.5 lists these dayparts. This is the unit of analysis for this research, which is similar to the concept of a program, though a daypart typically cont28(ys)3(lit)27(ahiso8 Td [(aooarts.d23.90atc)cs8o3noarysspt872 742.2n(ot)h)1(par

Table 4.5
Dayparts Used in Beales' Analysis

	Eastern & Pacific	Central & Mountain
Monday { Friday	7:00 am { 9:00 am	7:00 am { 9:00 am
	9:00 am { Noon	9:00 am { Noon
	Noon { 4:30 pm	Noon { 3:30 pm
	4:30 pm { 6:00 pm	3:30 pm { 5:00 pm
	6:00 pm { 7:30 pm	5:00 pm { 6:30 pm
	7:30 pm { 8:00 pm	6:30 pm { 7:00 pm
	11:00 pm { 11:30 pm	10:00 pm { 10:30 pm
	11:30 pm { 1:00 am	10:30 pm { Midnight
Saturday	8:30 am { 1:00 pm	8:30 am { 1:00 pm
Saturday & Sunday	1:00 pm { 5:00 pm	1:00 pm { 4:00 pm
Sunday { Saturday	8:00 pm { 11:00 pm	7:00 pm { 10:00 pm

Source. Beales (1978, Table A2).

which children make up at least 20 percent, 30 percent, and 50 percent of the audience. This table shows that toy advertising dominates on local advertising. Children are exposed to about three times as much advertising for Games, Toys and Hobbies as for Cereal, the largest category of food advertising exposure. Over all dayparts, food advertising makes up 26 percent of all children's advertising exposure on local ads. When restricted to dayparts where at least 50 percent of the audience is children, food advertising is nearly 27 percent of all local advertising seen by children; in these shows, 29 percent of ad exposure is from toy advertising.

The share of food ad exposures is fairly steady between 25 and 27 percent as the fraction of children in the audience increases. Cereal ads contribute an increasing portion of advertising exposure as the share of children in the audience increases | from four percent in all programming to 10 percent in dayparts with 50 percent or more children. Dessert and Sweets ads increase slightly in prevalence as the share of children grows, as do ads for Restaurants and Fast Food. Ads for Sweetened Drinks and Other Food decline in prevalence as the share of children increases. Ads for Games, Toys and Hobbies increase more

Table 4.6
Annual Exposure to Local Advertising in 1977 By Daypart Audience Share
Children ages 2{11, local advertising

Category	All dayparts		Share ≥ 20%		Share ≥ 30%		Share ≥ 50%	
	Ads	%	Ads	%	Ads	%	Ads	%
Cereal	469	4.2	433	6.3	405	7.4	282	10.3
Desserts and Sweets	546	4.9	420	6.1	346	6.4	176	6.4
Restaurants and Fast Food	632	5.6	379	5.5	305	5.6	169	6.1
Snacks	38	0.3	14	0.2	8	0.1	2	0.1
Sweetened Drinks	273	2.4	146	2.1	101	1.9	36	1.3
Other Food	984	8.8	380	5.5	241	4.4	70	2.5
All Food Products	2,941	26.3	1,774	25.7	1,406	25.8	735	26.7
Games, Toys and Hobbies	1,359	12.1	1,305	18.9	1,199	22.0	793	28.8
Sports and Exercise	30	0.3	28	0.4	25	0.5	12	0.4
Other Nonfood	6,864	61.3	3,793	55.0	2,813	51.7	1,211	44.0
All Nonfood Products	8,253	73.7	5,125	74.3	4,037	74.2	2,015	73.3
Total	11,194		6,899		5,443		2,751	

Source. Beales (1978, Tables 1, B-3, B-6 and B-9).
Note. Columns re ect exposure to advertising when children constitute at least 20%, 30%, and 50% of the average audience for a daypart.

substantially as children's share of audience increases | these are 12 percent of exposure on all programming and 29 percent of exposure in dayparts in which children have at least a 50 percent share.

Food advertising was a far smaller portion of children's exposure from local advertising in

5 What Can We Say About 1977 and 2004?

One of our goals in this study is to examine how children's exposure to television advertising has changed from 1977 to 2004. We use Abel (1978), Beales (1978), and an NSF study, Adler et al. (1977), to assess how children's exposure has changed. Children's exposure to television advertising rose slightly from 1977 to 2004, due to increased exposure to Promos. Children's exposure to food advertising almost certainly declined, in our estimate by about 9 percent.

5.1 Children's Overall Ad Exposure: 1977 and 2004

We cannot compute children's overall exposure to television advertising directly from Abel (1978) and Beales (1978) because Abel did not analyze children's exposure to advertising on all network shows. Instead, we turn to other publicly available information for children's exposure to advertising in 1977.

A 1977 National Science Foundation study headed by Richard Adler examined children's exposure to television advertising from all programming. The study estimated that children ages 2{11 saw, on average, 21,904 ads per year, 19,714 of which were paid ads (Adler et al. 1977). Throughout this section, we use the Adler et al. (1977) estimate for children's overall exposure to advertising in 1977.[45]

Table 5.1 presents our 2004 estimates, as well as those based on the Adler study. Note that, in 2004, children, ages 2{11, are estimated to have seen 18,324 paid ads | 7 percent fewer paid ads than in the late 1970s. However, the large increase in Promos and PSAs seen by children led to a 17 percent increase in overall ad exposure; in 2004, children, on average, saw 25,629 ads, up from 21,904 in 1977. Two countervailing factors contributed to these changes. First, children, on average, watched fewer hours of TV per day in 2004 than in

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[45]The Adler et al. (1977) estimate is consistent with other publicly available information from the period. For example, according to *Economist* (1981), network affiliates accounted for 93 percent of all TV viewing in 1975. Suppose this also held in 1977. In 1977, networks supplied about 70 percent of affiliates' programming and about two-thirds of ads on network programming (Abel 1978). These figures, combined with Beales' non-network exposure estimate implieen'sestimatebw, on average, 21,948 ads.

5.2   Exposure to Food Advertising: 1977 and 2004

The two reports by Abel and Beales are, to date, the most comprehensive analyses of children's exposure to television advertising. Since they look at children's ad exposure in 1977 prior to the rise in children's obesity rates, these reports provide a baseline against which to compare recent exposure to television advertising. However, some limitations should be noted in comparing the 1977 and 2004 results.

First, the two 1977 reports are not directly comparable to each other. Abel had ratings data and advertisement descriptions at the TV program level. Because Beales was examining local spot ads, and programming varies by locality, his units of observation were dayparts. Therefore, Beales' dayparts with a particular child audience share are not directly comparable to Abel's shows with such a share. Of course, it would be legitimate to compare, and combine, children's exposure on *all* shows and *all* dayparts. This brings us to the second limitation.

Abel did not analyze exposure to advertising on all network shows, only those for which children were at least 20 percent of the audience.[47] Thus, we do not have a direct measure of the pattern of children's *overall* exposure to ads in the various product categories; the ads from network shows with less than 20 percent child audience share are missing. Despite these limitations, together with other information from the period | including Adler et al. (1977) | much can be learned from the comparisons that can be made.

To assess whether children are seeing more or less food advertising in 2004 compared to 1977, we begin by using the Adler et al. (1977) estimate of children's overall exposure to advertising to obtain an estimate of the amount of network advertising exposure that is missing from Abel's analysis. Adler et al. (1977) estimated that children saw 21,904 ads, 2,190 (10 percent of the total) of which were Promos and PSAs. Recall that neither Abel nor Beales had estimates of exposure to Promos or PSAs. Table 5.2 summarizes the data we have from various studies under the assumption that the percentage of Promos and PSAs was

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[47]Abel also analyzed shows watched by at least 3.5 million children. However, in assessing children's food ad exposure in 1977 we will focus on his sample selected by the child audience share.

distributed evenly across the types of programming,[48] and shows that an estimated 6,427 ad exposures must have come from the missing network programs with a child audience share of less than 20 percent.[49]

Table 5.2
Children's Exposure Estimates From Available Studies: 1977 and 2004

	Paid Advertising			Promos &	
	Food	Nonfood	Total	PSAs	Total
1977					
Adler			19,714	2,190	21,904
Abel	1,579	1,156	2,735	304[b]	3,039[a]
Beales	2,941	8,253	11,194	1,244[b]	12,438[a]
Missing	1,564[d]	4,221[d]	5,785	643[b]	6,427[c]
2004					
FTC	5,538	12,786	18,324	7,305	25,629

Source. Sta estimates based on Abel (1978), Beales (1978), and Adler et al. (1977) for 1977. Sta analysis of copyrighted Nielsen Media Research/Nielsen Monitor{Plus data; four weeks projected annually for 2004.
Note.

Figure 5.1
Annual Exposure to TV Advertising: 1977 versus 2004
Children ages 2{11
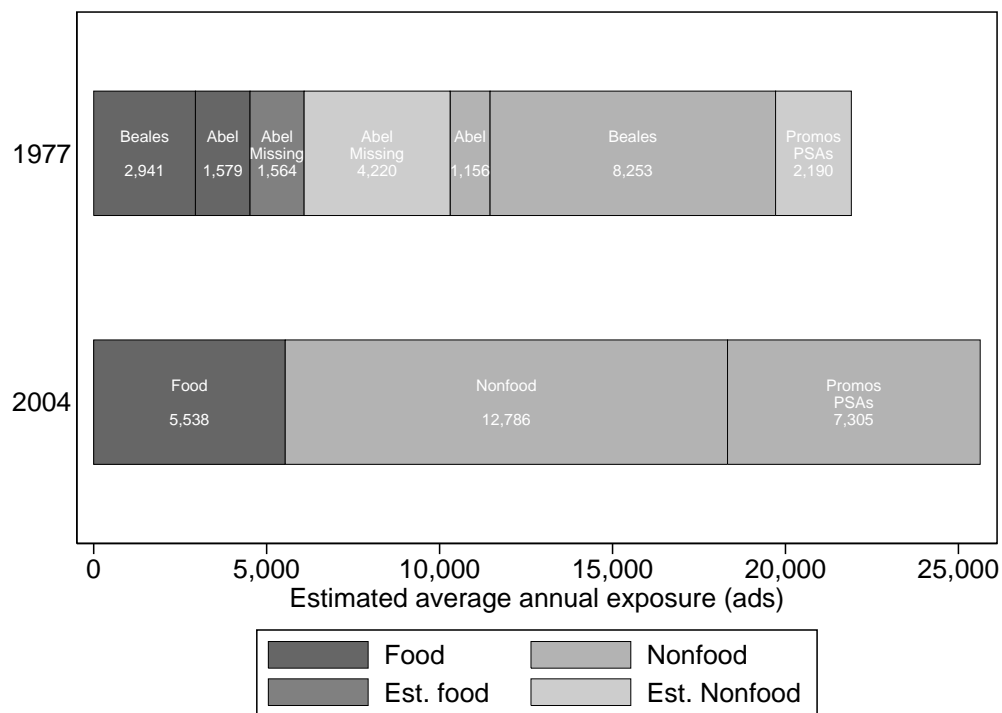
Source. Sta estimates based on Abel (1978, Tables XVI, XVII and XVIII), Beales (1978, Tables 1, B-3, B-6 and B-9), and Adler et al. (1977) for 1977. Sta analysis of copyrighted Nielsen Media Research/Nielsen Monitor{Plus data; four weeks projected annually for 2004.

approximately 33.2 percent of children's exposures from national ads were for food products,

annual exposure of 25,629 ads per year. The upper bar shows, from left to right, children's estimated food ad exposure from spot ads (Beales' data) and then their estimated food ad exposure from the subset of network shows analyzed by Abel. The third segment represents our estimate of children's exposure to food ads from the network shows excluded from Abel's analysis (1,564 food ads). The next segment represents the estimated exposure to nonfood ads from the excluded network shows (4,220 nonfood ads). The remaining segments show Abel's and Beales' estimates of children's exposure to nonfood ads and the Adler et al. (1977) estimate of exposure to Promos and PSAs. The overall horizontal width of the bar represents the Adler et al. (1977) estimate of the 1977 average annual exposure of 21,904 ads per year.

Thus, under this scenario, children's exposure to food ads would have fallen modestly since 1977, from 6,084 to 5,538 food ads, or by about 9 percent.[56]

While we believe this is a conservative and reasonable estimate of children's exposure to food ads in 1977, we also recognize that it is based on less detailed and speci c data than the other estimates and analyses in this report. As a check on the core nding that children's exposure to food ads has not increased, we note from Table 5.4 that food ad spending on national network television is 24.4 percent of total ad spending on that medium in 1977. Note also from the table that for all the show groupings analyzed by Abel, the percent of children's food ad exposure is greater than the percent of food ad expenditure. We also see this pattern in the 2004 data, where food ad spending on network shows is 17.1 percent, while children's exposure to food ads on those shows is 22.6 percent. Together this evidence suggests, without any additional assumptions, that the proportion of children's national food ad exposure on all shows in 1977 should be greater than 24.4 percent, the percent of expenditure on food ads. Further, we can determine that children's national food ad exposure at any level above 27.4 percent of their total national ad exposure would imply a decrease in their exposure to food ads.[57] Therefore, it is only in the range where food

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[56]The other aphe57

ad exposure is between 24.4 percent and 27.4 percent that children's exposure to food ads could have plausibly increased since 1977. If food ad exposure were 27.4 percent of total ad exposure, the ratio of food ad exposure to food ad expenditure would have been 1.12, a ratio only seen on largely children's shows and greatly exceeded for all other show groupings.[58]

Thus, the available evidence indicates that children's exposure to food advertising has almost certainly declined since 1977, in our estimate by about 9 percent.

5.3   Changes in Exposure by Product Category

While coverage of the Abel data limits our ability to get precise estimates of children's ad exposure at the product category level in 1977, for most categories we can reasonably assess whether exposure has decreased or increased since 1977. For some categories, the exposure measured by Abel and Beales is greater than measured exposure for 2004 | clearly showing that if we had exposure for the \missing" shows, total exposure in 1977 must be greater than in 2004. For other categories, the exposure measured in 1977 is so much lower than that measured in 2004 that it is very likely that exposure was higher in 2004 than in 1977 | that is, the number of ads in that product category would have to be implausibly high in the \missing" shows for this not to be the case.

Table 5.5 gives children's ad exposure by product category from the various studies. The data indicates that children's exposure to TV ads for Cereal and Desserts and Sweets was lower in 2004 than in 1977. Children's 1977 exposure to Cereal ads on the programming analyzed by Abel and Beales was 1,064, while their exposure (on all shows) was 993 in 2004.

Table 5.5

Children's Exposure to Advertising Product Categories: 1977 and 2004

Category	1977						2004	
	Abel		Missing		Beales		FTC	
	20%+ Share		Estimated[d]		All Dayparts		All Ads	
	Ads	%	*Ads*	%	*Ads*	%	*Ads*	%
Cereal	595	19.6			469	3.8	993	3.9
Desserts and Sweets	373	12.3			546	4.4	898	3.5
Restaurants and Fast Food	113	3.7			632	5.1	1,367	5.3
Snacks	35	1.2			38	0.3	490	1.9
Dairy Products							353	1.4
Sweetened Drinks	62	2.0			273	2.2	430	1.7
Prepared Entrees							222	0.9
Other Food	401	13.2			984	7.9	786	3.1
All Food Products[a]	1,579	52.0	1,564	26.8	2,941	23.7	5,539	21.6
Games, Toys and Hobbies	610	20.1			1,359	10.9	1,909	7.4
Screen/Audio Entertainment							2,010	7.8
Bicycles; Sports and Exercise[b]					30	0.2	24	0.1
Promos and PSAs[c]	304	10.0	643	10.0	1,244	10.0	7,305	28.5
Other Non-food	546	18.0			6,864	55.2	8,842	34.5
All Non-food Products	1,460	48.0	4,863	73.2	9,497	76.3	20,090	78.4
Total	3,039		6,427		12,438		25,629	

Source. Sta   estimates based on Abel (1978, Tables XVI, XVII, and XVIII), Beales (1978, Tables 1, B-3, B-6, B-9), and Adler et al. (1977) for 1977. Sta   analysis of copyrighted Nielsen Media Research/Nielsen Monitor{Plus data; four weeks projected annually for 2004.

Notes. [a]As a percentage of all ads (including Promos and PSAs), All Food Products in 1977 accounted for 52 percent in Abel's programs, 33 percent in the missing programs, and 24 percent in Beales' dayparts. [b]Bicycles for 1977, Sports and Exercise for 2004. [c]Promos and PSAs for 1977 estimated by Adler. [d]Estimated assuming that national food advertising constitutes 33.2 percent of all national advertising, as described in text.

has also declined. Children's 1977 exposure to ads for Desserts and Sweets on measured programming was 919, while their exposure on all shows was 898 in 2004.

Exposure to ads for Restaurants and Fast Food almost certainly increased. The 1977 exposure to Restaurants and Fast Food ads on this subset of shows was 745, compared to 1,367 on all shows in 2004. For exposure to have *not* increased, there must have been 622 ads in this category in the missing data, or 9.7 percent of all ad exposure on those programs. This seems unlikely given the percentage contribution of Restaurants and Fast Food in the data analyzed by Abel and Beales. We can apply similar reasoning to conclude that exposure to ads for Snacks has likely increased since 1977. The 1977 exposure to ads for Snacks on this subset of shows was 73, while the 2004 exposure on all shows was 490. If it were true that exposure to ads for Snacks had not increased, exposure on the missing shows must have been at least 417, or 6.5 percent of total exposure on those shows. Given their shares in the measured subset, this is implausible.

Abel (1978) and Beales (1978) provide insu cient information to determine how children's exposure to advertising in other food categories changed between 1977 and 2004.

Overall, it appears that the food ads children viewed in 2004 are more evenly spread over these food categories than in 1977. In 1977, ads for Cereal and Desserts and Sweets

the 1970s was still newspapers.[59] Aside from Records, the other components are products that sold in small numbers, if at all, in 1977.[60] Therefore, we conclude that the exposure to ads in the Screen/Audio Entertainment category is likely substantially higher in 2004 than in 1977.

The 1977 studies examined Bicycles and found that children were exposed to few ads in that category. We chose a larger product category that includes Bicycles | Sports and Exercise | and found slightly lower exposure. Advertising for bicycles and sports equipment was a trivial part of the advertising children saw in 1977 and in 2004.

Children's exposure to Promos and PSAs was considerably higher in 2004 than in 1977. We cannot say how exposure to the PSA component changed between 1977 and 2004, because we do not have information on them separately in 1977. However, PSAs are a tiny portion of Promos and PSAs in 2004; they contribute less than 1 percent to Promos and PSAs' 28.5 percent. Thus, we can conclude that children's exposure to advertising for television programming (Promos) has increased substantially since 1977. Children's exposure to Other Nonfood ads was almost certainly greater in 2004 than in 1977. Their exposure to these ads on measured programming was 7,410 in 1977 and their exposure was 10,852 in 2004. (The 2004 number here includes the 1,922 Screen/Audio Entertainment exposures for comparability with the 1977 de nition of Other Nonfood.)

5.4   Sources of Children's Ad Exposure in 1977 and 2004

A greater proportion of children's ad exposure is on children's shows in 2004. A direct comparison of our data from 2004 and the Abel and Beales analyses from 1977 makes it clear that children are getting a greater percentage of their ad exposure from children's programming in 2004. Table 5.6 summarizes our best estimates of children's ad exposures for food and nonfood products in the two years. Recall that the Beales analysis is for

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[59]Biskind (1998): \But `The Godfather's' advertising strategy was traditional: ads in newspapers. In those days, producers sometimes bought local TV time to promote regional openings of B movies, but nobody bought network time . . . . Besides TV was regarded as a rival medium."

[60]Computer games, video games, computer toys, and entertainment software.

is not the case; children's food ad exposure increases only modestly (from 50.4 percent to 63.5 percent) when we add family shows to children's shows.

Children's exposure to nonfood ads in 2004 is not as concentrated on children's programming as food ads, but the level is again higher than in 1977. About one-quarter of children's nonfood ad exposure is from children's shows in 2004, compared to 13 and 24 percent in the network and non-network analyses, respectively, in 1977.

Most children's ad exposure from children's programming was from cable shows in 2004; in 1977 most of their ad exposure was from broadcast network a liates. Table 5.7 breaks out children's ad exposure for food and nonfood products in 2004 on broadcast and cable network shows, and on local spot and syndicated shows. As can be seen from the table, in 2004 most children's ad exposure from children's shows is from cable network programming; 2,726 of the 2,792 food ads, and 5,601 of the 5,881 nonfood ads seen on children's shows are from cable. Thus, in 2004, 97.6 percent of the food ads on children's shows are from cable programming as are 95.2 percent of nonfood ads.[61]

In 1977, over 90 percent of TV viewing was of broadcast network a liates. Further, the ads on these a liates was fairly balanced between national and local ads. As seen in Table 5.6, children were exposed to 993 food ads from network advertising on children's shows; they saw 735 food ads on children's dayparts from non-network ads. While not directly comparable, because of the show/daypart di erence in the Abel and Beales' methodologies, it is clear that we do not see the heavy concentration in programming sources seen in the 2004 data. Nonfood advertising on 50 percent share dayparts is more concentrated in local ads, but again not to the level seen in 2004.

Thus, the evidence indicates a greater portion of children's ad exposure is on children's programs in 2004, and most of that is on cable networks.

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[61]We also nd that 56% of children's exposure to all cable advertising and 70% of children's exposure to food advertising on cable comes from two cable networks.

Table 5.7
Children's Ad Exposure Sources in 2004

	All Shows		Share ≥ 20%		Share ≥ 50%	
	Ads	%	Ads	%	Ads	%
Food						
Cable Networks	3,985	15				

6   Concluding Remarks

This study nds that children's exposure to television advertising has increased somewhat since 1977; however, their exposure to television food advertising has not increased over the same period and is likely to have fallen modestly. We also nd that, due to changes in the television landscape, children are getting a substantial portion of their ad exposure from children's shows. In particular, children see about half of their TV food ads on children's programming. In this section we rst summarize these and other key ndings of our empirical analysis of children's exposure to television advertising. We then discuss how these ndings

6.1.2   Exposure to Food Ads

Our study also developed estimates of children's exposure to food advertising. Children saw approximately 5,500 food ads in 2004, 22 percent of all ads viewed. The 1977 studies do not give us a complete estimate of children's exposure to food ads, but with reasonable assumptions from other data from the period, we conclude that children's food advertising exposure has not increased, and is likely to have fallen modestly.

In 1977 ads for Cereals and for Desserts and Sweets dominated children's food ad exposure, with the Restaurant and Fast Food and the Sweetened Drinks categories also among the top categories. In 2004 these categories are still among the top categories of food ads children see, though the Cereals and the Desserts and Sweets categories no longer dominate. Restaurant and Fast Food ads are probably at a higher level, and they are joined by Snacks and Dairy as substantial sources of children's food ad exposure. Thus, the mix of food

are at least 50 percent of the audience in 2004, compared to about one quarter in 1977. Ads for some food categories appear to be targeted to children.[62] The relative importance of food ads on children's programming varies by food category. For instance, in 2004 children saw 80 percent of their Cereal ads on children's shows, but children saw only one-third of their Restaurant and Fast food ads there. In 2004 virtually all of the ad exposure from children's programming is from cable shows; in 1977, when cable programming was in its infancy, children's shows came from national broadcast and local sources.

6.1.5   When Children See Ads

Finally, our study presents evidence on when children get their television advertising exposure. Saturday morning is a popular viewing time for children, but children get almost as much advertising exposure from one weekday's primetime viewing (4.2 percent of the total) or from their Sunday primetime viewing (4.1 percent) as from Saturday morning (4.3 percent). Weekday viewing between 4 p.m. and 8 p.m. produces nearly as much advertising exposure per day as primetime (3.8 percent). Thus, children's television advertising exposure is not highly concentrated by time of day or day of the week. The viewing pattern for younger children (ages 2{5) di ers from that for older children (ages 6{11) in that younger children get more of their exposure during daytime hours.

6.2   Discussion of Empirical Findings and Obesity

6.2.1   Evidence on TV Advertising's Relation to Obesity

Many commentators have suggested that marketing to children may be a signi cant factor in the growth of obesity in U.S. children.[63] This hypothesis is well beyond anything we could test formally with the data analyzed here, which is limited to television advertising.

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[62]See Gantz et al. (2007) for a recent content analysis of television advertising on children's and general interest programming. Neither this report nor Gantz et al. (2007) considers whether children may respond di erently to the types of ads aired on children's programs.

[63]See, for example, CSPI (2003), Hastings et al. (2003), IOM (2005), Rideout and Hamel (2006).

Nonetheless, our data can shed light on aspects of this hypothesized link.

First, our data do not support the view that children are exposed to more television food advertising today. Our primary scenario indicates that children's exposure to food advertising on television fell by about 9 percent between the 1977 studies and 2004. Children's exposure to all paid television advertising has fallen as well.

Second, our data do not support the view that children are seeing more advertising for low nutrition foods. In both years the food ads that children see are concentrated in the snacking, breakfast, and restaurant product areas. While the foods advertised on children's programming in 2004 do not constitute a balanced diet, this was the case as well in 1977, before the rise in obesity.

6.2.2   Evidence Related to Ad Restrictions on Children's Programming

Some have called for various restrictions on advertising to children, including a complete ban on advertising to younger children and further restrictions on the number of minutes of advertising on children's television programming. Others have called for self-regulation or legislation that would limit advertising on children's programming to foods that meet speci ed nutrition characteristics (CSPI 2005; IOM 2005; FTC/DHHS 2006). Some industry members have proposed voluntary commitments along these lines (CARU 2006). This report does not provide a basis to assess the likely e ects of any of these approaches, or the substantial legal issues that would have to be addressed for regulation, but it does have several ndings that relate to this discussion.

First, children today do get 50 percent of their food advertising from shows where children are at least 50 percent of the audience.[64] Thus, changes to the mix of ads on children's shows could have a nontrivial e ect on the mix and number of food advertisements that children see. This e ect would be considerably larger than would have been the case in 1977, when programming was not as specialized and children did not get much of their advertising

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[64]See Table 3.8.

exposure from children's programs. That said, children also get half of their food advertising exposure from nonchildren's shows and food advertising on those shows might increase if restrictions were placed on children's programming.

Second, our study does provide some insight on another issue that has received little attention in the public discussion: what type of advertising would likely replace restricted

2006; FTC/DHHS 2006).[65]

6.3   Implications for Research on Marketing to Children

One of the key differences between this study and much of the literature is that the measured variable is *exposure to advertising*, a measure which takes account of how many children are in the audience for each ad aired on each show, based on very detailed Nielsen data. This exposure measure gives better estimates of how many and what type of ads children see on average, though obviously exposure is not the same as paying close attention to the ad. This exposure measure differs from other measures often used, such as the number of ads aired, which do not reflect the size of the audience seeing the ad.

A number of studies in the literature attempt to estimate the exposure measure from aggregate estimates, typically using measures of the number of ads on television per hour and the hours spent watching television (e.g. Adler et al. 1977; Chou et al. 2005; Kunkel and Gantz 1992; Gantz et al. 2007). As demonstrated in Section 3.1, footnote 19, these estimates can be quite close to the detailed exposure estimate *if* the component estimates are good; they can be very poor estimates if the component estimates are not appropriate for the audience of interest.

Some of the variation in estimates in the literature arises from the quality of these component estimates. For instance, we know that the amount of time children spend watching television is not the same as the amount of time spent watching ad-supported television. Public broadcasting and premium cable shows are not ad-supported television.[66] In 2004, approximately 70 percent of children's viewing was on ad-supported TV. If the total amount of television viewing time is used to estimate ad exposure, instead of the amount of ad-supported television, the estimate of exposure will be biased upward.

Also, the amount and type of advertising per hour varies by time of day, day of the

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[65]The FTC is beginning a study to attempt to gauge the extent of these other forms of marketing to children. **Federal Register** / Vol. 72, No. 74 / Wednesday, April 18, 2007 / Notices.

[66]These shows do, however, contain promotions for other programming.

week, and type of show. Estimates of the amount and type of advertising per hour can vary accordingly, depending on the sample of shows used to generate the estimate. The sample of shows must reasonably correspond to the viewing patterns of the audience of interest | children in our case | and must be appropriately weighted by viewing pattern for it to provide a good estimate of the number and type of ads seen by the audience. In many studies, researchers estimate ads seen by children by monitoring television on Saturday morning and sometimes during after-school hours. But as seen from this data, children get much of their advertising exposure from prime time television (more than 6 times as much as on Saturday mornings), and a sample that ignores this prime time programming will present a skewed view of children's ad exposure. Detailed data on time of viewing by children is presented in Appendix D to help guide future researchers.

6.4   Final Notes

This study was conducted to provide a comprehensive assessment of the amount and type of television advertising seen by children in 2004. It has been nearly 30 years since the last detailed evaluation of children's television ad exposure. Advertising seen by children has received considerable attention in recent years as a possible contributor to rising obesity in American children, and as a possible vehicle to help reverse that trend. Hopefully, this report will provide useful information to guide discussion of the issues. The report also provides a baseline against which to measure future changes in children's exposure to television advertising.

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A.2   Assigning Ads to Product Categories

We use the product classi cation code (PCC) and brand category information for each ad to assign the ad to one of the 41 detailed product categories (see Table 3.4). The PCC iden- ti es a particular family of products and the brand category further speci es the product within the class. For example, PCC F122 identi es cereal products. Within cereal products, the brand category distinguishes cereal (where the brand category is \cereal") from oatmeal (where the brand category is \oatmeal"). We rely on the PCC for initial classi cation and

A.3 Estimating Exposure to Television Advertising

The audience estimates in the data are expressed as Gross Ratings Points (GRPs) — the percentage of a given population (U.S. population or population of a given metropolitan area) watching a program or advertisement. Multiplying the audience estimate in GRPs for a given ad by the appropriate population figure yields the estimated number of viewers exposed to the ad. We calculate total population exposure by summing the estimated number of viewers over all advertising. Average exposure is obtained by dividing by the population figure.[71] This process is carried out separately on the national data and each of the 75 metropolitan areas. Then we use a weighted average of the local average exposure figures as a nationally representative measure of average exposure to spot ads. This weighted average exposure is added to national exposure to obtain our final average exposure estimate. To project annually, we multiply the estimated exposure by 365/28.

We estimate exposure to television advertising for a given product category by carrying out a similar procedure, restricted to ads in that product category.

A.4 Estimating daily television viewing habits

We also use GRPs to calculate the average amount time children spend watching ad-supported TV each day. We divide each day into 30 minute blocks of time and calculate the average audience in each block for each network, as described above. We use 30 minute blocks of time since many programs air for a multiple of 30 minutes. We multiply the average audience for each 30 minute block by 30 minutes to estimate the total number of person-minutes in each block. We then aggregate over the day to get the total number of person-minutes viewed per day and divide by the appropriate population estimate to compute the average number of minutes viewed by a person in that age group. We combine national and local data as in the procedure used to calculate exposure to advertising.

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[71]Note this is equivalent to simply summing the GRPs; however, there are programming advantages to following the two-step procedure.

B   Definition of Categories

Table B.1 details the product classification codes (PCCs) and Nielsen brand categories assigned to each FTC product category. The table omits the PCCs and brand categories assigned to Other Nonfood; any PCC or brand category not otherwise assigned is assigned to Other Nonfood.[72] The most prevalent advertisements assigned to Other NonFood include those for department stores, automobiles, telecommunications services, and financial services. Other prominent examples include household cleaning supplies, travel services, and toiletries.

When we require information in addition to the PCC and brand category to distinguish between one or more FTC study categories, the extra criteria are listed in parenthesis in the \Other criteria" column. Brand categories in *italics* indicate those categories actually present in the data; brand categories not so emphasized come from Nielsen's master list, but do not appear in our data. PCCs marked with a `⋆' represent PCCs in which brand categories are split between one or more FTC product categories. Sometimes the brand category in the data does not exactly match the brand category in the Nielsen master list (*e.g.* PCC code F212 contains a product category `SNACK BAR' in the data, but `SNACK BARS' in the Nielsen master list). In these situations, the table lists the brand category present in the data followed by the brand category from the master list in brackets.

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[72]239 PCCs were assigned to Other Nonfood.

Table B.1

FTC product categories (continued)

Table B.1

FTC product categories (continued)

FTC Category	Nielsen PCC	Nielsen brand category	Other criteria
Games, Toys and Hobbies	G422	CARDS-NOVELTY, GAME, GAME-BOARD, GAME-CARD, PLAYING CARDS,	

Table B.1

FTC product categories (continued)

FTC Category	Nielsen PCC	Nielsen brand category	Other criteria

Table B.1
FTC product categories (continued)

FTC Category	Nielsen PCC	Nielsen brand category	Other criteria
	D241	FITNESS CTRS-CLUBS, FITNESS PROGRAMS, GYMNASTIC CTR, HEALTH CARE PROGRAM, WEBSITE-FITNESS CTRS-CLBS, WEBSITE-WEIGHT LOSS CTR, WEBSITE-WEIGHT LOSS PROGM, WEIGHT LOSS CTR, WEIGHT LOSS PROGRAM	
Footwear	A131	BOOTS, SHOES, SLIPPERS, WEBSITE-SHOES	
	A132	BOWLING SHOES, GOLF SHOES, PROTECTIVE FOOTWEAR, SKI BOOTS, SPORTING FOOTWEAR, WEBSITE-SPORTING FOOTWEAR	
	G711*	STORE-SHOES	
Computer Hardware and Internet Service	B143*	INTERNET SVC PROVIDER, INTERNET SVCS, WEBSITE-INTERNET SVC PRVD, WEBSITE-INTERNET SVCS	
	B311*	COMPUTER ACCESSORIES [COMPUTER ACCESSSORIES], COMPUTER HARDWARE, COMPUTER MONITORS, COMPUTER PERIPHERALS, COMPUTER SYS, COMPUTERS-HAND HELD, MODEMS, OFFICE AUTOMATION SYS, PRINTERS, WEBSITE-COMPUTER HARDWARE, WEBSITE-COMPUTER PERPHRLS, WEBSITE-COMPUTER SYS, WEBSITE-COMPUTERS, WORD PROCESSORS	
	G715*	STORE-COMPUTERS	
Computer Software (Non-game)	B340	COMPUTER SFTWRE, WEBSITE-COMPUTER SFTWRE	
	G715*	STORE-COMPUTER SFTWRE	

Brand categories in italics are present in the data. PCC codes and brand categories in brackets list the corresponding entry from the master list when there is a discrepancy. * At least one of the brand categories associated with the PCC is assigned to another study category.
(Continued on next page : : :)

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Table B.1
FTC product categories (continued)

FTC Category	Nielsen PCC	Nielsen brand category	Other criteria
Promos	PXXX	PROMO, TV PGM-MORNING-SPORTS, TV PGM-MORNING-TALK SHOW, TV PGM-MORNING-NEWS, TV PGM-MORNING-ENT, TV PGM-MULTI-ENT, TV PGM-DAYTIME-SPORTS, TV PGM-DAYTIME-TALK SHOW, TV PGM-DAYTIME-NEWS, TV PGM-DAYTIME-ENT, TV PGM-EVENING-SPORTS, TV PGM-EVENING-TALK SHOW, TV PGM-EVENING-NEWS, TV PGM-EVENING-ENT, TV PGM-PRIME-SPORTS, TV PGM-PRIME-TALK SHOW, TV PGM-PRIME-NEWS, TV PGM-PRIME-ENT, TV PGM-LATENITE-SPORTS, TV PGM-LATENITE-TALK SHOW, TV PGM-LATENITE-NEWS, TV PGM-LATENITE-ENT, TV PGM-OVERNITE-SPORTS, TV PGM-OVERNITE-TALK SHOW, TV PGM-OVERNITE-NEWS, TV PGM-OVERNITE-ENT, TV PGM-MULTI-SPORTS, TV PGM-MULTI-NEWS, TV PGM-MULTI-ENT, TV PGM-SYND-SPORTS, TV PGM-SYND-TALK SHOW, TV PGM-SYND-NEWS, TV PGM-SYND-ENT, TV PGM-CABLE-SPORTS, TV PGM-CABLE-TALK SHOW, TV PGM-CABLE-NEWS, TV PGM-CABLE-ENT, BROADCAST TV NETWORK, CABLE TV NETWORK, HISPANIC TV NETWORK, TV STATION	(classification based on Nielsen flag identifying promos)
PSAs	B182	PSA, WEBSITE-PSA	(classification based on Nielsen flag identifying promos)
	G900*	VIGNETTE	
Over-the-counter Medication	D211	ASPIRIN, PAIN RELIEVING RUB, PAIN RELVR, SLEEPING AID, WEBSITE-PAIN RELIEVERS	
	D212	ALLERGY REMEDY, ASTHMA MEDICATION, COLD REMEDIES, COLD REMEDIES-MULTI SYMP, COUGH REMEDIES, NASAL DECONGESTANTS, SINUS MEDICATIONS, THROAT REMEDIES	
	D213	ANTACIDS, DIARRHEA MEDICATION, DIGESTIVE AID, WEBSITE-ANTACIDS	
	D214	LAXATIVES	
	D215	CALCIUM SUPPLMT, NUTRITIONAL PDTS, NUTRITIONAL SUPPLMT, VITAMINS, WEBSITE-NUTRITIONAL SUPPLMT	
	D216	LIP MEDICATION, SKIN TREATMENTS-MED	
	D219	EAR MEDICATION, EYE DROPS, EYE MEDICATION, FOOT CARE-MED, HEMORRHOIDAL REMEDY, INSECT REPELLENT, MOTION SICKNESS REMEDY, ORAL REMEDY, SMOKING DETERRENT, STIMULANTS, WART REMEDY, WATER LOSS REMEDY, WATER RETENTION REMEDY, WEBSITE-FOOT CARE-MED, WEBSITE-SMOKING DETERRENT	

Brand categories in italics are present in the data. PCC codes and brand categories in brackets list the corresponding entry from the master list when there is a discrepancy. * At least one of the brand categories associated with the PCC is assigned to another study category.

Table B.1
FTC product categories (continued)

FTC Category	Nielsen PCC	Nielsen brand category	Other criteria
Prescription Medication	D218*	PHARMACEUTICAL HOUSES, PRESCRIPTION DRUGS-HUMAN, WEBSITE-PHRMCUTCL HOUSES, WEBSITE-PRSCRPTN DRG-HMN	
Other Nonfood Advertising		All product codes and product categories not categorized elsewhere	

Brand categories in italics are present in the data. PCC codes and brand categories in brackets list the corresponding entry from the master list when there is a discrepancy. * At least one of the brand categories associated with the PCC is assigned to another study category.

C   What is Advertised to Children: Detailed Findings

C.1   Children, 2{11

Table C.1 presents ndings related to those presented in Section 3.3. It shows how exposure to advertising at the detailed category level changes as the share of children changes.

Figure C.1

Annual Exposure to TV Advertising, Selected Categories

Younger children ages 2{5
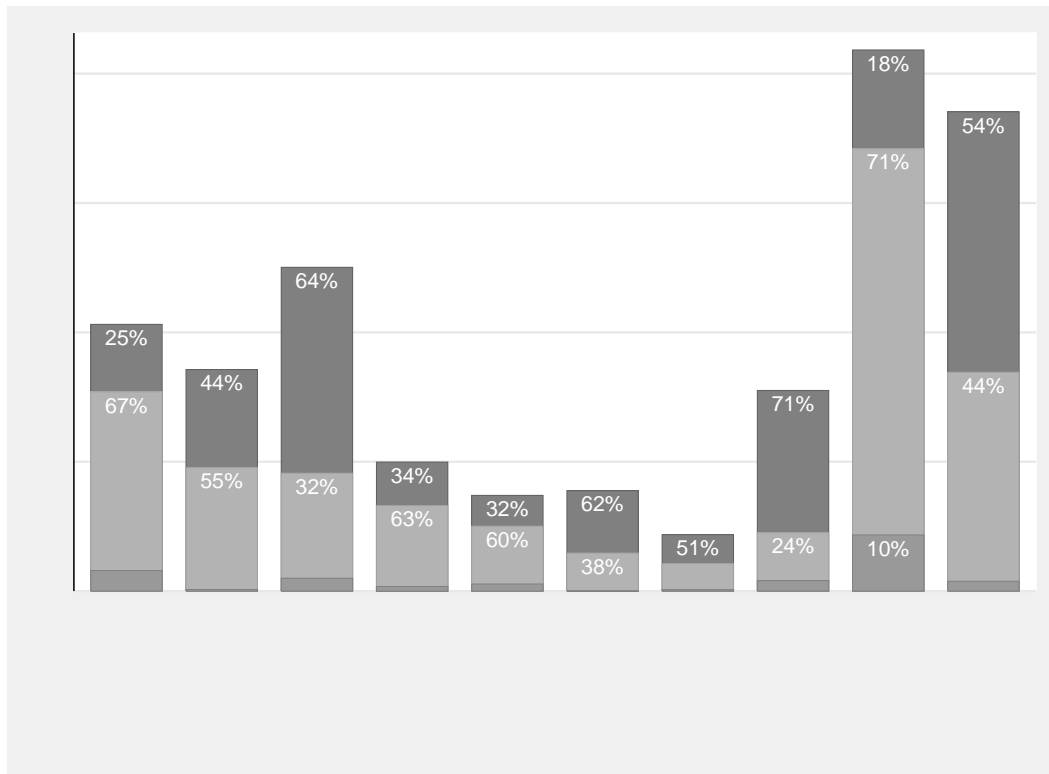
Source. Sta analysis of copyrighted Nielsen Media Research/Nielsen Monitor{Plus data; four weeks projected annually.
Note. Promos and PSAs and Other Nonfood Advertising omitted because they dominate the graph.

C.2 Younger Children, 2{5

This section provides additional ndings related to those presented in Section 3.6. First, a graph shows exposure to selected categories of ads on general programming, family shows, and children's shows. Tables presenting ndings at a more detailed category level follow.

Table C.2

Annual Exposure to TV Advertising By Product Category

Younger children ages 2{5

Category	Ads	%	Detailed category	Ads	%
Cereal	1,031	4.1	Regular Cereal	160	0.6
			Highly Sugared Cereal	871	3.5
Desserts and Sweets	857	3.4	Candy	441	1.8
			Desserts and Dessert Ingredients	51	0.2
			Cakes, Pies and Pastries	95	0.4
			Regular Gum	96	0.4
			Cookies	160	0.6
			Ice Cream	14	0.1
Restaurants and Fast Food	1,252	5.0	Restaurants and Fast Food	1,252	5.0
Snacks	499	2.0	Appetizers, Snacks and Nuts	354	1.4
			Crackers	101	0.4
			Snack, Granola and Cereal Bars	44	0.2

Table C.3

Detailed Exposure to TV Advertising By Audience Share

Younger children ages 2{5

Category	All ads		Share ≥ 20%		Share ≥ 50%	
	Ads	%	Ads	%	Ads	%
Regular Cereal	160	0.6	76	0.8	13	1.3
Highly Sugared Cereal	871	3.5	694	7.7	67	7.0
Candy	441	1.8	225	2.5	3	0.3
Desserts and Dessert Ingredients	51	0.2	22	0.2	0	0.0
Cakes, Pies and Pastries	95	0.4	75	0.8	3	0.3
Regular Gum	96	0.4	53	0.6	0	0.0
Cookies	160	0.6	101	1.1	0	0.0
Ice Cream	14	0.1	2	0.0	0	0.0
Restaurants and Fast Food	1,252	5.0	456	5.1	50	5.2
Appetizers, Snacks and Nuts	354	1.4	251	2.8	18	1.9
Crackers	101	0.4	70	0.8	0	0.0
Snack, Granola and Cereal Bars	44	0.2	10	0.1	0	0.0
Dairy Products and Substitutes	370	1.5	251	2.8	28	2.9
Regular Carbonated Beverages	127	0.5	21	0.2	0	0.0
Regular Non-carbonated Beverages	261	1.0	126	1.4	0	0.0
Prepared Entrees	203	0.8	105	1.2	5	0.6
Frozen Pizza	15	0.1	1	0.0	0	0.0
Beer, Wine and Mixers	116	0.5	2	0.0	0	0.0
Diet Carbonated Beverages	19	0.1	0	0.0	0	0.0
Diet Non-carbonated Beverages	15	0.1	0	0.0	0	0.0
Fruit Juices	51	0.2	0	0.0	0	0.0
Sugarless Gum	23	0.1	5	0.1	0	0.0
Canned Fruit	0	0.0	0	0.0	0	0.0
Raisins and Other Dried Fruit	0	0.0	0	0.0	0	0.0
Fresh Fruit	0	0.0	0	0.0	0	0.0
Vegetables and Legumes	15	0.1	0	0.0	0	0.0
Meat, Poultry and Fish	44	0.2	0	0.0	0	0.0
Bread, Rolls, Wa es and Pancakes	155	0.6	105	1.2	4	0.4
Other Food and Beverage	338	1.4	113	1.3	37	3.9
All Food Products	5,390	21.6	2,764	30.8	227	23.8
Games, Toys and Hobbies	2,092	8.4	1,710	19.0	217	22.8
Screen / Audio Entertainment	1,853	7.4	846	9.4	38	4.0
Sporting Goods	21	0.1	11	0.1	0	0.0
Exercise Equipment	0	0.0	0	0.0	0	0.0
Promos	7,065	28.3	2,493	27.7	198	20.8
PSAs	205	0.8	82	0.9	16	1.6
Dental Supplies	240	1.0	65	0.7	46	4.8
Diets and Diet Aids	58	0.2	1	0.0	0	0.0
Footwear	99	0.4	33	0.4	0	0.0
Computer Hardware and Internet Services	215	0.9	49	0.6	0	0.0
Computer Software (Non-game)	12	0.0	0	0.0	0	0.0
Over-the-counter Medication	656	2.6	43	0.5	33	3.4
Prescription Medication	312	1.2	3	0.0	0	0.0
Other Nonfood Advertising	6,722	27.0	883	9.8	179	18.8
All Nonfood Products	19,549	78.4	6,220	69.2	727	76.2
Total	24,939		8,985		954	

Source. Sta   analysis of copyrighted Nielsen Media Research/Nielsen Monitor{Plus data; four weeks projected annually.

C.3   Teens and Adults

These tables provide detailed information for teens and adults.

Table C.5

Annual Exposure to TV Advertising By Product Category

Adults ages 18 and over

Category	Ads	%	Detailed category	Ads	%
Cereal	477	0.9	Regular Cereal	286	0.5

D   Time of Children's Viewing

This appendix provides more detail related to the discussion in Section 3.2.

D.1   Children 2{11

Table D.1 provides more detail on children's exposure to television advertising by time of day and by type of network.

Table D.1
Percent of Advertising Exposure By Time of Day
Children ages 2{11

Time period	Overall			Cable			Broadcast		
	Sunday	Weekdays	Saturday	Sunday	Weekdays	Saturday	Sunday	Weekdays	Saturday
12 am { 2 am	0:63	2:80	0:74	0:88	3:77	0:99	0:23	1:25	0:35
2 am { 4 am	0:33	1:66	0:40	0:51	2:45	0:61	0:04	0:39	0:05
4 am { 6 am	0:23	1:13	0:23	0:37	1:69	0:36	0:02	0:24	0:03
6 am { 8 am	0:48	3:71	0:60	0:69	4:16	0:66	0:15	2:99	0:50
8 am { 10 am	1:24	4:98	2:05	1:47	6:15	1:50	0:86	3:12	2:93
10 am { 12 pm	1:28	3:94	2:25	1:75	4:97	1:72	0:54	2:31	3:09
12 pm { 2 pm	1:21	4:66	1:45	1:43	5:22	1:75	0:86	3:76	0:99
2 pm { 4 pm	1:38	6:71	1:42	1:51	6:88	1:83	1:17	6:44	0:78
4 pm { 6 pm	1:54	8:35	1:46	1:66	8:48	1:87	1:35	8:16	0:80
6 pm { 8 pm	2:11	10:66	1:69	1:79	9:59	1:97	2:62	12:36	1:26
8 pm { 10 pm	2:87	15:07	2:23	1:65	9:33	1:91	4:81	24:23	2:76
10 pm { 12 am	1:19	6:00	1:30	1:09	6:12	1:24	1:36	5:81	1:39
Daily total	14:49	69:68	15:83	14:79	68:81	16:40	14:02	71:05	14:93
Weekly exposure (ads per child)			491			302			190

Source. Sta   analysis of copyrighted Nielsen Media Research/Nielsen Monitor{Plus data; four weeks projected annually.

95

Figure D.1
TV Viewing Over the Day
Younger children ages 2{5
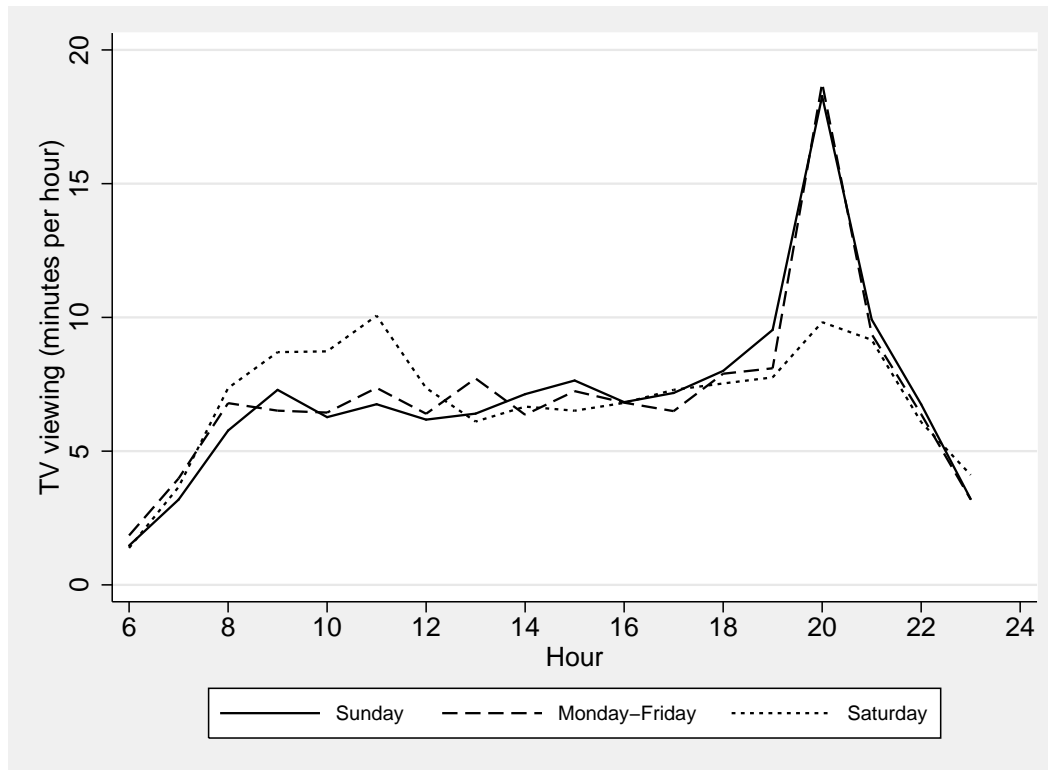
Source. Sta   analysis of copyrighted Nielsen Media Research/Nielsen Monitor{Plus data; four weeks projected annually.

D.2   Younger Children 2{5

This section provides information for younger children comparable to that presented for all children in Section 3.2. In addition, as for all children above, we present a table with more detail on younger children's exposure to television advertising by time of day and by type of network.

Figure D.2
Cumulative TV Viewing Per Hour Over the Week
Younger children ages 2{5

Source. Sta   analysis of copyrighted Nielsen Media Research/Nielsen Monitor{Plus data; four weeks projected annually.

Figure D.3
TV Viewing Over the Day
Younger children ages 2{5, cable (a) and broadcast (b)

(a)   (b)

Source. Sta   analysis of copyrighted Nielsen Media Research/Nielsen Monitor{Plus data; four weeks projected annually.
Note. Graphs on di erent scales.

Figure D.4
Average (a) and Total (b) Exposure to TV Advertising Over the Day
Younger children ages 2{5

(a)   (b)

Source. Sta   analysis of copyrighted Nielsen Media Research/Nielsen Monitor{Plus data; four weeks projected annually.
Note. Graphs on di erent scales.

Figure D.5

Average (a) and Total (b) Exposure to Food Advertising Over the Day
Younger children ages 2{5
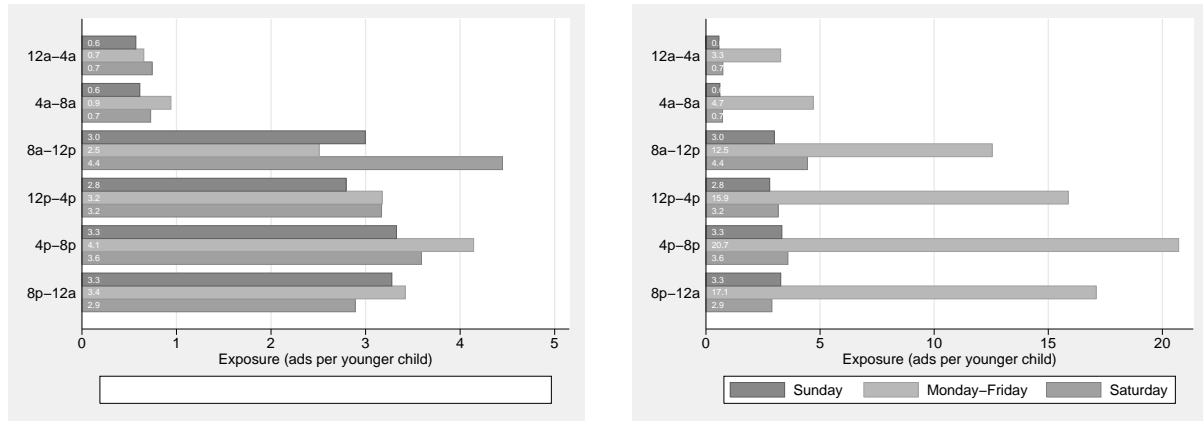
Figure D.6

Cumulative Exposure to TV Advertising Per Hour Over the Week
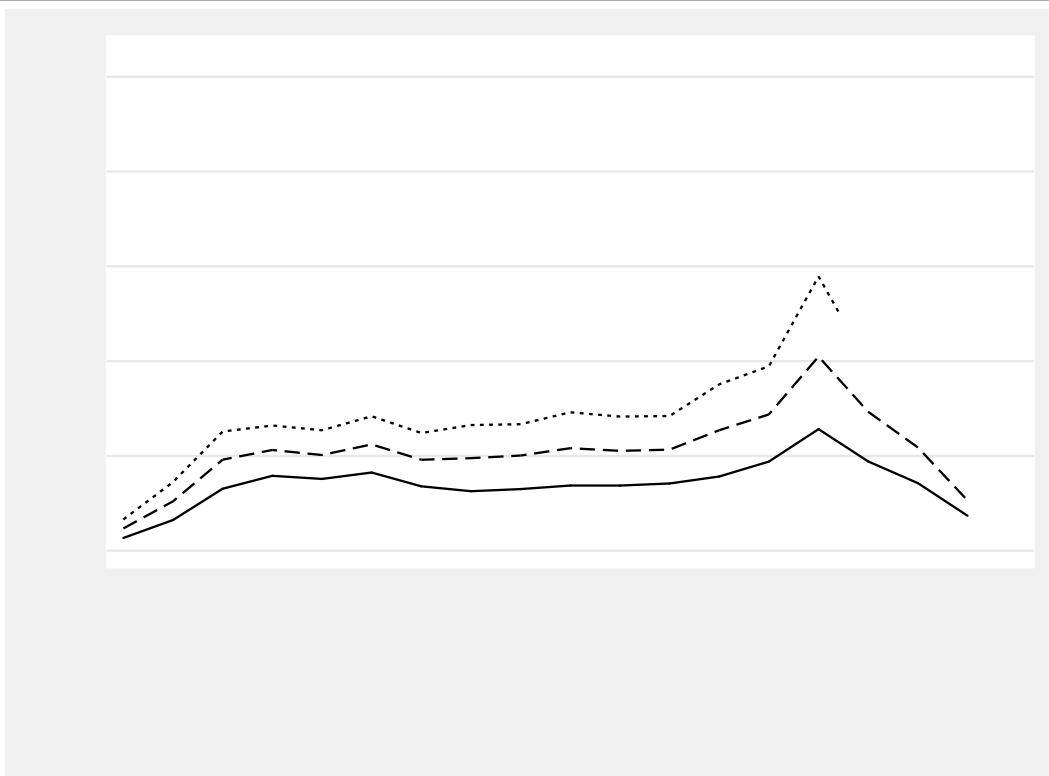
Younger children ages 2{5

Source. Sta analysis of copyrighted Nielsen Media Research/Nielsen Monitor{Plus data; four weeks projected annually.
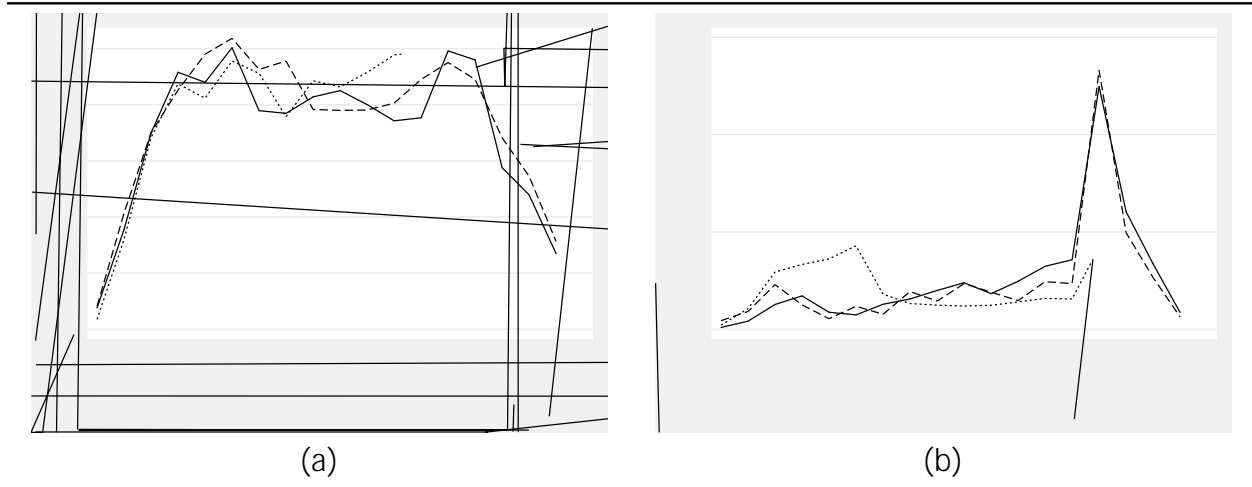
Figure D.7

Cumulative Exposure to TV Advertising Per Hour Over the Week

Younger children ages 2{5, cable (a) and broadcast (b)
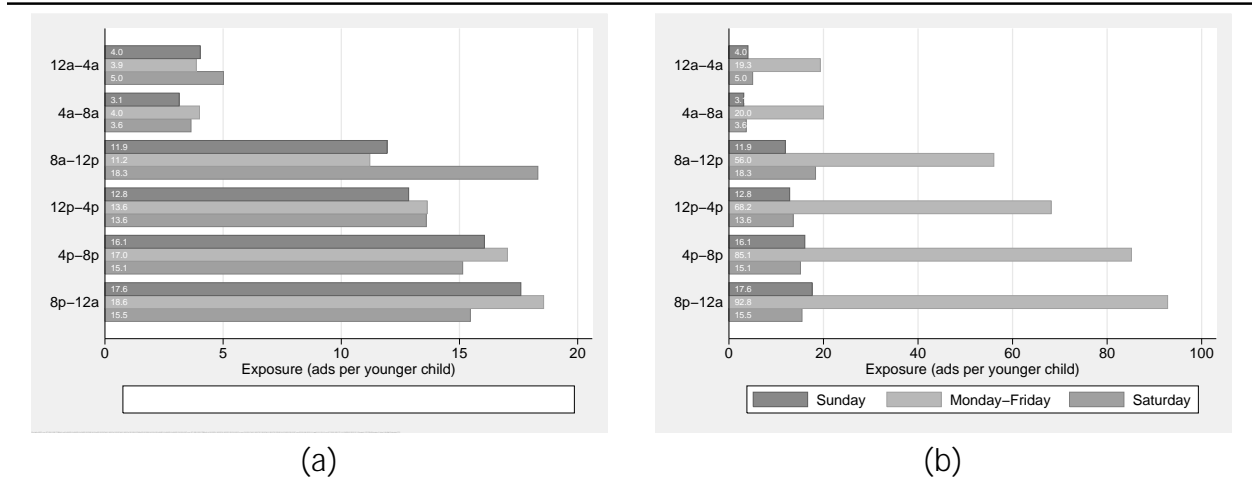

(a)   (b)

Source. Sta   analysis of copyrighted Nielsen Media Research/Nielsen Monitor{Plus data; four weeks projected annually.

Table D.2
Percent of Advertising Exposure by Time of Day
Younger children ages 2{5

Time period	Overall			Cable			Broadcast		
	Sunday	Weekdays	Saturday	Sunday	Weekdays	Saturday	Sunday	Weekdays	Saturday
12 am { 2 am	0:56	2:51	0:67	0:73	3:31	0:87	0:25	1:09	0:31
2 am { 4 am	0:28	1:53	0:38	0:42	2:19	0:56	0:03	0:34	0:04
4 am { 6 am	0:23	1:05	0:24	0:34	1:52	0:35	0:01	0:21	0:02
6 am { 8 am	0:43	3:13	0:53	0:59	3:54	0:56	0:14	2:41	0:46
8 am { 10 am	1:20	5:88	1:81	1:41	7:14	1:49	0:83	3:63	2:40
10 am { 12 pm	1:29	5:84	2:02	1:72	7:34	1:65	0:53	3:15	2:67
12 pm { 2 pm	1:28	6:56	1:45	1:49	7:05	1:66	0:91	5:68	1:06
2 pm { 4 pm	1								
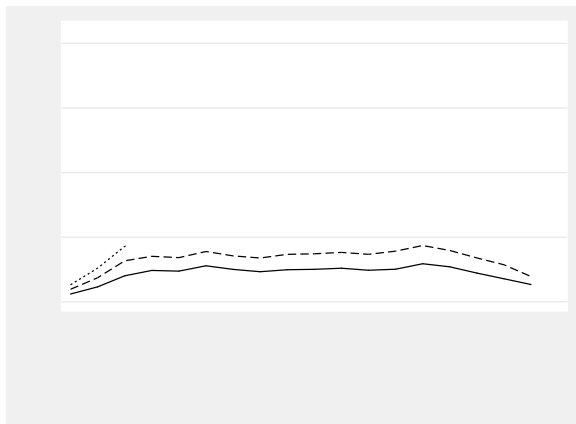
E   Exposure by Size of Child Audience

In Section 3.4 we looked at how children's exposure to product ads varies over different types of shows, where shows are grouped by the share of children in the audience. Looking at shows based on the number of children watching provides additional insight. We group the shows based on the number of children watching — or the percentage of the population of children that watch the show. We consider (in addition to exposure on all shows) exposure on shows with at least 1.0 percent and at least 3.0 percent of children watching; or, approximately, shows with at least 394,800 children watching and shows with at least 1,184,400 children watching.[73] Only 4.5 percent of all ads are aired on shows that are watched by more than one percent of children. However, 51 percent of children's ad exposure is from shows in which one percent or more of children are watching. Only 0.9 percent of all ads are aired on shows that are watched by more than three percent of children. However, 19 percent of children's ad exposure is from these shows.[74]

This appendix presents results of this analysis for all children and for younger children.

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[73]These numbers are calculated based on Nielsen-provided population figures for 2–11 year-olds for the fall of 2003.

[74]We find that nearly 93 percent of all television episodes are watched by fewer than one percent of children.

Table E.1

Annual Exposure to TV Advertising By Child Audience Size

Children ages 2{11

Category	All ads		GRP $\geq$ 1.0		GRP $\geq$ 3.0	
	Ads	%	Ads	%	Ads	%
Cereal	993	3.9	816	6.3	365	7.7
Desserts and Sweets	898	3.5	613	4.7	225	4.7
Restaurants and Fast Food	1,367	5.3	823	6.3	281	5.9
Snacks	490	1.9	366	2.8	148	3.1
Dairy Products	353	1.4	259	2.0	123	2.6
Sweetened Drinks	430	1.7	252	1.9	117	2.5
Prepared Entrees	222	0.9	143	1.1	55	1.2
Other Food	786	3.1	340	2.6	140	3.0
All Food Products	5,538	21.6	3,612	27.7	1,454	30.7
Games, Toys and Hobbies	1,909	7.5	1,727	13.2	726	15.3
Screen / Audio Entertainment	2,010	7.8	1,330	10.2	576	12.2
Sports and Exercise	24	0.1	13	0.1	7	0.1
Promos and PSAs	7,305	28.5	3,360	25.8	1,054	22.3
Other Nonfood	8,842	34.5	3,002	23.0	916	19.4
All Nonfood Products	20,091	78.4	9,432	72.3	3,279	69.3
Total	25,629		13,044		4,733	

Figure E.1

Annual Exposure to TV Advertising By Child Audience Size, Selected Categories
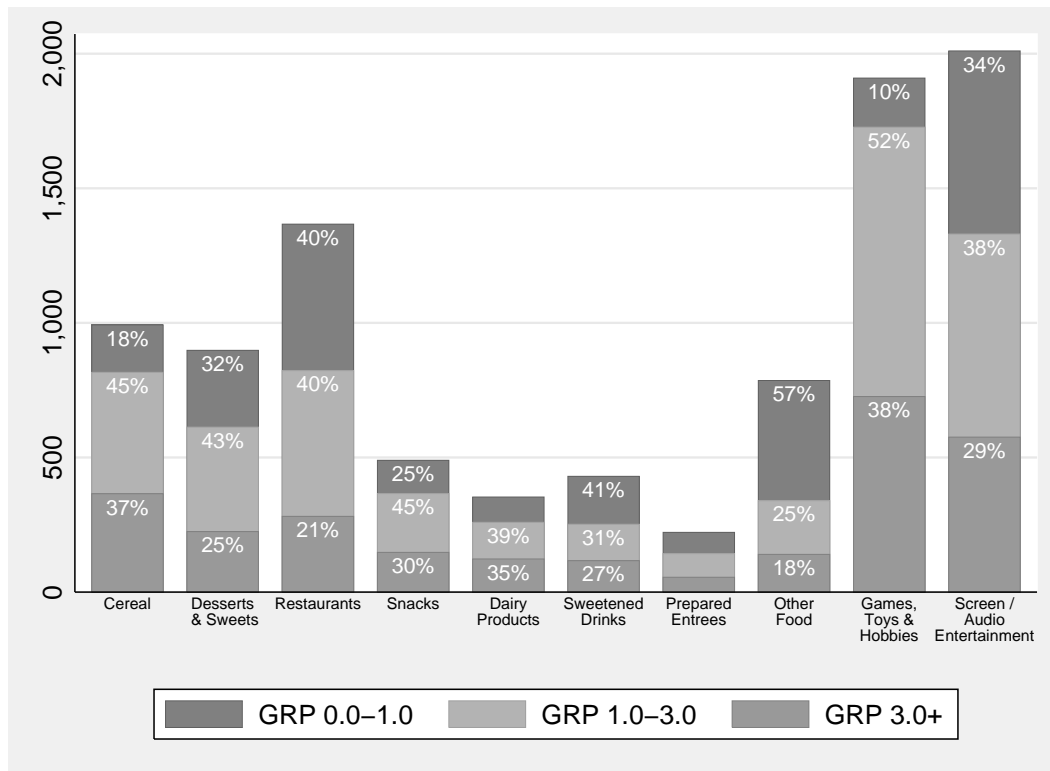
Children ages 2{11

Category	GRP 0.0–1.0	GRP 1.0–3.0	GRP 3.0+
Cereal	18%	45%	37%
Desserts & Sweets	32%	43%	25%
Restaurants	40%	40%	21%
Snacks	25%	45%	30%
Dairy Products		39%	35%
Sweetened Drinks	41%	31%	27%
Prepared Entrees			
Other Food	57%	25%	18%
Games, Toys & Hobbies	10%	52%	38%
Screen / Audio Entertainment	34%	38%	29%

Source. Sta analysis of copyrighted Nielsen Media Research/Nielsen Monitor{Plus data; four weeks projected annually.
Note. Promos and PSAs and Other Nonfood Advertising omitted because they dominate the graph.

Table E.2
Annual Exposure to TV Advertising By Audience Size
Younger children ages 2{5

Category	All ads		GRP ≥ 1.0		GRP ≥ 3.0	
	Ads	%	Ads	%	Ads	%
Cereal	1,031	4.1	836	6.5	470	8.3
Desserts and Sweets	857	3.4	575	4.5	228	4.0
Restaurants and Fast Food	1,252	5.0	760	5.9	314	5.6
Snacks	499	2.0	373	2.9	181	3.2
Dairy Products	370	1.5	275	2.1	157	2.8
Sweetened Drinks	388	1.6	231	1.8	103	1.8
Prepared Entrees	218	0.9	138	1.1	64	1.1
Other Food	776	3.1	349	2.7	187	3.3
All Food Products	5,390	21.6	3,535	27.6	1,705	30.2
Games, Toys and Hobbies	2,092	8.4	1,888	14.7	1,084	19.2
Screen / Audio Entertainment	1,853	7.4	1,234	9.6	570	10.1
Sports and Exercise	21	0.1	12	0.1	6	0.1
Promos and PSAs	7,270	29.2	3,273	25.6	1,212	21.5
Other Nonfood	8,314	33.3	2,866	22.4	1,061	18.8
All Nonfood Products	19,549	78.4	9,273	72.4	3,933	69.8
Total	24,939		12,809		5,638	

Source. Sta analysis of copyrighted Nielsen Media Research/Nielsen Monitor{Plus data; four weeks projected annually.

Figure E.2

F   How Size and Share of Audience are Related

This appendix provides more information related to the analysis in Section 3.5. We present

a table similar to Table 3.7, except we show how ads *aired*

Table F.1

Percent of Ads Aired and Exposure by Audience Size (GRP) and Audience Share

Children ages 2{11

All ads

| Total ads aired | 13,395,154 | Total exposure | 25,629 |

GRP	Share			Total
	0{20	20{50	≥ 50	
0.0 { 1.0	91.4	2.7	1.5	95.7
1.0 { 3.0	1.0	0.7	1.7	3.4
≥ 3.0	0.1	0.1	0.6	0.8
Total	92.6	3.5	3.9	

Table F.3

Percent of Food Ad Exposure By Audience Size (GRP) and Audience Share
Younger children ages 2{5

All ads   5,390 ads

		Share		
GRP	0{20	20{50	≥ 50	Total
0.0 { 1.0	30.8	3.5	0.1	34.4
1.0 { 3.0	14.6	19.3	0.0	34.0
≥ 3.0	3.2	24.3	4.1	31.6
Total	48.7	47.1	4.2	100.0

Ads on Cable   75.3% exposure

		Share		
GRP	0{20	20{50	≥ 50	Total
0.0 { 1.0	24.3	4.5	0.1	29.0
1.0 { 3.0	8.4	25.2	0.0	33.6
≥ 3.0	0.5	31.5	5.4	37.4
Total	33.3	61.2	5.5	100.0

Ads on Broadcast   24.7% exposure

		Share		
GRP	0{20	20{50	≥ 50	Total
0.0 { 1.0	50.7	0.3	0.0	51.0
1.0 { 3.0	33.6	1.4	0.1	35.1
≥ 3.0	11.4	2.3	0.2	13.9
Total	95.8	3.9	0.3	100.0

Source. Sta   analysis of copyrighted Nielsen Media Research/Nielsen Monitor{Plus data; four weeks projected annually.

Table G.2

Annual Exposure to Advertising Computed From Each Month

Younger children ages 2{5

Category	November		February		May		July	
	Ads	%	Ads	%	Ads	%	Ads	%
Cereal	616	2:2	1;233	4:8	1;203	5:1	1;072	4:8
Desserts and Sweets	319	1:1	1;111	4:3	1;104	4:7	893	4.0
Restaurants and Fast Food	1;069	3:8	1;369	5:4	1;228	5:2	1;340	6.0
Snacks	157	0:6	685	2:7	757	3:2	396	1:8
Dairy Products	219	0:8	448	1:8	624	2:6	190	0.9
Sweetened Drinks	120	0:4	333	1:3	633	2:7	467	2:1
Prepared Entrees	181	0:6	338	1:3	124	0:5	230	1.0
Other Food	690	2:4	781	3:1	754	3:2	877	3.9
All Food Products	3;372	11:9	6;297	24:6	6;426	27:3	5;463	24:5
Games, Toys and Hobbies	6;441	22:8	1;113	4:3	618	2:6	195	0.9
Screen / Audio Entertainment	2;768	9:8	1;438	5:6	1;600	6:8	1;605	7:2
Sports and Exercise	7	0:0	8	0:0	33	0:1	37	0:2
Promos and PSAs	7;647	27:0	7;422	29:0	6;838	29:0	7;172	32:2
Other Nonfood	8;064	28:5	9;305	36:4	8;059	34:2	7;826	35:1
All Nonfood Products	24;927	88:1	19;285	75:4	17;149	72:7	16;835	75:5
Total	28;299		25;582		23;575		22;299	

Source. Sta analysis of copyrighted Nielsen Media Research/Nielsen Monitor{Plus data; four weeks projected annually.