



Policy Statement—Children, Adolescents, Substance Abuse, and the Media

THE COUNCIL ON COMMUNICATIONS AND MEDIA

KEY WORDS

adolescence, substance use, alcohol, tobacco, cigarettes, illicit drugs, TV, movies, Internet

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abstract

The causes of adolescent substance use are multifactorial, but the media can play a key role. Tobacco and alcohol represent the 2 most significant drug threats to adolescents. More than \$25 billion per year is spent on advertising for tobacco, alcohol, and prescription drugs, and such advertising has been shown to be effective. Digital media are increasingly being used to advertise drugs. In addition, exposure to PG-13— and R-rated movies at an early age may be a major factor in the onset of adolescent tobacco and alcohol use. The American Academy of Pediatrics recommends a ban on all tobacco advertising in all media, limitations on alcohol advertising, avoiding exposure of young children to substance-related (tobacco, alcohol, prescription drugs, illegal drugs) content on television and in PG-13— and R-rated movies, incorporating the topic of advertising and media into all substance abuse—prevention programs, and implementing media education programs in the classroom. *Pediatrics* 2010;126:791–799

INTRODUCTION

Although parents, schools, and the federal government are trying to get children and teenagers to “just say no” to drugs, more than \$25 billion worth of cigarette, alcohol, and prescription drug advertising is effectively working to get them to “just say yes” to smoking, drinking, and other drugs.^{1,2} In addition, television programs and movies contain appreciable amounts of substance use. Unlike traditional advertising, media depictions of legal drugs are generally positive and invite no criticism, because they are not viewed as advertising.³ The result is that young people receive mixed messages about substance use, and the media contribute significantly to the risk that young people will engage in substance use.

ADOLESCENT DRUG USE

Although illegal drugs take their toll on American society, 2 legal drugs—alcohol and tobacco—pose perhaps the greatest danger to children and teenagers. Both represent significant gateway drugs and are among the earliest drugs used by children or teenagers. A preadolescent or adolescent who smokes tobacco or drinks alcohol is 65 times more likely to use marijuana, for example, than someone who abstains.⁴ The younger the age at which experimentation occurs, the greater the risk of serious health problems.⁵ Every year, more than 400 000 Americans die from illnesses directly related to cigarette use—more than from AIDS, car crashes, murder, and suicide combined.⁶ More than 100 000 deaths annually can be attributed to exces-

sive alcohol consumption,⁷ including the death of 5000 people younger than 21 years.⁸ Drug use also represents one of many risky behaviors that occur during adolescence: teenagers who report that at least half of their friends are sexually active are 31 times more likely to drink, 5 times more likely to smoke, and 22 times more likely to try marijuana than are teenagers who do not report such a high prevalence of sexual activity among friends.⁹

EFFECTS OF ADVERTISING

The power of advertising to influence children and adolescents (and adults, for that matter) is incontrovertible.^{1,10} Advertising works; otherwise, companies would not spend billions of dollars on it.¹ Many ads use celebrity endorsers, humor, rock music, or attractive young models, all of which have been shown to be effective with children and adolescents.¹¹ Advertising makes smoking and drinking seem like normative activities and may function as a “superpeer” in subtly pressuring teenagers to experiment.¹² Research has revealed that advertising may be responsible for up to 30% of adolescent tobacco and alcohol use.^{13,14}

Cigarettes

More money is spent advertising tobacco than any drug—an estimated \$15 billion per year,¹⁵ almost half of what the National Institutes of Health spends each year to study all aspects of health (www.nih.gov/about/budget.htm). The tobacco industry (often referred to as “Big Tobacco”) has engaged in a systematic campaign to attract underage smokers for decades and then lied to Congress about it.^{16–19} Given the demographics of smoking (1200 deaths per day, half of which are of middle-aged adults; 50% of smokers begin by 13 years of age, and 90% of smokers begin by 19 years of age), the industry must recruit young people as smokers.²⁰ Recent statistics show that

they continue to succeed. According to the 2009 Monitoring the Future study, nearly half of all teenagers have tried smoking, as have 20% of all 8th-graders.²¹ Cigarette advertising seems to increase teenagers’ risk of smoking by glamorizing smoking and smokers.^{3,20} Smokers are depicted as young, independent, rebellious, healthy, and adventurous. By contrast, the adverse consequences of smoking are never shown. As a result, the US Surgeon General concluded in 1994 that cigarette advertising increases young people’s risk of smoking.²⁰

The most heavily advertised brands of cigarettes are also the most popular.²² Tobacco advertising may even trump strong parenting practices.²³ Teen magazines have attracted an increasing number of cigarette ads since 1965.^{24–26} Numerous studies have revealed that children or teenagers who pay closer attention to cigarette ads, who are able to recall such ads more easily, or who own promotional items are more likely to become smokers themselves.^{27–31} Joe Camel single-handedly increased the market share for Camel cigarettes from 0.5% of adolescent smokers to 32%.³² A recent meta-analysis of 51 separate studies revealed that exposure to tobacco marketing and advertising more than doubles the risk of a teenager beginning to smoke.³³

Alcohol

Approximately \$6 billion is spent annually on alcohol advertising and promotion.³⁴ Similar to tobacco ads, beer commercials are virtually custom-made to appeal to children and adolescents, using images of fun-loving, sexy, successful young people having the time of their lives.^{3,35,36} Unlike tobacco advertising, alcohol advertising faces few restrictions. For example, whereas the tobacco industry gave up television advertising in the 1960s, beer, wine,

and liquor ads are frequently featured on prime-time television, and young people view 1000 to 2000 alcohol ads annually.^{12,37} Much of the advertising is concentrated during teen-oriented shows and sports programming. All of the top-15 teen-oriented shows contain alcohol ads.³⁸ Currently, teenagers are 400 times more likely to see an alcohol ad than to see a public service announcement (PSA) that discourages underage drinking.³⁹ Teen-oriented magazines contain 48% more advertising for beer, 20% more advertising for hard liquor, and 92% more advertising for sweet alcoholic drinks than do magazines aimed at adults of legal drinking age.^{40,41}

According to the research, the effects of all of this advertising are increasingly clear.^{3,42,43} A sample of 9- to 10-year-olds could identify the Budweiser frogs nearly as frequently as they could Bugs Bunny.⁴⁴ In a study of more than 3500 South Dakota students, 75% of 4th-graders and nearly 90% of 9th-graders recognized the Budweiser ferret ad.⁴⁵ Many studies have revealed that exposure to alcohol advertising results in more positive beliefs about drinking and is predictive of drinking during early adolescence and young adulthood.^{46–52} The results of several longitudinal studies have shown a similar trend,^{53,54} although they have sometimes been mixed.⁴⁸

Prescription Drugs

Nearly \$4 billion is spent annually on prescription drug advertising.⁵⁵ Drug companies now spend more than twice as much money on marketing as they do on research and development, and studies have revealed that the marketing efforts pay off⁵⁶: results of a recent survey of physicians showed that 92% of patients had requested an advertised drug.⁵⁷ Children and teenagers get the message that there is a pill to cure all ills and a drug for every

occasion, including sexual intercourse. In the first 10 months of 2004, drugs companies spent nearly half a billion dollars advertising Viagra, Levitra, and Cialis.⁵⁸ Yet, the advertising of condoms, birth control pills, and emergency contraception is haphazard and rare and remains controversial.^{1,59}

DRUGS IN ENTERTAINMENT MEDIA

Cigarettes

Scenes with smoking remain common in movies and, to a lesser extent, on prime-time television. Hollywood seems to use smoking as a shorthand for troubled or antiestablishment characters, but the smoking status of the actors themselves is also influential in whether their characters will smoke on-screen.⁶⁰ On prime-time television, 19% of shows portray tobacco use, and approximately one-fourth of them depict negative statements about smoking.⁶¹ In addition, smoking is also found in nearly one-fourth of all music videos,⁶² one-fourth of ads for R-rated movies, and 7.5% of ads for PG-13 and PG movies.⁶³

Box-office movies and their subsequent video and pay-per-view distribution have become a major route of exposure to tobacco use. Although the most recent analyses show that smoking has decreased in popular movies,^{64,65} the occurrence remains high. A content analysis of the top 100 box-office hits between 1996 and 2004 revealed that tobacco use was depicted in three-quarters of G-, PG-, and PG-13-rated movies and in 90% of R-rated movies.⁶⁶ Half of all G-rated animated films between 1937 and 1997 contained tobacco use.⁶⁷ Although the most recent content analysis of top-grossing movies between 1991 and 2009 showed that tobacco use peaked in 2003 and has since declined, in 2009, more than half of PG-13 movies still contained tobacco use.⁶⁵ But overall, the percentage of all top-grossing

movies without smoking exceeded 50% for the first time in 2009.⁶⁵

Unique longitudinal research has revealed that one of the most important factors in the onset of adolescent substance use is exposure to others who use drugs.⁶⁸ Nowhere is that exposure greater than on contemporary movie screens, and teenagers constitute 26% of the movie-going audience (but only 16% of the US population).⁶⁹ Results of a number of correlational and longitudinal studies have confirmed that exposure to television and movie smoking is now one of the key factors that prompt teenagers to smoke.^{29,70–77} According to a new meta-analysis, it may account for nearly half of smoking initiation in young teenagers.⁸⁰ In fact, exposure to movie smoking may even trump parents' smoking status as being the key factor in adolescents' initiation of smoking.⁷³ A prospective study of more than 3500 teenagers revealed that exposure to R-rated movies doubles the risk of smoking, even when controlling for all other known factors.⁷⁹ Preadolescents whose parents forbid them from seeing R-rated movies are less likely to begin smoking (or drinking).⁸⁰ A study of 735 12- to 14-year-olds, with a 2-year follow-up, revealed that exposure to R-rated movies or having a television in the bedroom significantly increased the risk of smoking initiation for white teenagers.⁸¹ The movie effect seems not to be confined to US teenagers but applies also to teenagers from other countries as well.^{82,83}

Alcohol

Alcohol remains the number one drug portrayed on American television: 1 drinking scene is shown every 22 minutes, compared with 1 smoking scene every 57 minutes and 1 illicit drug use scene every 112 minutes.⁸⁴ On Music Television (MTV), teenagers can see al-

cohol use every 14 minutes. An analysis revealed that drugs were present in nearly half of 359 music videos—alcohol in 35%, tobacco in 10%, and illicit drugs in 13%.⁸⁵ On prime-time television, 70% of programs depict alcohol use.⁶¹ More than one-third of the drinking scenes are humorous, and negative consequences are shown in only 23%. One study revealed that alcohol portrayals are as common on shows for 9- to 14-year-olds as on adult-oriented shows.⁸⁶ In popular music, the average teenager is exposed to nearly 85 drug references a day, the majority of which are for alcohol.⁸⁷ Popular movies are nearly equally rife with alcohol, with only 2 of the 40 highest-grossing movies not containing alcohol depictions.⁸⁸ Even G- and PG-rated movies contain frequent references to alcohol.^{89,90} And, drinking is frequently depicted as normative behavior, even for teenagers.⁹¹

Again, the impact is increasingly clear from the research. A longitudinal study of more than 1500 California 9th-graders revealed that increased television and music video viewing was a risk factor for the onset of alcohol use among adolescents.⁹² Results of a Columbia University study showed that teenagers who watch more than 3 R-rated films per month are 5 times more likely to drink alcohol compared with teenagers who watch none.⁹³ Also, in an intriguing study of 2- to 6-year-olds ($n = 120$) who were asked to role-play in a make-believe store, children were 5 times more likely to "buy" beer or wine if they had been allowed to see PG-13 or R-rated movies.⁹⁴ Finally, good longitudinal evidence is emerging to indicate that watching more movie depictions of alcohol is strongly predictive of drinking onset and binge drinking in US adolescents,^{86,95,96} and the same results are being found for adolescents from other countries.^{82,97}

Illegal Drugs

Illicit drugs are rarely seen on television,⁶¹ with the exception of programs such as Showtime's *Weeds* and Fox's *That 70s Show*. Drug scenes are more common in movies (22% of the movies in 1 study contained drug scenes), and no harmful consequences are shown more than half of the time.⁹⁰ Marijuana is the most frequent drug seen in movies and seems to be making a comeback in R-rated movies such as *Harold and Kumar Go to White Castle* (2004) and *The Pineapple Express* (2008).⁹⁸ A Columbia study revealed that viewing R-rated movies was associated with a sixfold increased risk of trying marijuana.⁹⁵ Hollywood filmmakers do not seem to understand that humor tends to undermine normal adolescent defenses against drugs and legitimizes their use.³ Increased consumption of popular music is also associated with marijuana use.^{95,99}

NEW MEDIA

The new technologies—the Internet, social networking sites, and even cellular phones—offer new and problematic opportunities for adolescent drug exposure.^{3,100} A variety of Web sites sell tobacco products, and few of them have effective age-verification procedures.^{3,101} One national survey of more than 1000 youths 14 to 20 years of age revealed that 2% reported having purchased alcohol online, and 12% reported having a friend who did so.¹⁰² Prescription drugs can also be purchased online with minimal difficulty. Popular beer brands use “advergaming” online to entice a younger audience.¹⁰³ Teenagers also see considerable alcohol and drug content in online videos¹⁰⁴ and on social networking sites,¹⁰⁵ on which 1 study revealed that 40% of profiles referenced substance abuse.¹⁰⁶

SUMMARY

The so-called war on drugs has been waged for decades, yet teenagers continue to use and abuse a variety of substances, especially tobacco and alcohol. The contribution of the media to adolescent substance use is only recently becoming fully recognized and appreciated. The Master Settlement Agreement has greatly restricted tobacco marketing by the tobacco companies that signed the agreement. However, tobacco continues to appear frequently in movies, and this fact contrasts markedly with US reality (approximately half of the US population lives in a community with restrictions on indoor smoking). Moreover, the case is strong for the argument that smoking shown in entertainment media plays a causal role in smoking onset. Certainly, it is time to eliminate all tobacco advertising and to decrease greatly the depiction of smoking in mainstream media. Because alcohol use is still condoned in many venues and use in moderation may be healthful for adults, such severe restrictions on alcohol advertising and programming may not be indicated. On the other hand, underage alcohol use does pose a clear and immediate threat to the teenagers who use it. Taken together, the evidence supports strong actions aimed at the entertainment industry about media depictions of tobacco use and strong actions aimed at motivating and assisting parents of children and young teenagers to restrict access to adult media venues with excessive substance use exposure.

Anticipatory Guidance by Pediatricians

1. Pediatricians should encourage parents to limit unsupervised media use and especially encourage removal of televisions from children's bedrooms. At every well-

child visit, pediatricians should be asking at least 2 questions regarding media use: (a) How much entertainment media per day is the child or adolescent watching?² and (b) Is there a television set or Internet access in the child's or adolescent's bedroom?¹⁰⁷ Research has revealed that having a television in the bedroom is associated with greater substance use and sexual activity in teenagers.¹⁰⁸

2. Pediatricians should encourage parents to limit access by children and young adolescents to television venues with excessive substance use depictions (eg, MTV, HBO, Showtime, Comedy Central).
3. Pediatricians should encourage parents to limit younger children's exposure to PG-13 movies and avoid R-rated movies.^{29,75–81,109}
4. Pediatricians should encourage parents to co-view media with their children and teenagers and discuss the content being viewed.
5. Pediatricians should encourage parents to turn off the television during evening meals.
6. Pediatricians should ensure that their waiting rooms are free of magazines that accept cigarette and alcohol advertising.

Community Advocacy by Pediatricians

7. Pediatricians should encourage their local school systems to incorporate media education into their curricula. In particular, drug-prevention programs should use basic principles of media literacy, designed to imbue skepticism toward media advertising. Currently, Drug Abuse Resistance Education (DARE) does not accomplish this goal, nor is there any evidence that DARE is effective.^{12,110} More psychologically sophisticated drug-prevention cur-

ricula are available and should be used.^{110–113}

Legislative Advocacy by Pediatricians

8. Pediatricians should encourage Congress to ban tobacco advertising in all media accessible to children, which several European countries have already done. Such a ban would seem to be constitutional, given that the US Supreme Court has already ruled that commercial speech does not enjoy the absolute First Amendment protections that free speech does.¹¹⁴ Recently, Congress gave the Food and Drug Administration the authority to regulate tobacco products; however, the tobacco industry is expected to challenge any advertising bans.^{115,116}
9. Pediatricians should encourage Congress to require the alcohol industry to report its annual expenditures to the Federal Trade Commission, including expenditures for media venues in which children and adolescents represent more than 10% of the market share (currently, voluntary advertising restrictions allow for venues in which up to 30% of the audience is children).
10. Pediatricians should encourage the alcohol industry to restrict advertising and product placement in venues in which more than 10% of the audience is children and adolescents.
11. Pediatricians should encourage the White House Office of National Drug Control Policy to begin conducting antismoking and anti-teen-drinking public service campaigns, including strong antismoking and antidrinking ads to be placed before television programming and movies that have youth ratings and contain alcohol and tobacco depictions.
12. Pediatricians should encourage allocation of more money in media research, given the importance of the media on the development and behavior of children and adolescents. Higher taxes on tobacco products and alcohol could be used to fund such research.
13. Pediatricians should encourage Congress to pass new strict laws regulating digital advertising that targets children and adolescents.^{100,117}

Involvement of the Alcoholic Beverage, Tobacco, Drug, and Entertainment Industries in Encouraging Responsible Behavior

14. Pediatricians should encourage the advertising industry, drug companies, public health groups, and medical groups to have a full and open debate on the necessity of advertising prescription drugs. In addition, ads for erectile dysfunction drugs should be confined to after 10 PM in all time zones and should not be overly suggestive.¹
15. Pediatricians should encourage the entertainment industry to have greater sensitivity about the effects of television and movies on children and adolescents and accept that the industry does, indeed, have a public health responsibility.¹¹⁸ Cigarette smoking in movies should be avoided at all costs and should never be glamorized.^{119,120} Disney has already promised to eliminate smoking in its movies.¹²¹ Making film sets smoke-free zones would go far to diminish the portrayal of smoking in movies and would protect actors and actresses from secondhand smoke. Antismoking ads should precede the showing of any film that has tobacco use depicted.¹¹⁹ Alcohol use should not be portrayed as normative behavior for teenagers, and the traditional depiction of the “funny drunk” should be retired. Television networks that have a large adolescent viewership should air public service ads about the dangers of smoking and drinking. Finally, the Motion Picture Association of America (MPAA) ratings need to be amended so that tobacco use will routinely garner an R rating in all new movies unless the risks and consequences of smoking are unambiguously shown or the depiction is necessary to represent a real historical figure who actually used tobacco.¹¹⁹ So far, the MPAA has only agreed to consider smoking as a factor in assigning a rating.^{122,123}
16. Pediatricians should encourage state and federal agencies, the entertainment industry, and the advertising industry to develop and maintain vigorous anti-drug-advertising campaigns that focus on the 2 drugs most dangerous to adolescents—tobacco and alcohol—in addition to illegal drugs. Antidrug ads have been shown to be highly effective at times (eg, the Truth campaign),^{124–129} but the effectiveness of the National Youth Anti-Drug Media Campaign has been questioned.¹³⁰ Recently, and laudably, 6 major Hollywood studios have agreed to place antismoking ads on new movie DVDs that appeal to children.^{131,132}
17. Pediatricians should work with and support the American Academy of Pediatrics Julius Richmond Center of Excellence (www.aap.org/richmondcenter), the mission of which is “to improve child health by eliminating children’s exposure to tobacco and secondhand smoke,” including through media exposure.¹¹⁹

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REFERENCES

1. American Academy of Pediatrics, Committee on Communications. Children, adolescents, and advertising [published correction appears in *Pediatrics*. 2007;119(2):424]. *Pediatrics*. 2006;118(6):2563–2569
2. Strasburger VC, Wilson BJ, Jordan, A. *Children, Adolescents, and the Media*. 2nd ed. Thousand Oaks, CA: Sage; 2009
3. Borzekowski DLG, Strasburger VC. Tobacco, alcohol, and drug exposure. In: Calvert S, Wilson BJ, eds. *Handbook of Children and the Media*. Boston, MA: Blackwell; 2008:432–452
4. National Institute on Drug Abuse. *Drug Use Among Racial/Ethnic Minorities, 1995*. Rockville, MD: National Institute of Drug Abuse; 1995. NIH publication 95-3888
5. Belcher HM, Shinitzky HE. Substance abuse in children: prediction, protection, and prevention. *Arch Pediatr Adolesc Med*. 1998;152(10):952–960
6. American Academy of Pediatrics, Committee on Substance Abuse. Tobacco use: a pediatric disease. *Pediatrics*. 2009;124(5):1474–1487
7. Doyle R. Deaths due to alcohol. *Sci Am*. 1996;275(6):30–31
8. US Department of Health and Human Services. *The Surgeon General's Call to Action to Prevent and Reduce Underage Drinking*. Rockville, MD: US Department of Health and Human Services; 2007
9. National Center on Addiction and Substance Abuse. *National Survey of American Attitudes on Substance Abuse IX: Teen Dating Practices and Sexual Activity*. New York, NY: National Center on Addiction and Substance Abuse; 2004
10. Kunkel D. Children and television advertising. In: Singer DG, Singer JL, eds. *Handbook of Children and the Media*. Thousand Oaks, CA: Sage; 2001:375–393
11. Salkin A. Noir lite: beer's good-time humor turns black. *New York Times*. February 11, 2007:WK3
12. Strasburger VC, Jordan AB, Donnerstein E. Health effects of media on children and adolescents. *Pediatrics*. 2010;125(4):756–767
13. Atkin CK. Survey and experimental research on effects of alcohol advertising. In: Martin S, ed. *Mass Media and the Use and Abuse of Alcohol*. Rockville, MD: National Institute on Alcohol Abuse and Alcoholism; 1995:39–68
14. Pierce JP, Choi WS, Gilpin EA, Farkas AJ, Berry C. Industry promotion of cigarettes and adolescent smoking. *JAMA*. 1998;279(7):511–515
15. Tobacco Free Kids. Available at: www.tobaccofreekids.org/reports/targeting. Accessed July 19, 2010
16. Kessler D. *A Question of Intent: A Great American Battle With a Deadly Industry*. New York, NY: Public Affairs; 2001
17. Editorial: Big Tobacco's promises to reform go up in smoke. *USA Today*. September 12, 2006:14A
18. Tobacco Free Kids. *Deadly in Pink: Big Tobacco Steps Up Its Targeting of Women and Girls*. Washington, DC: Tobacco Free Kids; 2009
19. Editorial: a rogue industry. *New York Times*. May 31, 2009:WK7
20. US Department of Health and Human Services. *Preventing Tobacco Use Among Young People: Report of the Surgeon General*. Washington, DC: US Government Printing Office; 1994
21. Johnston LD, O'Malley PM, Bachman JG, Schulenberg JE. *Monitoring the Future: National Results on Adolescent Drug Use—Overview of Key Findings, 2009*. Bethesda, MD: National Institute on Drug Abuse; 2010
22. Centers for Disease Control and Prevention. Cigarette brand preference among middle and high school students who are established smokers: United States, 2004 and 2006. *MMWR Morb Mortal Wkly Rep*. 2009;58(5):112–115
23. Pierce JP, Distefan JM, Jackson C, White MM, Gilpin EA. Does tobacco marketing undermine the influence of recommended parenting in discouraging adolescents from smoking? *Am J Prev Med*. 2002;23(2):73–81
24. Brown JD, Witherspoon EM. *The Mass Media and American Adolescents' Health*. Paper commissioned for Health Futures of Youth II: Pathways to Adolescent Health. Annapolis, MD: US Department of Health and Human Services; 1998
25. Alpert HR, Koh HK, Connolly GN. After the Master Settlement Agreement: targeting and exposure of youth to magazine tobacco advertising. *Health Aff (Millwood)*. 2008;27(6):w503–w512
26. Cortese DK, Lewis MJ, Ling PM. Tobacco industry lifestyle magazines targeted to young adults. *J Adolesc Health*. 2009;45(3):268–280
27. Biener L, Siegel M. Tobacco marketing and adolescent smoking: more support for a causal inference. *Am J Public Health*. 2000;90(3):407–411
28. Sargent JD, Dalton M, Beach M. Exposure to cigarette promotions and smoking uptake in adolescents: evidence of a dose-response relation. *Tob Control*. 2000;9(2):163–168
29. Sargent J, Gibson J, Heatherton T. Comparing the effects of entertainment media and tobacco marketing on youth smoking. *Tob Control*. 2009;18(1):47–53
30. DiFranza JR, Wellman RJ, Sargent JD, Weitzman M, Hipple BJ, Winickoff JP; Tobacco Consortium, Center for Child Health Research of the American Academy of Pediatrics. Tobacco promotion and the initiation of tobacco use: assessing the evidence for causality. *Pediatrics*. 2006;117(6). Available at: www.pediatrics.org/cgi/content/full/117/6/e1237
31. Hanewinkel R, Isensee B, Sargent JD, Morgenstern M. Cigarette advertising and adolescent smoking. *Am J Prev Med*. 2010;38(4):359–366

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32. DiFranza Jr, Richards JW Jr, Paulman PM, et al. RJR Nabisco's cartoon camel promotes Camel cigarettes to children [published correction appears in *JAMA*. 1992; 268(15):2034]. *JAMA*. 1991;266(22): 3149–3153
33. Wellman RJ, Sugarman DB, DiFranza J, Winickoff JP. The extent to which tobacco marketing and tobacco use in films contribute to children's use of tobacco. *Arch Pediatr Adolesc Med*. 2006;160(12): 1285–1296
34. Center on Alcohol Marketing and Youth. *Alcohol Advertising and Youth* [fact sheet]. Washington, DC: Center on Alcohol Marketing and Youth; 2007
35. Wilcox GB, Gangadharbatla H. What's changed? Does beer advertising affect consumption in the United States? *Int J Advert*. 2006;25(1):35–50
36. Grube JW, Waiters E. Alcohol in the media: content and effects on drinking beliefs and behaviors among youth. *Adolesc Med Clin*. 2005;16(2):327–343
37. Jernigan DH. Importance of reducing youth exposure to alcohol advertising. *Arch Pediatr Adolesc Med*. 2006;160(1): 100–102
38. Center on Alcohol Marketing and Youth. Georgetown study finds number of alcohol ads bombarding teens rose in 2002 [press release]. April 21, 2004. Available at: www1.georgetown.edu/explore/news/?ID=783. Accessed August 12, 2009
39. Mothers Against Drunk Driving. Latest CAMY study shows TV alcohol ads outnumber responsibility ads 226 to 1 [press release]. May 26, 2004. Available at: www.camy.org/research/responsibility0504. Accessed August 12, 2009
40. Garfield CF, Chung PJ, Rathouz PJ. Alcohol advertising in magazines and adolescent readership. *JAMA*. 2003;289(18): 2424–2429
41. King C III, Siegel M, Jernigan DJ, Wulach L, Ross C, Dixon K, Ostroff J. Adolescent exposure to alcohol advertising in magazines: an evaluation of advertising placement in relation to underage youth readership. *J Adolesc Health*. 2009;45(6):626–633
42. McClure AC, Stoolmiller M, Tanski SE, Worth KA, Sargent JD. Alcohol-branded merchandise and its association with drinking attitudes and outcomes in US adolescents. *Arch Pediatr Adolesc Med*. 2009; 163(3):211–217
43. Jernigan DH. Alcohol-branded merchandise. *Arch Pediatr Adolesc Med*. 2009; 163(3):278–279
44. Leiber L. *Commercial and Character Slo-gan Recall by Children Aged 9 to 11 Years: Budweiser Frogs Versus Bugs Bunny*. Berkeley, CA: Center on Alcohol Advertising; 1996
45. Collins RL, Ellickson PL, McCaffrey DF, Hambarsoomians K. Saturated in beer: awareness of beer advertising in late childhood and adolescence. *J Adolesc Health*. 2005; 37(1):29–36
46. Grube J, Wallack L. Television beer advertising and drinking knowledge, beliefs, and intentions among schoolchildren. *Am J Public Health*. 1994;84(2):254–259
47. Stacy AW, Zogg JB, Unger JB, Dent CW. Exposure to televised alcohol ads and subsequent adolescent alcohol use. *Am J Health Behav*. 2004;28(6):498–509
48. Ellickson PH, Collins RL, Hambarsoomians K, McCaffrey DF. Does alcohol advertising promote adolescent drinking? Results from a longitudinal assessment. *Addiction*. 2005;100(2):235–246
49. Austin EW, Chen MJ, Grube JW. How does alcohol advertising influence underage drinking? The role of desirability, identification and skepticism. *J Adolesc Health*. 2006;38(4):376–384
50. Snyder LB, Milici FF, Slater M, Sun H, Strizhakova Y. Effects of alcohol advertising exposure on drinking among youth. *Arch Pediatr Adolesc Med*. 2006;160(1): 18–24
51. Collins RL, Ellickson PL, McCaffrey DF, Hambarsoomians K. Early adolescent exposure to alcohol advertising and its relationship to underage drinking. *J Adolesc Health*. 2007;40(6):527–534
52. Engels RCME, Hermans R, van Baaren RB, Hollenstein T, Bot SM. Alcohol portrayal on television affects actual drinking behaviour. *Alcohol Alcohol*. 2009;44(3):244–249
53. Casswell S, Zhang JF. Impact of liking for advertising and brand allegiance on drinking and alcohol-related aggression: a longitudinal study. *Addiction*. 1998;93(8): 1209–1217
54. Henriksen L, Feighery EC, Schleicher NC, Fortmann SP. Receptivity to alcohol marketing predicts initiation of alcohol use. *J Adolesc Health*. 2008;42(1):28–35
55. Rubin A. Prescription drugs and the cost of advertising them. July 23, 2007. Available at: www.therubins.com/geninfo/advertise2.htm. Accessed July 25, 2007
56. Rosenthal MB, Berndt ER, Frank RG, Donohue JM, Epstein AM. Promotion of prescription drugs to consumers. *N Engl J Med*. 2002;346(7):498–505
57. Thomaselli R. 47% of doctors feel pressured by DTC drug advertising. *Advert Age*. January 14, 2003
58. Snowbeck C. FDA tells Levitra to cool it with ad. *Pittsburgh Post-Gazette*. April 19, 2005 Available at: www.postgazette.com/pg/05109/490334.stm. Accessed August 12, 2009
59. Strasburger VC. Adolescents, sex, and the media: oooo, baby, baby—a Q & A. *Adolesc Med Clin*. 2005;16(2):269–288
60. Shields DL, Carol J, Balbach ED, McGee S. Hollywood on tobacco: how the entertainment industry understands tobacco portrayal. *Tob Control*. 1999;8(4):378–386
61. Christenson PG, Henriksen L, Roberts DF. *Substance Use in Popular Prime-Time Television*. Washington, DC: Office of National Drug Policy Control; 2000
62. DuRant RH, Rome ES, Rich M, Allred E, Emans SJ, Woods ER. Tobacco and alcohol use behaviors portrayed in music videos: a content analysis [published correction appears in *Am J Public Health*. 1997;87(9): 1514]. *Am J Public Health*. 1997;87(7): 1131–1135
63. Heaton CG, Watson-Stryker ES, Allen JA, et al. Televised movie trailers undermining restrictions on advertising tobacco to youth. *Arch Pediatr Adolesc Med*. 2006; 160(9):885–888
64. Sargent JD, Heatherton TF. Comparison of trends for adolescent smoking and smoking in movies, 1990–2007. *JAMA*. 2009; 301(21):2211–2213
65. Glantz SA, Titus K, Mitchell S, Polansky J, Kaufmann RB. Smoking in top-grossing movies—United States, 1991–2009. *MMWR Morb Mortal Wkly Rep*. 2010;59(32): 1014–1017
66. American Legacy Foundation. *Trends in Top Box-Office Movie Tobacco Use: 1996–2004*. Washington, DC: American Legacy Foundation; 2006
67. Goldstein AO, Sobel RA, Newman GR. Tobacco and alcohol use in G-rated children's animated films. *JAMA*. 1999; 281(12):1131–1136
68. Kosterman R, Hawkins JD, Guo J, Catalano RF, Abbott RD. The dynamics of alcohol and marijuana initiation: patterns and predictors of first use in adolescence. *Am J Public Health*. 2000;90(3):360–366
69. Rauzi R. The teen factor: today's media-savvy youths influence what others are seeing and hearing. *Los Angeles Times*. June 9, 1998:F1
70. Davis RM, Gilpin EA, Loken B, Viswanath K, Wakefield MA. *The Role of the Media in Promoting and Reducing Tobacco Use. NCI Tobacco Control Monograph No 19*. Washing-

- ton, DC: US Department of Health and Human Services; 2008
71. Dalton MA, Sargent JD, Beach ML, et al. Effect of viewing smoking in movies on adolescent smoking initiation: a cohort study. *Lancet*. 2003;362(9380):281–285
 72. Sargent JD, Beach ML, Dalton MA, et al. Effect of parental R-rated movie restriction on adolescent smoking initiation. *Pediatrics*. 2004;114(1):149–156
 73. Sargent JD, Beach ML, Adachi-Mejia AM, et al. Exposure to movie smoking: its relation to smoking initiation among US adolescents. *Pediatrics*. 2005;116(5):1183–1191
 74. Sargent JD. Smoking in movies: impact on adolescent smoking. *Adolesc Med Clin*. 2005;16(2):345–370
 75. Thompson EM, Gunther AC. Cigarettes and cinema: does parental restriction of R-rated movie viewing reduce adolescent smoking susceptibility? *J Adolesc Health*. 2007;40(2):181.e1–181.e6
 76. Dalton MA, Beach ML, Adachi-Mejia AM, et al. Early exposure to movie smoking predicts established smoking by older teens and young adults. *Pediatrics*. 2009;123(4). Available at: www.pediatrics.org/cgi/content/full/123/4/e551
 77. Tanski SE, Stoolmiller M, Dal Cin S, Worth K, Gibson J, Sargent JD. Movie character smoking and adolescent smoking: who matters more, good guys or bad guys? *Pediatrics*. 2009;124(1):135–143
 78. Millett C, Glantz S et al. Assigning an 18 rating to movies with tobacco imagery is essential to reduce youth smoking. *Thorax*. 2010;65(5):377–378
 79. Titus-Ernstoff L, Dalton MA, Adachi-Mejia AM, Longacre MR, Beach ML. Longitudinal study of viewing smoking in movies and initiation of smoking by children. *Pediatrics*. 2008;121(1):15–21
 80. Dalton MA, Adachi-Mejia AM, Longacre MR et al. Parental rules and monitoring of children's movie viewing associated with children's risk for smoking and drinking. *Pediatrics*. 2006;118(5):1932–1942
 81. Jackson C, Brown JD, L'Engle KL. R-rated movies, bedroom televisions, and initiation of smoking by white and black adolescents. *Arch Pediatr Adolesc Med*. 2007;161(3):260–268
 82. Hanewinkel R, Sargent JD. Exposure to smoking in popular contemporary movies and youth smoking in Germany. *Am J Prev Med*. 2007;32(6):466–473
 83. Hanewinkel R, Sargent JD. Longitudinal study of exposure to entertainment media and alcohol use among German adolescents. *Pediatrics*. 2009;123(3):989–995
 84. Gerbner G. Drugs in television, movies, and music videos. In: Kamalipour YR, Rampal KR, eds. *Media, Sex, Violence, and Drugs in the Global Village*. Lanham, MD: Rowman & Littlefield; 2001:69–75
 85. Gruber EL, Thau HM, Hill DL, Fisher DA, Grube JW. Alcohol, tobacco and illicit substances in music videos: a content analysis of prevalence and genre. *J Adolesc Health*. 2005;37(1):81–85
 86. Greenberg BS, Rosaen SF, Worrell TR, Salmon CT, Volkman JE. A portrait of food and drink in commercial TV series. *Health Commun*. 2009;24(4):295–303
 87. Primack BA, Dalton MA, Carroll MV, Agarwal AA, Fine MJ. Content analysis of tobacco, alcohol, and other drugs in popular music. *Arch Pediatr Adolesc Med*. 2008;162(2):169–175
 88. Sargent JD, Wills TA, Stoolmiller M, Gibson J, Gibbons FX. Alcohol use in motion pictures and its relation with early-onset teen drinking. *J Stud Alcohol*. 2006;67(1):54–65
 89. Yakota F, Thompson KM. Depiction of alcohol, tobacco, and other substances in G-rated animated films. *Pediatrics*. 2001;107(6):1369–1374
 90. Roberts DF, Christenson PG. "Here's Looking at You, Kid": *Alcohol, Drugs and Tobacco in Entertainment Media*. Menlo Park, CA: Kaiser Family Foundation; 2000
 91. Mo Bahk C. Perceived realism and role attractiveness in movie portrayals of alcohol drinking. *Am J Health Behav*. 2001; 25(5):433–446
 92. Robinson TN, Chen HL, Killen JD. Television and music video exposure and risk of adolescent alcohol use. *Pediatrics*. 1998;102(5)Available at: www.pediatrics.org/cgi/content/full/102/5/e54
 93. National Center on Addiction and Substance Abuse. *National Survey of American Attitudes on Substance Abuse IX: Teens and Parents*. New York, NY: National Center on Addiction and Substance Abuse; 2005
 94. Dalton MA, Bernhardt AM, Gibson JJ, et al. Use of cigarettes and alcohol by preschoolers while role-playing as adults. *Arch Pediatr Adolesc Med*. 2005;159(9):854–859
 95. Primack BA, Kraemer KL, Fine MJ, Dalton MA. Media exposure and marijuana and alcohol use among adolescents. *Subst Use Misuse*. 2009;44(5):722–739
 96. Wills TA, Sargent JD, Gibbons FX, Gerrard M, Stoolmiller M. Movie exposure to alcohol cues and adolescent alcohol problems: a longitudinal analysis in a national sample. *Psychol Addict Behav*. 2009;23(1):23–25
 97. Hanewinkel R, Tanski SE, Sargent JD. Exposure to alcohol use in motion pictures and teen drinking in Germany. *Int J Epidemiol*. 2007;36(5):1068–1077
 98. Halperin S. Going to pot. *Entertainment Weekly*. April 18, 2008:38–41
 99. Primack B, Douglas E, Kraemer K. Exposure to cannabis in popular music and cannabis use among adolescents. *Addiction*. 2010;105(3):515–523
 100. Montgomery KC, Chester J. Interactive food and beverage marketing: targeting adolescents in the digital age. *J Adolesc Health*. 2009;45(3 suppl):S18–S29
 101. Janssen BP, Klein JD, Salazar LF, Daluga NA, DiClemente RJ. Exposure to tobacco on the Internet: content analysis of adolescents' Internet use. *Pediatrics*. 2009;124(2). Available at: www.pediatrics.org/cgi/content/full/124/2/e180
 102. Leinwand D. Teens not rushing online to buy wine, survey shows. *USA Today*. August 9, 2006. Available at: www.usatoday.com/tech/news/2006-08-09-survey-online-alcohol_x.htm. Accessed August 12, 2009
 103. Center on Alcohol Marketing and Youth: *Clicking With Kids: Alcohol Marketing and Youth on the Internet*. Washington, DC: Center on Alcohol Marketing and Youth; 2004
 104. Office of National Drug Control Policy. *Teen Online Exposure: A Snapshot of Data*. Washington, DC: Office of National Drug Control Policy; 2008. Available at: www.theantidrug.com/resources/pdfs/Teens-Tech-Factsheet.pdf. Accessed August 12, 2009
 105. Moreno MA, Briner LR, Williams A, Walker L, Christakis DA. Real use or "real cool": adolescents speak out about displayed alcohol references on social networking websites. *J Adolesc Health*. 2009;45(4):420–422
 106. Moreno MA, Parks MR, Zimmerman FJ, Brito TE, Christakis DA. Display of health risk behaviors on MySpace by adolescents. *Arch Pediatr Adolesc Med*. 2009;163(1):27–34
 107. Strasburger VC. "Clueless": why do pediatricians underestimate the influence of the media on children and adolescents? *Pediatrics*. 2006;117(4):1427–1431
 108. Gruber EL, Wang PH, Christensen JS, Grube JW, Fisher DA. Private television viewing, parental supervision, and sexual and substance use risk behaviors in adolescents. *J Adolesc Health*. 2005;36(2):107
 109. Longacre MR, Adachi-Mejia AM, Titus-

- Ernstoff L, Gibson JJ, Beach ML, Dalton MA. Parental attitudes about cigarette smoking and alcohol use in the Motion Picture Association of America rating system. *Arch Pediatr Adolesc Med*. 2009;163(3):218–224
110. Botvin GJ, Griffin KW. Models of prevention: school-based programs. In: Lowinson JH, Ruiz P, Millman RB, et al, eds. *Substance Abuse: A Comprehensive Textbook*. 4th ed. Philadelphia, PA: Lippincott, Williams & Wilkins; 2005:1211–1229
111. Primack BA, Fine D, Yang CK, Wickett D, Zickmund S. Adolescents' impressions of antismoking media literacy education: qualitative results from a randomized controlled trial. *Health Educ Res*. 2009;24(4):608–621
112. McCannon B. Media literacy/media education: solution to Big Media? A review of the literature. In: Strasburger VC, Wilson BJ, Jordan A, eds. *Children, Adolescents, and the Media*. 2nd ed. Thousand Oaks, CA: Sage; 2009:519–569
113. Kupersmidt JB, Scull TM, Austin EW. Media literacy education for elementary school substance use prevention: study of Media Detective. *Pediatrics*. 2010;126(3):525–531
114. Bayer R, Kelly M. Tobacco control and free speech: an American dilemma. *N Engl J Med*. 2010;362(4):281–283
115. Wilson D. Congress passes measure on tobacco regulation. *New York Times*. June 13, 2009. Available at: www.nytimes.com/2009/06/13/business/13tobacco.html. Accessed August 12, 2009
116. Wilson D. *Tobacco regulation is expected to face a free-speech challenge*. *New York Times*. June 16, 2009:B1
117. Children NOW. Interactive Advertising and Children: Issues and Implications. Oakland, CA: Children NOW; 2005
118. Chapman S. What should be done about smoking in movies? *Tob Control*. 2008;17(6):363–367
119. American Academy of Pediatrics, Committee on Environmental Health, Committee on Substance Abuse, Committee on Adolescence, Committee on Native American Health. Tobacco use: a pediatric disease [published correction appears in *Pediatrics*. 2010;125(4):861]. *Pediatrics*. 2009;124(5):1474–1487
120. Tanski SE, Stoolmiller M, Cal Cin S, Worth K, Gibson J, Sargent JD. Movie character smoking and adolescent smoking: who matters more, good guys or bad guys? *Pediatrics*. 2009;124(1):135–143
121. ABC News. Up in smoke: Disney bans cigarettes. July 26, 2007. Available at: <http://abcnews.go.com/print?id=3416434>. Accessed August 12, 2009
122. Motion Picture Association of America. Film rating board to consider smoking as a factor [press release]. May 10, 2007. Los Angeles, CA: Motion Picture Association of America
123. Pupillo J. Hot air: AAP experts skeptical of movie industry's commitment to curb smoke-filled images in youth-rated films or add R-ratings. *AAP News*. 2007;28:16–17
124. Reis EC, Duggan AK, Adger H, DeAngelis C. The impact of anti-drug advertising on youth substance abuse [abstract]. *Arch Pediatr Adolesc Med*. 1992;146:519
125. Nelson DE. State tobacco counteradvertising and adolescents. *Arch Pediatr Adolesc Med*. 2005;159(7):685–687
126. Pechmann C, Reiling ET. Antismoking advertisements for youth: an independent evaluation of health, counter-industry, and industry approaches. *Am J Public Health*. 2006;96(5):906–913
127. Thrasher JF, Niederdeppe JD, Jackson C, Farrelly MC. Using anti-tobacco industry messages to prevent smoking among high-risk adolescents. *Health Educ Res*. 2006;21(3):325–337
128. Centers for Disease Control and Prevention. Estimated exposure of adolescents to state-funded anti-tobacco television advertisements: 37 states and the District of Columbia, 1999–2003. *MMWR Morb Mortal Wkly Rep*. 2005;54(42):1077–1080
129. Nixon CL, Mansfield PM, Thoms P. Effectiveness of antismoking public service announcements on children's intent to smoke. *Psychol Addict Behav*. 2008;22(4):496–503
130. Hornik R, Jacobsohn L, Orwin R, Piesse AN, Kalton G. Effects of the National Youth Anti-Drug Media Campaign on youths. *Am J Public Health*. 2008;98(12):2229–2236
131. Edwards C, Oakes W, Bull D. Out of the smokescreen II: will an advertisement targeting the tobacco industry affect young people's perception of smoking in movies and their intention to smoke? *Tob Control*. 2007;16(3):177–181
132. Serjeant J. Some U.S. DVDs to carry anti-smoking ads. *Reuters*. July 11, 2008. Available at: www.reuters.com/article/entertainmentNews/idUSN1134673320080711. Accessed August 12, 2009