

Special Article

THE MASTER SETTLEMENT AGREEMENT WITH THE TOBACCO INDUSTRY AND CIGARETTE ADVERTISING IN MAGAZINES

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ABSTRACT

Background In 1998, the attorneys general of 46 states signed a Master Settlement Agreement with the four largest tobacco companies in the United States. The agreement prohibits tobacco advertising that targets people younger than 18 years of age.

Methods We analyzed the trends in expenditures for advertising for 15 specific brands of cigarettes and the exposure of young people to cigarette advertising in 38 magazines between 1995 and 2000. We defined cigarette brands as "youth" brands if they were smoked by more than 5 percent of the smokers in the 8th, 10th, and 12th grades in 1998; all others were considered to be "adult" brands. We classified magazines as youth-oriented magazines if at least 15 percent of their readers or at least 2 million of their readers were 12 to 17 years old. "Reach," a standard measure of exposure to advertising, was defined as the number of young persons who read at least one issue of a magazine containing an advertisement for a particular brand of cigarette during a given year.

Results In 2000 dollars, the overall advertising expenditures for the 15 brands of cigarettes in the 38 magazines were \$238.2 million in 1995, \$219.3 million in 1998, \$291.1 million in 1999, and \$216.9 million in 2000. Expenditures for youth brands in youth-oriented magazines were \$56.4 million in 1995, \$58.5 million in 1998, \$67.4 million in 1999, and \$59.6 million in 2000. Expenditures for adult brands in youth-oriented magazines were \$72.2 million, \$82.3 million, \$108.6 million, and \$67.6 million, respectively. In 2000, magazine advertisements for youth brands of cigarettes reached more than 80 percent of young people in the United States an average of 17 times each.

Conclusions The Master Settlement Agreement with the tobacco industry appears to have had little effect on cigarette advertising in magazines and on the exposure of young people to these advertisements. (N Engl J Med 2001;345:504-11.)

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REDUCING cigarette smoking among adolescents is a public health priority.^{1,2} Research suggests that the advertising and promotion of cigarettes strongly influence the initiation of smoking.³⁻⁶ Thus, reducing the exposure of children to cigarette advertising is important. There is evidence, however, that cigarette companies may have targeted young people in their magazine

advertising⁷⁻²² and that cigarette advertising in magazines is likely to reach a substantial number of young people.²³

In November 1998, the attorneys general of 46 states signed a Master Settlement Agreement with the four largest tobacco companies in the United States. The agreement states that cigarette companies may not "take any action, directly or indirectly, to target youth . . . in the advertising, promotion or marketing of tobacco products."²⁴ In June 2000, Philip Morris announced that, beginning in September 2000, it would restrict its cigarette advertising to magazines whose proportion of young readers was less than 15 percent and that had fewer than 2 million readers from 12 to 17 years old.^{25,26} R.J. Reynolds declined to adopt a similar policy.²⁶

Monitoring and enforcing the tobacco settlement require a careful examination of the trends in cigarette advertising in magazines and the exposure of young people to this advertising. We studied advertising expenditures and exposure before and after the Master Settlement Agreement and evaluated the effectiveness of restricting cigarette advertising to magazines for which young readers represent less than 15 percent of the overall readership and that have fewer than 2 million young readers.

METHODS**Study Design**

We conducted separate analyses for advertising expenditures and the exposure of young people to cigarette advertisements. First, we analyzed trends in brand-specific expenditures for advertising in magazines between 1995 and 2000. We classified magazines as either youth-oriented (those for which young readers represented at least 15 percent of the overall readership or that had at least 2 million young readers) or adult-oriented (all others). We also classified cigarette brands as either "youth" brands (those smoked by more than 5 percent of the smokers in the 8th, 10th, and 12th grades) or "adult" brands (all others). Then we compared the trends in advertising expenditures for youth brands of cigarettes with those for adult brands, and we compared the patterns of advertising for these brands in youth-oriented and adult-oriented magazines. We also examined the trends in advertising expenditures by different cigarette companies. Because the Master Settlement Agreement was signed

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in November 1998, expenditures between 1995 and 1998 are referred to as presettlement expenditures, and expenditures in 1999 and 2000 are referred to as postsettlement expenditures.

Second, we analyzed the trends in the potential exposure of young people to brand-specific cigarette advertising in magazines with the use of market-research techniques. We then compared the trends for youth and adult brands of cigarettes before and after the Master Settlement Agreement.

Selection of Magazines

We selected all magazines for which complete data were available on the brand-specific expenditures for cigarette advertising and on the numbers of young and adult readers between 1995 and 2000. The potential sample consisted of the 60 magazines that accept tobacco advertising and for which Mediamark Research (New York) had measured the number of young readers during any year between 1995 and 2000. Twelve magazines were excluded because data were missing on brand-specific advertising for one or more years, nine were excluded because data were missing on young readers for one or more years, and one was excluded because data were missing on both cigarette advertising and young readers. Thus, the final sample consisted of 38 magazines (Table 1).

Selection of Cigarette Brands

We selected all cigarette brands for which complete data on magazine advertising were available for 1995 through 2000 and for which data on the brand preferences among young smokers were available for 1998. We included 15 brands, representing more than 97 percent of the youth market: Basic, Benson & Hedges, Marlboro, Merit, Parliament, and Virginia Slims from Philip Morris; Camel, Doral, Salem, and Winston from R.J. Reynolds; Capri, Carlton, Kool, and Misty from Brown & Williamson; and Newport from Lorillard.

Sources of Data

Competitive Media Reporting (New York) provided estimates of the annual expenditures for cigarette advertising in each magazine for 1995 through 2000, according to the brand of cigarette. These estimates are based on the number of pages of advertising and the price per page set by the magazine, not on the actual cost of the advertising negotiated with a publisher. All advertising expenditures were converted to 2000 dollars with the use of the Consumer Price Index.

Mediamark Research estimated the number of young readers (12 to 17 years old) and adult readers (≥ 18 years old) for each magazine for 1995 through 2000.

Classification of Magazines

To analyze the effectiveness of restricting cigarette advertising to magazines for which young readers represent less than 15 percent of the overall readership and that have fewer than 2 million young readers, we divided the magazines in our sample into two groups on the basis of these criteria. The Food and Drug Administration originally proposed these criteria,²⁸ which Philip Morris later adopted.^{25,26} We classified the magazines on the basis of the average percentage of young readers and the average number of young readers during the six years of the study. We classified 18 magazines as adult-oriented magazines and 20 as youth-oriented magazines (Table 1). The classification of a magazine as adult-oriented, however, does not indicate that it does not have a substantial number of young readers; many adult-oriented magazines do (e.g., *Time*).

Classification of Youth and Adult Brands

Using the 1998 national Monitoring the Future survey,²⁷ we classified cigarette brands as youth brands (smoked by more than 5 percent of the smokers in the 8th, 10th, and 12th grades) or as adult brands (smoked by 5 percent or less of the smokers in the 8th, 10th, and 12th grades). On the basis of this criterion, we classified three

brands, representing 91.3 percent of the youth market, as youth brands: Marlboro (with an average market share among smokers in the 8th, 10th, and 12th grades of 64.3 percent), Newport (19.1 percent), and Camel (7.9 percent). We classified 12 brands as adult brands: Parliament (with an average market share among young smokers of 1.3 percent), Winston (1.1 percent), Kool (0.9 percent), Basic (0.5 percent), Virginia Slims (0.5 percent), Doral (0.5 percent), Benson & Hedges (0.3 percent), Salem (0.3 percent), Merit (0.2 percent), Misty (0.2 percent), Capri (0.1 percent), and Carlton (0.0 percent). These data on brand preferences and market shares were derived from the responses of 2048 smokers who were in 8th grade, 2708 who were in 10th grade, and 2335 who were in 12th grade.²⁷

Estimation of Advertising Reach and Frequency

The research department of Initiative Media North America (Los Angeles) provided estimates of the "reach" and frequency of advertising for each of the 15 brands of cigarettes that were advertised in the 38 magazines in our sample between 1995 and 2000. Reach, the standard measure of exposure to advertising, was defined in our analysis as the number of young people 12 to 17 years of age who read at least one issue of a magazine containing an advertisement for a particular brand of cigarette during a given year.²⁹⁻³¹ Reach represents the number of people who read a magazine carrying an advertisement, not the number who actually see the advertisement.^{23,30,31}

Frequency was defined as the average number of times that a young person who was reached by advertising for a particular brand of cigarettes was potentially exposed to the advertisement during the year.²⁹⁻³¹ For example, a frequency of 15 associated with a reach of 1 million means that the 1 million young persons who read at least 1 issue of a magazine containing an advertisement for a particular brand of cigarettes read an average of 15 issues of that magazine, each containing an advertisement for that brand of cigarettes. Major companies and advertising agencies routinely rely on estimates of reach and frequency in planning and evaluating advertising campaigns.^{30,32}

Effective reach was defined as the number of young persons potentially exposed three or more times to advertising for a particular brand during a given year. The advertising literature suggests that being exposed three times to a given advertisement represents an effective level of exposure,^{30,33} but being exposed even once may be effective.^{34,35} The cited studies did not, however, measure the effective frequency of cigarette advertising specifically.

Estimations of reach and frequency rely on surveys of the readership of magazines and a computer-generated tabulation of the frequency distribution — the number of readers who are exposed to any given number of issues of any combination of magazines in a given year.^{30,32,36-40} To calculate the reach and frequency, Initiative Media used the Interactive Market Systems Modal model.³² For each magazine in the sample, Initiative Media estimated the annual number of insertions of an advertisement for each brand. Initiative Media then estimated the reach and frequency of each brand on the basis of the brand's schedule of advertising in the 38 magazines and the young readership of each magazine. The estimations accounted for the duplication of audiences both between magazines and between different issues of the same magazine.^{30,32,36-40}

RESULTS

Trends in Expenditures for Cigarette Advertising

For the 15 brands of cigarettes we studied, the overall expenditures for advertising in the 38 magazines decreased by 7.9 percent from 1995 (\$238.2 million) to 1998 (\$219.3 million), increased by 32.7 percent in 1999 (\$291.1 million) — the first year after the settlement with the tobacco companies — and returned to presettlement levels in 2000 (\$216.9 million).

Expenditures on advertising for youth brands in

TABLE 1. TRENDS IN EXPENDITURES ON CIGARETTE ADVERTISING IN MAGAZINES, 1995 THROUGH 2000, ACCORDING TO MAGAZINE.*

MAGAZINE	AVERAGE PERCENTAGE OF YOUNG READERS, 1995-2000	AVERAGE No. OF YOUNG READERS, 1995-2000	EXPENDITURES FOR YOUTH BRANDS						EXPENDITURES FOR ADULT BRANDS					
			1995	1996	1997	1998	1999	2000	1995	1996	1997	1998	1999	2000
		millions	millions of dollars						millions of dollars					
Adult-oriented magazines														
<i>Ladies' Home Journal</i>	4.0	0.69	0.0	0.0	0.0	0.0	0.0	0.0	8.2	5.9	3.8	3.4	6.7	3.8
<i>Family Circle</i>	4.1	1.01	0.0	0.0	0.0	1.1	0.0	0.0	7.3	8.6	4.6	2.9	6.3	3.3
<i>Better Homes and Gardens</i>	4.2	1.54	1.1	1.8	0.4	1.8	0.2	0.0	9.0	10.3	8.4	7.1	13.4	8.4
<i>Woman's Day</i>	4.6	1.05	2.0	2.0	0.2	2.2	0.1	0.0	10.0	9.5	7.6	4.1	6.8	6.2
<i>McCall's</i>	5.5	0.92	0.6	0.4	0.0	1.3	0.1	0.0	6.2	5.2	5.2	2.9	5.2	5.0
<i>Redbook</i>	6.3	0.85	1.2	0.0	0.0	1.8	0.0	0.0	6.1	2.5	4.5	2.1	5.1	2.2
<i>Time</i>	7.2	1.78	4.7	3.4	2.7	3.7	9.0	9.3	8.8	6.4	4.5	3.7	4.6	4.3
<i>Newsweek</i>	8.0	1.78	0.6	1.1	0.5	0.0	0.2	0.0	5.4	5.4	2.7	3.2	6.4	1.2
<i>National Enquirer</i>	9.4	1.65	0.0	0.0	0.0	0.0	0.1	0.9	0.0	0.0	0.0	0.0	0.7	2.9
<i>Cosmopolitan</i>	10.4	1.79	4.0	3.6	4.3	5.8	6.3	6.3	6.4	6.2	4.8	4.7	7.7	6.0
<i>Field & Stream</i>	10.6	1.46	3.0	2.7	1.8	1.7	3.2	3.6	4.4	3.2	3.0	3.4	3.9	3.6
<i>Star</i>	11.0	1.04	0.0	0.0	0.0	0.0	0.1	0.6	0.0	0.0	0.0	0.0	0.6	0.7
<i>Soap Opera Digest</i>	12.8	1.11	0.9	1.4	1.7	1.2	1.3	1.4	2.0	1.5	2.1	2.0	2.9	1.1
<i>GQ</i>	12.9	0.91	1.7	2.6	2.1	2.1	2.3	3.0	1.0	1.1	1.7	2.2	3.1	1.7
<i>Popular Mechanics</i>	13.1	1.40	3.6	1.5	1.4	1.6	1.2	1.2	2.4	1.8	2.4	1.7	3.2	1.8
<i>Ebony</i>	13.7	1.80	0.6	0.3	0.7	0.7	0.6	0.6	1.8	1.8	1.2	1.1	2.2	1.1
<i>Glamour</i>	14.6	1.95	1.7	2.5	2.8	3.8	4.1	4.3	3.2	3.6	3.6	3.8	5.4	3.6
<i>Jet</i>	14.9	1.52	0.4	0.3	0.6	0.4	0.4	0.5	1.0	1.1	0.9	1.1	1.9	1.0
All adult-oriented magazines	9.3	1.35	26.3	23.6	18.9	29.2	29.2	31.7	83.4	74.0	60.9	49.4	85.9	58.0
Youth-oriented magazines														
<i>People</i>	8.5	3.34	11.8	11.1	6.8	9.7	11.9	11.1	19.5	18.8	18.1	17.5	25.1	13.1
<i>TV Guide</i>	12.8	5.75	2.8	3.3	3.0	3.8	2.8	1.9	13.9	13.9	9.2	12.7	19.8	9.0
<i>Self</i>	15.2	0.77	0.2	0.0	0.0	0.0	0.0	0.0	1.0	1.7	1.6	0.7	0.5	0.8
<i>Harper's Bazaar</i>	15.2	0.53	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.8	0.7	0.6	2.1	2.1
<i>Essence</i>	15.6	1.25	0.5	0.3	0.6	0.6	0.5	0.6	1.4	1.5	1.2	1.1	2.7	1.1
<i>Car and Driver</i>	16.4	1.39	2.6	3.1	3.2	2.9	4.3	4.0	1.9	1.5	1.2	0.5	0.6	2.0
<i>Elle</i>	16.7	0.80	1.2	1.0	1.1	1.1	1.3	1.8	0.4	1.7	1.3	1.5	2.5	1.3
<i>Mademoiselle</i>	16.9	1.09	1.3	1.7	2.4	2.3	2.6	2.9	1.4	2.6	2.2	2.2	3.0	2.0
<i>Vogue</i>	17.1	1.84	1.6	1.5	2.1	3.0	3.0	1.9	2.4	2.7	2.6	2.4	3.2	1.3
<i>Outdoor Life</i>	17.2	1.20	1.5	1.6	1.9	1.1	1.2	1.6	1.5	1.6	1.9	1.4	2.4	1.5
<i>Sports Illustrated</i>	17.7	4.95	22.5	16.8	14.3	20.8	23.8	18.5	17.3	18.0	18.4	24.7	27.5	21.3
<i>Motor Trend</i>	18.0	1.27	2.0	1.8	1.7	2.5	2.2	2.9	0.7	2.3	2.7	2.4	3.7	2.0
<i>Premiere</i>	18.6	0.45	0.8	1.3	1.3	1.6	1.4	1.4	1.6	2.1	1.1	0.9	2.0	1.5
<i>Road & Track</i>	18.7	1.13	1.7	1.5	1.5	1.2	2.3	2.1	2.1	1.2	2.1	0.4	1.1	0.3
<i>Popular Science</i>	18.8	1.54	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.1	1.0	1.5	0.4	0.0
<i>Rolling Stone</i>	21.0	2.25	3.7	3.8	4.6	5.4	7.4	6.6	2.5	3.0	5.6	7.9	8.5	5.1
<i>Ski</i>	23.3	0.59	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<i>Skiing</i>	24.0	0.57	0.0	0.0	0.2	0.3	0.1	0.2	0.0	0.0	0.0	0.0	0.2	0.3
<i>Hot Rod</i>	25.0	2.14	1.8	1.5	1.6	1.6	2.1	1.6	0.3	0.8	1.0	1.8	2.3	1.8
<i>Sporting News</i>	26.1	1.15	0.5	0.6	0.4	0.5	0.5	0.6	1.0	1.3	0.8	2.0	1.0	1.3
All youth-oriented magazines	18.1	1.70	56.4	50.5	46.6	58.5	67.4	59.6	72.2	77.6	72.5	82.3	108.6	67.6
Total	13.9	1.53	82.7	74.2	65.6	87.6	96.6	91.3	155.5	151.6	133.4	131.7	194.5	125.6
Percentage of total expenditures allocated to youth-oriented magazines	—	—	68.2	68.2	71.1	66.7	69.7	65.3	46.4	51.2	54.4	62.5	55.8	53.8

*Data on expenditures for cigarette advertising were obtained from Competitive Media Reporting. Data on young and adult readers were obtained from Mediarmark Research. Young readers were defined as those 12 to 17 years old; adult readers were defined as those 18 years old or older. Youth brands were defined as those that were smoked by more than 5 percent of the smokers in the 8th, 10th, and 12th grades in 1998, according to the Monitoring the Future study.²⁷ The youth brands we studied were Marlboro, Newport, and Camel. The adult brands were Winston, Parliament, Kool, Basic, Virginia Slims, Doral, Benson & Hedges, Salem, Merit, Misty, Capri, and Carlton. Youth-oriented magazines were defined as those for which young readers made up at least 15 percent of the overall readership, on average, between 1995 and 2000 or that had an average of at least 2 million young readers during this period. Expenditures are expressed in 2000 dollars.

adult-oriented magazines increased by 11.0 percent from 1995 (\$26.3 million) to 1998 (\$29.2 million), remained constant in 1999 (\$29.2 million), and increased by 8.6 percent in 2000 (\$31.7 million) (Table 1). Expenditures on advertising for youth brands in youth-oriented magazines increased by 3.7 percent between 1995 (\$56.4 million) and 1998 (\$58.5 million), increased by 15.2 percent in 1999 (\$67.4 million), and returned to a level slightly higher than the presettlement level in 2000 (\$59.6 million).

Expenditures on advertising for adult brands in adult-oriented magazines fell by 40.8 percent from 1995 (\$83.4 million) to 1998 (\$49.4 million), rose by 73.9 percent in 1999 (\$85.9 million), and dropped by 32.5 percent in 2000 (\$58.0 million) (Table 1). Expenditures on advertising for adult brands in youth-oriented magazines increased by 14.0 percent from 1995 (\$72.2 million) to 1998 (\$82.3 million), rose by 32.0 percent in 1999 (\$108.6 million), and fell to below presettlement levels in 2000 (\$67.6 million).

As compared with expenditures during the presettlement period (1995 through 1998), the average annual expenditures in youth-oriented magazines during the two years after the tobacco settlement were 53.8 percent higher for Camel (\$20.0 million vs. \$13.0 million per year), 8.0 percent higher for Marlboro (\$37.6 million vs. \$34.8 million per year), and 13.2 percent higher for Newport (\$6.0 million vs. \$5.3 million per year) (Table 2). The overall expenditures of Brown & Williamson and Philip Morris for advertising in youth-oriented magazines increased from 1998 to 1999 (by 130.8 percent and 16.2 percent, respectively) but then decreased in 2000 (by 76.1 percent and 30.6 percent, respectively) to below presettlement levels (and to the lowest level for the study period for each company). Expenditures by R.J. Reynolds on advertising in youth-oriented magazines increased by 19.1 percent from 1998 to 1999 and decreased by 8.1 percent in 2000 but remained higher than presettlement levels. Expenditures by Lorillard on advertising in youth-ori-

TABLE 2. TRENDS IN EXPENDITURES ON CIGARETTE ADVERTISING IN MAGAZINES, 1995 THROUGH 2000, ACCORDING TO CIGARETTE BRAND AND COMPANY.*

CIGARETTE BRAND OR COMPANY†	EXPENDITURES IN YOUTH-ORIENTED MAGAZINES						EXPENDITURES IN ADULT-ORIENTED MAGAZINES					
	1995	1996	1997	1998	1999	2000	1995	1996	1997	1998	1999	2000
	millions of dollars											
Youth brand												
Camel	9.1	13.4	12.6	16.9	19.6	20.4	3.7	4.8	5.0	4.7	5.7	6.3
Marlboro	41.8	32.2	29.6	35.4	42.1	33.1	20.7	17.5	12.9	20.7	19.8	20.7
Newport	5.5	5.0	4.5	6.2	5.7	6.2	1.9	1.3	1.0	3.7	3.6	4.7
Total	56.4	50.5	46.6	58.5	67.4	59.6	26.3	23.6	18.9	29.2	29.2	31.7
Adult brand												
Basic	10.2	10.6	9.0	11.9	12.4	6.4	3.7	2.6	2.1	2.9	13.5	13.1
Benson & Hedges	4.8	4.2	3.6	3.8	3.8	0.2	12.5	6.5	6.4	7.0	7.3	0.8
Capri	4.6	4.8	2.0	0.0	1.7	0.0	11.2	10.6	6.7	0.0	3.7	0.0
Carlton	2.9	3.4	0.0	0.0	3.7	0.0	8.7	9.4	0.0	0.0	5.9	0.1
Doral	6.3	13.3	9.4	8.3	11.8	12.5	4.4	6.7	9.9	8.1	8.7	5.4
Kool	13.1	12.6	4.5	10.7	15.8	5.8	7.1	4.2	1.0	2.0	4.6	2.5
Merit	9.6	10.2	9.8	8.8	7.9	5.2	13.4	10.9	10.6	10.1	12.7	7.8
Misty	3.2	4.9	4.2	0.0	3.5	0.1	6.1	7.8	6.5	0.0	7.4	0.0
Parliament	2.2	2.5	2.2	2.7	7.8	3.9	0.6	0.6	0.7	0.8	1.3	0.8
Salem	0.6	0.0	0.1	0.8	3.4	2.9	0.5	0.0	0.0	0.0	0.4	1.5
Virginia Slims	8.1	9.1	9.0	8.5	8.7	8.5	12.6	13.9	11.6	11.2	11.9	17.1
Winston	6.5	1.9	18.8	26.8	28.1	22.0	2.6	0.7	5.5	7.4	8.5	9.0
Total	72.2	77.6	72.5	82.3	108.6	67.6	83.4	74.0	60.9	49.4	85.9	58.0
Company												
Brown & Williamson	23.8	25.8	10.7	10.7	24.7	5.9	33.1	32.0	14.1	2.0	21.6	2.7
Lorillard	5.5	5.0	4.5	6.2	5.7	6.2	1.9	1.3	1.0	3.7	3.6	4.7
Philip Morris	76.8	68.7	63.1	71.1	82.6	57.3	63.4	52.1	44.3	52.7	66.5	60.1
R.J. Reynolds	22.5	28.6	40.8	52.8	62.9	57.8	11.2	12.3	20.4	20.2	23.5	22.1
Total	128.5	128.1	119.1	140.7	176.0	127.2	109.7	97.6	79.8	78.6	115.2	89.7

*Data on expenditures for cigarette advertising were obtained from Competitive Media Reporting. Youth-oriented magazines were defined as those for which young readers made up at least 15 percent of the overall readership, on average, between 1995 and 2000 or that had an average of at least 2 million young readers during this period. Youth brands of cigarettes were defined as those smoked by more than 5 percent of the smokers in the 8th, 10th, and 12th grades in 1998, according to the Monitoring the Future study.²⁷ Expenditures are expressed in 2000 dollars.

†Basic, Benson & Hedges, Marlboro, Merit, Parliament, and Virginia Slims are sold by Philip Morris; Camel, Doral, Salem, and Winston by R.J. Reynolds; Capri, Carlton, Kool, and Misty by Brown & Williamson; and Newport by Lorillard.

ented magazines fell by 8.1 percent in 1999 but increased by 8.8 percent in 2000.

Throughout the study period, tobacco companies consistently allocated to youth-oriented magazines a higher percentage of their expenditures for the advertising of youth brands of cigarettes than of expenditures for the advertising of adult brands (Table 1 and Fig. 1). Between 1995 and 2000, 65.3 percent to 71.1 percent of the expenditures on advertising for youth brands was allocated to youth-oriented magazines, whereas only 46.4 percent to 62.5 percent of such expenditures for adult brands was allocated to youth-oriented magazines.

Trends in the Exposure of Young People to Cigarette Advertising

Between 1995 and 2000, the average proportion of young people in the United States who were potentially exposed to cigarette advertisements in magazines each year ranged from 81.9 percent to 88.4 percent for youth brands of cigarettes and from 55.5 percent to 80.1 percent for adult brands (Table 3). The

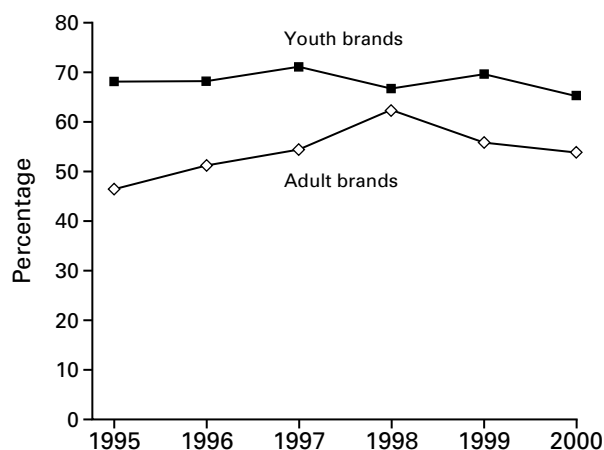


Figure 1. Trends in the Proportions of Expenditures for Magazine Advertising of Adult and Youth Brands of Cigarettes That Were Allocated to Youth-Oriented Magazines in 1995 through 2000.

Data are from Competitive Media Reporting. Adult-oriented magazines were defined as those for which young readers made up less than 15 percent of the overall readership between 1995 and 2000 and that had an average of fewer than 2 million young readers. Youth brands of cigarettes (Marlboro, Camel, and Newport) were defined as those that were smoked by more than 5 percent of the smokers in the 8th, 10th, and 12th grades in 1998, according to the Monitoring the Future study.²⁷ Adult brands of cigarettes (Basic, Benson & Hedges, Capri, Carlton, Doral, Kool, Merit, Misty, Parliament, Salem, Virginia Slims, and Winston) were defined as those that were smoked by 5 percent or less of the smokers in the 8th, 10th, and 12th grades in 1998. The differences between adult and youth brands were significant ($P=0.001$ by the two-tailed paired-sample t-test).

average proportion of these young people who were reached by cigarette advertisements was higher for youth brands than for adult brands throughout the study period (Fig. 2). The average reach of the advertisements for the youth brands remained relatively stable throughout the study period. The average reach of the advertisements for the adult brands declined by 30.7 percent from 1995 to 2000, despite a substantial increase in 1999.

The proportion of young people reached by magazine advertising for individual youth brands of cigarettes ranged from 75.0 percent to 95.2 percent (Table 3). The overall reach was relatively stable throughout the period for each of the three youth brands.

The proportion of young people who were potentially exposed three or more times in a given year to cigarette advertising (effective reach) for youth brands between 1995 and 2000 ranged from 61.3 percent to 87.9 percent. The average effective reach ranged from 69.4 percent to 77.6 percent for the youth brands and from 40.9 percent to 66.9 percent for the adult brands.

The average frequency of potential exposure to magazine advertising for the three youth brands of cigarettes between 1995 and 2000 ranged from 10.2 to 32.8 per year. The overall average frequency ranged from 16.7 to 25.4 per year for all the youth brands and from 8.0 to 14.7 per year for all the adult brands.

Despite the reductions in expenditures for cigarette advertising, advertisements for individual youth brands of cigarettes reached between 75.0 percent and 87.5 percent of all young people 12 to 17 years of age in the United States in 2000 (Table 3) and reached between 61.3 percent and 77.4 percent of young people at least three times. In 2000, the average number of times a young person was potentially exposed to a magazine advertisement for a youth brand of cigarettes ranged from 12.2 to 21.2. On average, advertisements for youth brands of cigarettes reached 81.9 percent of the nation's young people an average of 17.1 times each during 2000.

The Effect of Restricting Cigarette Advertising to Adult-Oriented Magazines

The average percentage of young readers of the 38 magazines ranged from 4.0 percent (*Ladies' Home Journal*) to 26.1 percent (*Sporting News*) (Table 1). The mean number of young readers of the magazines ranged from 0.45 million (*Premiere*) to 5.75 million (*TV Guide*). Although the average percentage of young readers was about twice as high for the youth-oriented magazines (18.1 percent) as for the adult-oriented magazines (9.3 percent), the absolute difference between the average young readership of the youth-oriented magazines (1.70 million) and that of the adult-oriented magazines (1.35 million) was small.

Our analysis of exposure suggests that although restricting advertising to magazines for which young readers represent less than 15 percent of the overall

TABLE 3. TRENDS IN THE EXPOSURE OF YOUNG PEOPLE TO CIGARETTE ADVERTISING IN MAGAZINES, 1995 THROUGH 2000, ACCORDING TO THE BRAND OF CIGARETTES.*

CIGARETTE BRAND	OVERALL REACH AMONG YOUNG TARGET AUDIENCE											
	ALL MAGAZINES						ADULT-ORIENTED MAGAZINES ONLY					
	1995	1996	1997	1998	1999	2000	1995	1996	1997	1998	1999	2000
	percent of all young people exposed											
Youth brand												
Camel	85.1	84.3	80.4	78.0	84.7	83.3	51.8	50.3	43.2	34.2	37.1	35.8
Marlboro	95.2	93.2	91.4	91.1	92.1	87.5	70.6	63.5	59.8	60.2	63.0	57.1
Newport	79.4	87.7	75.8	86.3	87.2	75.0	38.4	50.2	25.3	51.5	60.3	41.2
Adult brand												
Basic	90.7	87.3	83.8	86.8	87.1	78.8	50.3	41.6	33.9	37.7	52.1	47.5
Benson & Hedges	86.6	84.7	80.9	83.4	83.9	28.0	64.6	59.2	53.7	55.3	58.9	25.9
Capri	64.6	62.1	53.2	0.0	48.3	1.3	50.7	43.8	40.3	0.0	31.9	0.0
Carlton	75.3	77.7	0.0	0.0	72.7	8.7	54.6	49.5	0.0	0.0	43.2	8.7
Doral	77.2	85.2	78.5	80.0	84.9	80.5	37.9	40.5	44.0	39.8	45.9	34.7
Kool	91.7	89.4	64.4	86.9	90.0	71.0	63.5	50.4	23.1	35.0	47.9	33.2
Merit	89.3	86.6	87.5	87.5	85.8	76.1	67.2	56.9	58.3	58.1	62.8	52.7
Misty	76.1	75.8	75.7	0.0	71.6	22.7	50.8	46.2	43.1	0.0	46.8	2.7
Parliament	72.8	76.4	71.8	78.6	80.2	70.7	32.6	29.8	29.5	30.9	30.7	26.2
Salem	64.0	0.0	22.5	33.2	39.3	68.8	41.6	0.0	0.0	0.0	16.7	34.7
Virginia Slims	82.4	82.5	81.0	81.8	80.8	74.5	63.2	59.3	56.9	55.5	57.5	56.7
Winston	90.8	88.9	90.9	91.2	90.0	85.1	62.6	47.5	49.0	53.4	51.1	52.7
Average												
Youth brands	86.6	88.4	82.5	85.1	88.0	81.9	53.6	54.7	42.8	48.6	53.5	44.7
Adult brands	80.1	74.7	65.9	59.1	76.2	55.5	53.3	43.7	36.0	30.5	45.5	31.3
	millions											
Total no. of young people 12-17 yr old in the U.S. (total target audience)	21.9	22.5	22.5	22.8	23.2	23.0	21.9	22.5	22.5	22.8	23.2	23.0

*The estimates of exposure were generated by Initiative Media North America with the use of data obtained from Competitive Media Reporting and Mediamark Research and with Interactive Market Systems Modal software. Reach is defined as the percentage of young people 12 to 17 years old who read at least one issue of a magazine containing an advertisement for a particular brand of cigarettes in a given year, on the basis of the sample of 38 magazines included in this study. The number of young people who were potentially exposed can be derived by multiplying this percentage by the total number of young people (reported in the last line of the table). Adult-oriented magazines were defined as those for which young readers represented less than 15 percent of the overall readership, on average, between 1995 and 2000 and that had an average of fewer than 2 million young readers during that period. Youth brands were defined as those that were smoked by more than 5 percent of the smokers in the 8th, 10th, and 12th grades in 1998, according to the Monitoring the Future study.²⁷

readership and that have fewer than 2 million young readers would reduce the extent of young people's exposure to cigarette advertising, their exposure would still be substantial (Table 3). On the basis of the 2000 levels of advertising, advertising for Marlboro would still reach 57.1 percent (13.1 million) of the nation's young people, and these young people would potentially be exposed to Marlboro advertisements an average of 8.3 times during the year. Newport advertisements would still reach 41.2 percent (9.5 million) of the nation's young people an average of 9.3 times during the year, and Camel advertisements would reach 35.8 percent (8.2 million) of the nation's young people an average of 5.8 times during the year. On average, advertisements for youth brands of cigarettes would still reach 44.7 percent of the nation's young people 7.8 times per year. Since the analysis assumes that none of the advertising dollars taken away from youth-oriented magazines would be reinvested in

adult-oriented magazines, which seems unlikely, our estimates represent an optimistic scenario.

DISCUSSION

The Master Settlement Agreement with the tobacco industry appears to have had little effect on cigarette advertising in magazines. We found that both before and after the 1998 Master Settlement Agreement, tobacco companies consistently allocated to youth-oriented magazines a higher proportion of their expenditures for the advertising of youth brands than of expenditures for the advertising of adult brands and consistently maintained higher levels of exposure among young people to advertising for youth brands than to advertising for adult brands. Despite reductions in the expenditures for cigarette advertising in youth-oriented magazines in the second year after the settlement, the overall level of exposure of young people to this advertising remained high. Although the

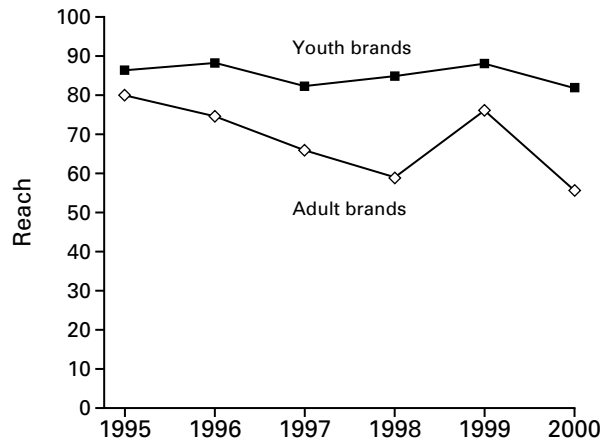


Figure 2. Trends in the Average Proportion of Young People in the United States Reached by Magazine Advertising for Youth and Adult Brands of Cigarettes (Reach) in 1995 through 2000.

Reach is defined as the proportion of all young people 12 to 17 years old who read one or more issues of a magazine containing an advertisement for a given brand of cigarettes during a given year. Data are from Competitive Media Reporting. Youth-oriented magazines were defined as those for which young readers represented more than 15 percent, on average, of the overall readership between 1995 and 2000 or that had an average of more than 2 million young readers. Youth and adult brands were defined as in Figure 1. The differences between adult and youth brands were significant ($P=0.004$ by the two-tailed paired-sample t-test).

proposed restriction of cigarette advertising to magazines for which young readers represent less than 15 percent of the overall readership and that have fewer than 2 million young readers would reduce the exposure of young people to cigarette advertising in magazines, such a policy, even under the most optimistic assumptions, would not protect young people from substantial exposure to such advertising.

The decline in advertising in youth-oriented magazines in 2000 reflects, in part, Philip Morris' decision to discontinue advertising in youth-oriented magazines starting in September 2000.^{25,26} Brown & Williamson also reduced its level of advertising in magazines with a high proportion of young readers, but neither R.J. Reynolds nor Lorillard substantially changed its level of advertising in youth-oriented magazines during the first two years after the settlement. Nevertheless, the voluntary policy adopted by Philip Morris does not appear adequate to protect young people from substantial exposure to cigarette advertising in magazines. Our findings suggest that more stringent policies may be required. Such policies might better be guided by an analysis of the reach and frequency of cigarette advertising rather than by an arbitrary criterion based on the percentage of young readers.

Our results are subject to several limitations. First, we analyzed only a sample of magazines. Several major

magazines with substantial readership among young people (including *Spin*, *Entertainment Weekly*, *Vibe*, *Sport*, *Life*, and *Allure*) were excluded because data on their readers were missing for certain years. Our estimates of both advertising expenditures and the potential exposure of young people are therefore conservative.

Second, our measures of exposure include only the number of young people who saw magazines carrying the advertisements, not the number of young people who actually saw the advertisements. Research has demonstrated, however, that cigarette advertisements contain colorful, attractive, and prominently placed imagery that appeals to young people.³

Finally, magazine advertising remains but one small part (4.6 percent) of the tobacco industry's total marketing expenditures (\$8.2 billion in 1999).⁴¹ Other marketing tools include coupons, direct mail, Internet advertising, newspaper advertising, point-of-sale advertising, promotional allowances to retailers, sponsorship of public entertainment, retail value-added programs (such as "buy one, get one free"), the distribution of samples, and the distribution of specialty items. Many of these promotional techniques have previously been found to have great appeal for young people.^{3,19,42} No effort to reduce smoking among young people or other groups will succeed without a complete understanding of the entire marketing programs of tobacco companies.

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