

Smoking in Movies: Impact on Adolescent Smoking

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“It’s the movies that have really been running things in America ever since they were invented. They show you what to do, how to do it, when to do it, how to feel about it, and how to look how you feel about it.”

Andy Warhol [1a]

Concern about the impact of motion pictures is as old as movies themselves. The first motion picture camera was invented in 1895. Within 11 years, New York City passed a local movie censorship law, and by 1921, the governor of New York State signed a sweeping state censorship law as “the only way to remedy what everyone concedes has grown to be a very great evil.” By 1934, the possibility of federal censorship prompted movie distributors to adopt and enforce the Hays Production Code, voluntary movie production guidelines that restricted how sex and violence could be portrayed. The Hays Production Code was abolished in 1968 and was replaced with the modern rating system, which continues to rate movies on sex, language, and violence.

Despite widespread concern, there is little evidence to support a direct effect of movies on the behaviors for which movies are rated. Much of the evidence that links seeing media violence to aggression focuses on television and video game violence [1–6]. The same can be said about the few published studies on the relation between media exposure and human sexual behavior—the focus mainly has been on television [7,8]. In contrast, an extensive literature is developing on the relation between seeing movie depictions of smoking and the adoption of smoking, a behavioral outcome that has major health implications

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and which does not figure into the movie ratings system. This article summarizes what is known about smoking in motion pictures and its relationship with adolescent smoking. Before discussing the status of current research, there is a general discussion of adolescent smoking and the theoretic basis that underlies the notion that exposure to media smoking might affect adolescent smoking.

Adolescent smoking

The onset of tobacco use typically occurs during childhood or adolescence. Tobacco use is ascertained in populations of teens by self-report, and if assured anonymity, adolescents report tobacco use accurately and reliably [9]. The National Youth Tobacco Survey (NYTS) tracks tobacco use among nationally representative cross-sectional samples of U.S. adolescents. In 2002, the NYTS was administered to 26,149 students in 246 school across the United States. Table 1 shows the prevalence of ever smoking, current (past 30 days), and daily smoking among U.S. middle school and high school students. The prevalence of smoking depends on how the question is asked, and in what context the data are acquired [10]. Generally, researchers who study adolescents in middle school use ever smoked or current smoking as the outcome, whereas researchers who study high school students use current or daily smoking. Smoking rates for ever tried smoking do not vary much by race and gender, but prevalence for more advanced stages of smoking is substantially lower for African American adolescents.

Attitudes toward smoking predict taking up smoking in the future. Attitudes that predict smoking include positive expectancies [11] and intentions to smoke [12–15]. Intent to smoke has been combined with resistance to peer offers to smoke to assess “susceptibility to smoking” among adolescent never smokers. Adolescents are susceptible if they are unable to rule out smoking definitely in the coming year or if a friend offered a cigarette. Susceptible adolescents are twice as likely to take up smoking in the future [16,17].

Heuristic model: role of media influence in adolescent smoking initiation

Heuristic models are used to summarize proposed relationships between risk factors for smoking, psychologic mediators, and smoking behavior. Sargent

Table 1
Prevalence of smoking by smoking outcome and school type, 2002 National Youth Tobacco Survey

Smoking outcome	School	
	Middle	High
Ever smoked	0.33	0.57
Current (30D) smoking	0.10	0.23
Daily smoking	0.06	0.17

et al [18] proposed a heuristic model that integrates what is known about various risk factors that predict smoking initiation, including temperament; cognitive beliefs; parental involvement; and social learning factors, such as peer influence. The model considers multiple reciprocal interactions among these risk factors that lead to adolescent smoking (Fig. 1). The model illustrates how each of these risk factors is related to media use as well as attitudes about smoking.

Although some recent work suggests that nicotine dependence might begin early in the course of the smoking uptake process [19–21], the prevailing opinion is that social influences are the primary motivating force behind adolescent experimental smoking [22]. Longitudinal studies suggest that adolescent smoking is an opportunistic behavior and teenagers are capable of smoking intensively at a party one night and not smoking again for an extended period. This intermittent smoking pattern is different from the adult pattern of smoking. In addition, the most established predictors of initiation and maintenance of smoking during adolescence are social factors [23,24], including friend smoking [25], community smoking [26], exposure to tobacco advertising [27–35], family smoking [23,36–38], and parenting factors [39–43]. These influences are integrated best into a social-cognitive model as described by Bandura [44], in which adolescents are influenced by the actions and attitudes that are expressed by role models who they see in their immediate environment.

Drawing on social learning theory, the model (see Fig. 1) starts with the assumption that children acquire behavioral scripts through observation of the behaviors of others in their social environment. Children imitate the behavior of their parents, peers, and other role models, especially those with whom they identify and admire. Media has been identified as an important social learning factor that influences cognitive beliefs and expectancies [2–6,45–52]. Media exposure has several possible influences on future tobacco use. It can lead directly to norms and beliefs that support tobacco use, such as false consensus beliefs regarding smoking norms, or it can promote it indirectly through its influence on peer affiliation. For some adolescents, watching movies is a social activity—adolescents go to the theater in groups and watch videos in the company of their friends. Thus, the development of preferences for movie stars or for specific types of entertainment does not occur in a vacuum, but is shaped by what is perceived as “cool” for the group with whom an adolescent identifies. Members of the social reference group are active coconspirators in their adoration for specific movie stars, rock stars, or even specific movies. Because of the strength of peer affiliation [53], peer media preferences may affect exposure to smoking in media.

Important measurable aspects of the social and media environment and responses to these factors to be considered in entertainment research are shown (see Fig. 1). Just as peer media preference may influence exposure to entertainment media smoking, so may parental factors. Parents determine media exposure because they create and manage the home media environment [36,54–56]. They create the home media environment through their purchasing behavior, which determines how many TVs are in the home, how big they are, what

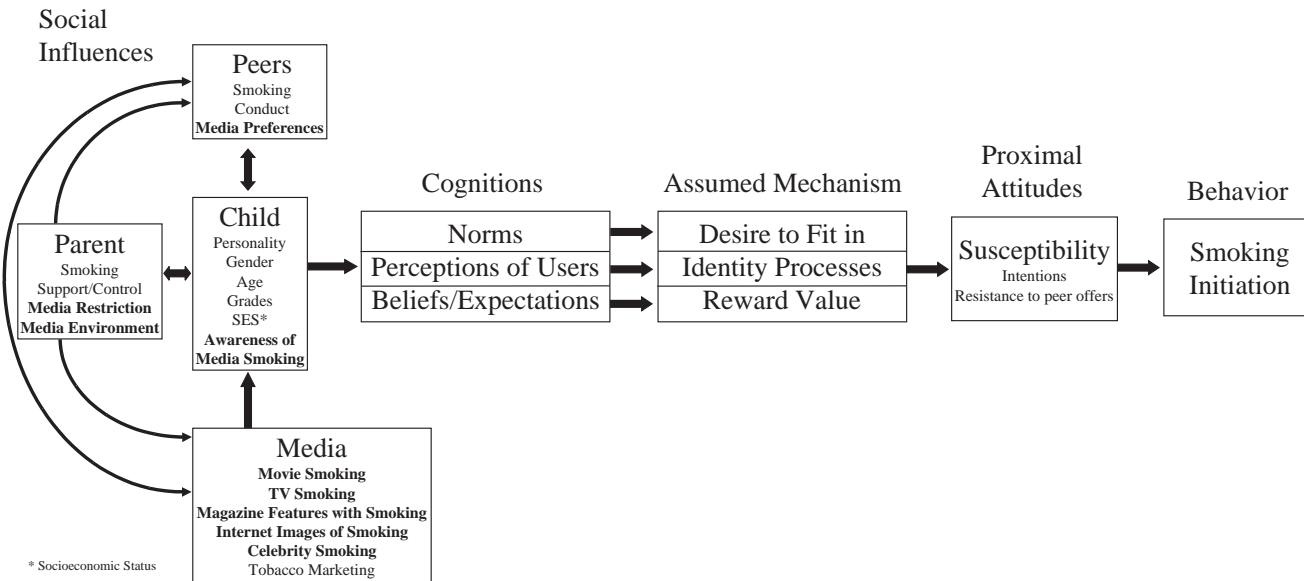


Fig. 1. Heuristic model for the effect of media exposure on smoking initiation.

channels they receive, what other entertainment hardware is connected to the television, what magazines are subscribed to, whether there is internet access, and the speed of internet access [57]. Parents determine the distribution pattern of home entertainment hardware (eg., whether their children have TVs in their bedrooms). This decision affects the quantity of media use and whether the media is viewed in the context of family or in isolation [57]. Parents also may affect exposure by setting rules about home media usage and by blocking specific media avenues or menus.

Central to the heuristic model is the idea that media and peers influence adolescent self-concept. The model indicates that in the search for identity, adolescents adopt behaviors that are consistent with the image that they wish to have for themselves and convey to others—images of persons that are acquired from their social and media environment [58,59]. This process leads them to select specific clothing and hairstyles; adopt idiosyncratic speech patterns; prefer certain types of music and media; and adopt certain behaviors, such as smoking. One way to measure risk prototypes in adolescents is to ask about their favorite celebrity and examine the on- and off-stage smoking status of the celebrity [60].

Not all children who are exposed to role models who smoke try smoking; therefore, consideration needs to be given to other risk factors, such as temperament [61] to fully explain smoking initiation. Moreover, it is important to gather data on these other factors because they are confounders that must be controlled for to gauge the independent effect of the media exposure. For example, evidence has accumulated that children who are rebellious, risk-takers, and sensation-seekers are more likely to engage in substance use [62,63]. In a recent longitudinal study that compared many temperamental factors, rebelliousness and risk-taking were the only characteristics of 5th grade children that were significant predictors of smoking by 12th grade [64]. Sensation seekers also are more likely to seek out exciting forms of media presentation [65] and are more likely to associate with deviant peer groups and use alcohol, tobacco, and drugs [63]. High sensation-seeking, rebellious adolescents are also the children who have strained relationships and poor communication with their parents [66], which, in turn, promotes greater deviant peer group association and greater use of media, including movies [67]. Thus, temperament influences relations with parents, peer affiliation, and exposure to media, but also has direct effects on behavior.

What is clear from the model is that several factors must be considered when examining the role that exposure to movie smoking might play in an epidemiologic study of adolescent smoking. First, one must identify a way to measure the media exposure with accuracy and precision. Next, one must choose an outcome. Outcomes can range from ever tried smoking a cigarette (a reasonable outcome in an early adolescent sample) to daily smoking (a reasonable outcome in a late adolescent or young adult sample). Social influences would be expected to predominate in a study of smoking initiation, but not necessarily in a study of daily or monthly (current) smoking, because addiction to nicotine becomes a major driving force behind the maintenance of the behavior for

more intensive smokers. Finally, one must gather information on a host of other factors that could confound the relation between the media exposure and adolescent smoking.

Smoking in movies

There have been many studies of movie smoking using content analysis, a research method in which coders systematically count and characterize media inputs. Content analyses of top box office movies that span the past decade indicate that most (87%) movies portrayed tobacco use; however, tobacco use only accounted for a small proportion of screen time [68]. In 75% of movies, tobacco exposure accounted for less than 4% of total screen time. Cigarettes are the predominant form of tobacco used, followed by cigars, with little use of smokeless tobacco. Tobacco use typically increases with the “adulthood” of the censorship rating. For example, whereas PG-13 movies contain an average of four smoking occurrences, R-rated movies contain an average of eight [68]. Tobacco use also varies by movie genre. It is more common in dramas than in comedies, science fiction, or child or family genres. Nonetheless, many children’s films depict tobacco use. Content analyses of children’s animated films that were released between 1937 and 1997 indicated that more than two thirds of the films included tobacco use [69]. The amount of tobacco use in movies is not associated significantly with their box office success [68].

Examination of changes over the years in the frequency with which tobacco is depicted on screen highlights some discrepancies between movie portrayal of smoking and the social reality of smoking. In Dalton et al’s [68] content analysis of the top 25 box office hits from 1988 to 1997, there were 1400 major characters, among whom the rate of tobacco use was 0.25; this was not discordant with the prevalence of smoking among U.S. adults during that period. As shown in Fig. 2, there was no upward or downward trend in the average number of smoking depictions in movies during this period, despite declining smoking prevalence in the U.S. population. In a sample of top box office U.S. films from 1950 to 2002, the number of smoking incidents per 5-minute interval of film declined from 10.7 per hour in 1950 to a minimum of 4.9 in 1980–1982 but increased to 10.9 in 2002 [70,71]. Another study found that after an initial decrease in the frequency of depicting tobacco in the 1970s and mid-1980s, the rate of depiction increased [72]. The depiction of smoking in children’s animated films did not decrease between 1937 and 1997 [69]. Thus, the argument that on-screen smoking reflects social realism does not hold up in terms of trends for the rate of smoking depiction in movies in recent years, where movie content seems to be out of step with declining smoking rates in the U.S. population. These results raise questions about the role of films in amplifying the notion of smoking being widespread. It also is noteworthy that several studies observed a pattern of increased smoking depiction in the late 1980s and early 1990s; this

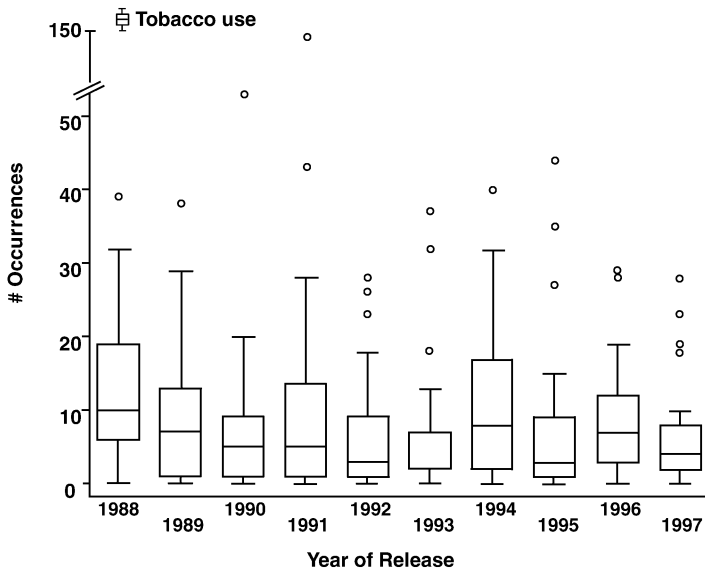


Fig. 2. Movie tobacco use by year of release. The movie sample includes the top 25 box office hits for each year from 1988 to 1997. The content analysis counted depictions of smoking. The center line in the boxes represents median and the outer bounds of the boxes represents the interquartile range. (From Dalton MA, Tickle JJ, Sargent JD, et al. The incidence and context of tobacco use in popular movies from 1988 to 1997. *Prev Med* 2002;34(5):519; with permission.)

period follows the period for which there is documented evidence of paid tobacco product placement deals occurring in relation to film [73].

Studies of brand appearances in movies indicate that the practice occurs frequently, despite a voluntary agreement on the part of the tobacco industry to stop paying for their brands to appear (a voluntary ban on paid product placement was incorporated into the Cigarette Advertising and Promotion Code around 1991). Fig. 3 shows an example of a cigarette brand appearance that we have defined as “actor endorsement”, in which the lead actor “endorses” the brand (Kool) by using it himself and by offering it to the lead actress. In a 10-year sample of top box office films from 1988 to 1997, the most highly advertised U.S. cigarette brands accounted for the most brand appearances in the movies; there was no decline after 1991 [74]. Most (85%) of the films contained some tobacco use, with specific brand appearances in 28% of the total film sample. Brand appearances were as common in films that were suitable for adolescent audiences as they were in films for adult audiences. Although 27 tobacco brands were depicted in the movies that were sampled, four cigarette brands accounted for 80% of brand appearances: Marlboro (40%), Winston (17%), Lucky Strike (12%), and Camel (11%). Other content analyses of recent movies that were sampled from the late 1990s found that brand appearances for Marlboro occurred five to six times more frequently than for other tobacco brands [75]. The correspondence between the advertising agenda of the tobacco industry and the



Fig. 3. Cigarette brand appearance from the movie “Great Expectations” in which Ethan Hawke offers Gwyneth Paltrow Kools.

actions of the U.S. film industry—when producing internationally-distributed films—suggests that film is serving as a global advertising medium for tobacco, because approximately half of the box office receipts for these films come from overseas [74].

Measuring influence of movie smoking

Movie smoking influence has been measured in two ways. The first assessment involved ascertaining favorite movie star, which taps into the process of identity formation. Identity formation is one process by which exposure to movie smoking might exert influence on an adolescent’s perceptions of smoking. Adolescents form their own identities by adopting parts of the identities of people they admire. In theory, as adolescents watch movies, they develop preferences for movie stars. After star preference is determined, adolescents seek out movies in which the star plays a role (this is the basis for the well-known effect that a leading movie star can have on box office success). One strategy of assessing movie influence, therefore, is to determine star preference for a sample of adolescents and to ask whether the screen smoking status of the star has a relation with the smoking status of the adolescent. One problem with the favorite star measure is that adolescents tend to choose a wide variety of stars; it is not feasible to ascertain smoking status on all chosen favorite stars which leads to loss of sample.

The second approach to measuring exposure to movie smoking is a two-stage method that directly estimates exposure to movie smoking. The first stage involves content analysis to determine the amount of smoking contained in the movie sample of interest. Because adolescents cannot be surveyed on all movies, the second stage of this method requires special survey techniques that present the adolescent with a movie title list (the investigators included 50 titles) that has

been selected randomly from the larger content-analyzed sample. This direct assessment method has the advantage that exposure to movie smoking can be estimated directly and in an unbiased fashion for all adolescents in the survey sample.

Linking exposure to movie smoking with adolescent smoking: favorite star

An association between star smoking and adolescent smoking was first reported by Distefan and colleagues [76] using the California Tobacco Survey. Adolescents were asked to name their two favorite male and female actors. The researchers examined the on- and off-screen smoking behavior for the top 10 favorite male and female actors and determined if there was an association between favorite star smoking status and smoking status of the adolescent. Favorite star varied by gender (top two actors for girls were Brad Pitt and Tom Cruise; top two actors for boys were Arnold Schwarzenegger and Jim Carrey). Favorite stars differed significantly among adolescent ever and never smokers; most favorite stars of ever smokers had smoked on- and off-screen compared with favorite stars of never smokers. In a multivariate analysis, adolescent never smokers who preferred the favorite stars of adolescent ever smokers were significantly more likely to be susceptible to smoking, even after adjustment for known predictors of adolescent smoking and demographic variables; this effect was only slightly weaker than that of exposure to friends and family who smoke.

This study was followed by another study in which adolescents were asked to name their favorite movie star [60]. The study examined smoking status of favorite star for all stars who were chosen by five or more adolescents. Again, smoking status of favorite star was associated with the smoking status of the adolescent. For favorite stars who smoked in two previous films, the adjusted odds of smoking was 1.5; for stars who smoked in three or more previous films, the adjusted odds of smoking was 3.1. Smoking status of the star also was linked strongly with the susceptibility to smoke among the never smokers.

Distefan et al [77] published a longitudinal follow-up of the initial sample of California adolescents. Adolescent never smokers who nominated a star who smoked on screen were 1.4 times more likely to take up smoking over the 4-year follow-up period, even after controlling for other baseline influences. The effect on future smoking was seen only for girls (adjusted odds ratio = 1.86); in boys, future smoking was determined more strongly by participation in tobacco promotional campaigns. This study represents one of two longitudinal studies that linked exposure to smoking in movies and adolescent smoking.

Sargent et al [78] used the direct method of assessing exposure to movie smoking to estimate lifetime exposure to movie smoking from a sample of 601 popular contemporary movies among 4919 northern New England adolescents. The subjects had seen an average of 30% of the movie sample, from which they were exposed to an average of 1160 movie smoking depictions (interquartile range 640–1970) [79]. Fig. 4 shows a smoothed curve for the dose-

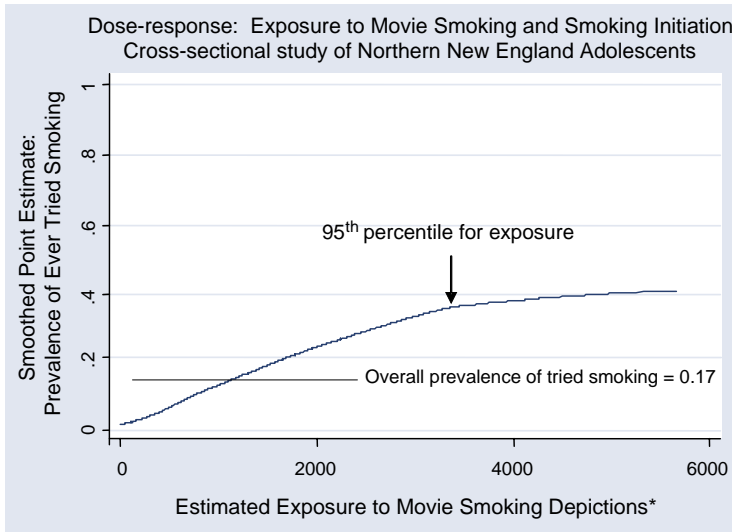


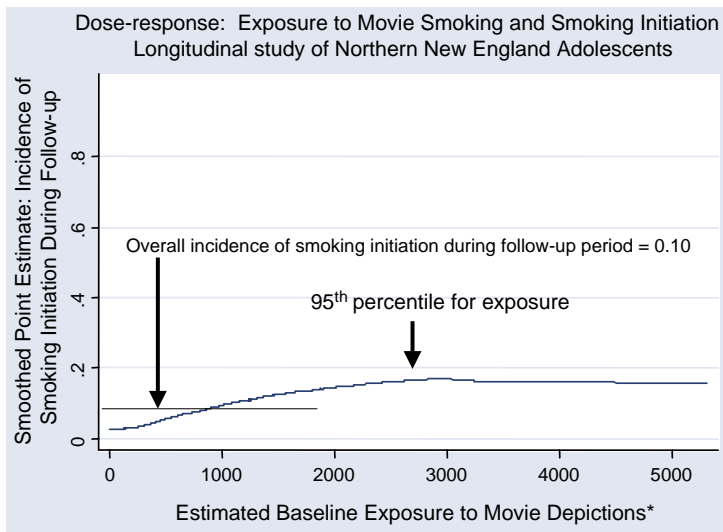
Fig. 4. Smoothed curve showing the dose-response between exposure to movie smoking and adolescent smoking for a cross-sectional study of northern New England adolescents.

response; there was a direct linear relation between higher exposure to movie smoking and higher rate of smoking through most of the exposure range, with the dose-response flattening out past the 95th percentile of exposure. There was almost no smoking among adolescents with little exposure to movies, and smoking peaked at almost 40% above the 95th percentile. The relation between seeing movie smoking and adolescent smoking remained after controlling for a broad range of confounders [78]. The measure of association was the adjusted odds ratio, with the adjusted odds of trying smoking being in the range of 1.7 to 2.7 for higher quartiles of exposure compared with quartile 1.

The relation between exposure to movie smoking and attitudes toward smoking was also assessed for the northern New England sample [18]. Exposure to movie smoking was associated with susceptibility to smoking, an indexed measure of positive expectations for smoking, and normative beliefs about adult smoking. The measure of association was the adjusted odds ratio; ranges (for the three higher quartiles) for the effect size for the association with exposure to movie smoking was 1.2 to 1.7 for susceptibility to smoking, 1.2 to 1.4 for the endorsement of adult smoking as normative, and 1.2 to 1.4 for the endorsement of positive smoking expectations. Consistent with content analysis, which showed that adolescent movie characters are depicted rarely as smokers in movies [68], exposure to movie smoking was not associated with normative beliefs about peer smoking. This finding was consistent with the predominantly adult-nature of smoking depictions in movies. This study suggests that exposure to movie smoking shapes attitudes toward smoking before the initiation of the behavior.

Initiation of smoking also was determined for never smokers in the study of northern New England adolescents in which exposure to movie smoking was estimated directly [80]. A smoothed curve is shown for the dose-response (see Fig. 5); as shown in the cross-sectional sample, there is a direct linear relation between higher exposure to movie smoking and higher rate of smoking through most of the exposure range. The dose-response flattens out past the 95th percentile of exposure. Smoking during follow-up was almost nil for adolescents with minimal exposure to movie smoking at baseline and approached 20% for adolescents in the highest exposure range. The effect persisted when controlling for a large set of covariates, including other social influences, advertising influences, personality characteristics (eg, rebelliousness), and parenting style. The effect size, measured as adjusted relative risk with baseline movie exposure categorized into quartiles, ranged from 2.0 to 2.7. This study provides the strongest epidemiologic evidence of a link between exposure to movie smoking and adolescent smoking. It is notable that the estimates of the effect of seeing movie smoking on smoking initiation in both longitudinal studies were almost identical to estimates that were obtained for the cross-sectional samples. This suggests that continued exposure to movie smoking and its effect on adolescent smoking persists over time.

Several experimental studies have been published in which the investigators attempted to control exposure to movie smoking and analyze short-term effects on attitudes [81–83]. Of these, the Pechmann and Shih [81] study is notable in



* From 601 popular contemporary motion pictures.

Fig. 5. Smoothed curve showing the dose-response between exposure to movie smoking and adolescent smoking incidence for a longitudinal study of northern New England adolescents who were never smokers at baseline.

that it studied attitudes among adolescents and used a movie that had been edited to remove smoking (without greatly altering content) as a control exposure. The investigators found that viewing movie scenes that depicted smoking evoked higher levels of positive arousal than viewing similar scenes without smoking. Despite the effects of smoking on viewers' emotional arousal, Pechmann and Shih found that teenagers' ratings of a movie's action or storyline or their willingness to recommend the movie to friends were no different for the edited version of the movie that excluded footage of smoking. This finding is of relevance to filmmakers; it suggests that excluding smoking from films should not detract from their overall appeal. Pechmann and Shih also found that adolescents who viewed the movie with smoking were more likely to intend to smoke in the future. Also, the showing of an antismoking advertisement before viewing a movie that depicted smoking blunted the effect of the smoking on attitudes. This finding implies that rolling antismoking trailers before movies with smoking could modify the effect of prosmoking movie depictions on smoking behavior.

Parenting, movie smoking exposure, and adolescent smoking

One of the biggest concerns that was expressed by pediatric audiences to the research noted above involves the confounding influence of parenting style. Pediatricians observe the impact of parenting practices on children and adolescents as they follow them over time. For clinicians, it is difficult to believe that higher exposure to movie smoking is not somehow entangled inextricably with how parents raise their children. Do children who are exposed highly to media have neglectful parents?

The population-based studies by Sargent et al [18,78] and Dalton et al [80] controlled for a general measure of parenting style by using the authoritative parenting construct [84–86]. Authoritative parenting measures assess two domains: parental ability to respond and empathize (termed responsiveness), and parental ability to set limits and monitor (termed demandingness). A self-report measure for young children (with respect to parenting by their mothers) with good validity was developed by Jackson et al [41]. In one article, Sargent and colleagues [79] showed that parenting style was not linked strongly with exposure to movie smoking. In other articles, Sargent et al [18,79] and Dalton and colleagues [81] showed that the association between exposure to movie smoking and smoking initiation remained, even after controlling for parenting style.

Table 2 and Fig. 6, derived from data on the sample of 4910 northern New England adolescents for whom authoritative parenting style categories were determined and whose exposure to movie smoking has been described [79], illustrate this point. Using response indexes for responsiveness and demandingness, children's mothers were classified into the following categories: authoritative, authoritarian, indulgent, and neglectful. The prevalence of ever tried

Table 2
Parenting style categories and prevalence of smoking initiation

	Demandingness	
	High	Low
Responsiveness	Category (smoking prevalence)	
High	Authoritative (0.11)	Indulgent (0.15)
Low	Authoritarian (0.20)	Neglectful (0.29)

smoking was lowest among adolescents who categorized their mothers as authoritative, highest for those who saw their mothers as neglectful, and somewhere in between for the intermediate categories of parenting style.

The relationship between exposure to higher levels of movie smoking (exposure is classified into quartiles) and smoking initiation, as stratified by parenting style, is shown (see Fig. 6). The effect of parenting style is represented by the vertical distance between each of the dose-response curves; the effect of exposure to movie smoking is represented by the slope of each line. As illustrated in Fig. 6, both variables seem to have an impact, but even after accounting for parenting style, the relationship between exposure to movie smoking and adolescent smoking is strong—so strong that children with authoritative mothers in (movie smoking exposure) quartile 4 smoke at higher rates than children with neglectful mothers in quartile 1.

Another area of parenting that is associated strongly with smoking has been identified; it involves parenting practices that are directed at media restriction. In surveys, adolescents were asked the following question, “How often do your parents allow you to watch movies that are rated ‘R’”? (never, once in a while, sometimes, all the time). This single-item query was associated strongly with exposure to movie smoking, independent of parenting style [79],

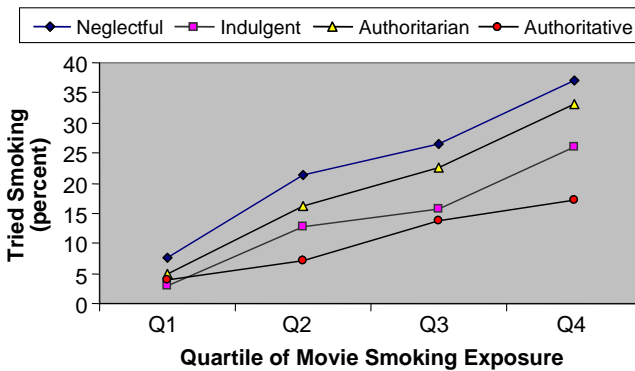


Fig. 6. Relationship between higher exposure to movie smoking and smoking prevalence, stratified by parenting style. Parenting style was determined based on how adolescents rated their mothers on responsiveness and demandingness. Authoritative = + responsive, + demanding; indulgent = + responsive, - demanding; authoritarian = - responsive, + demanding; neglectful = - responsive, - demanding, where + = upper tercile and - = lower tercile.

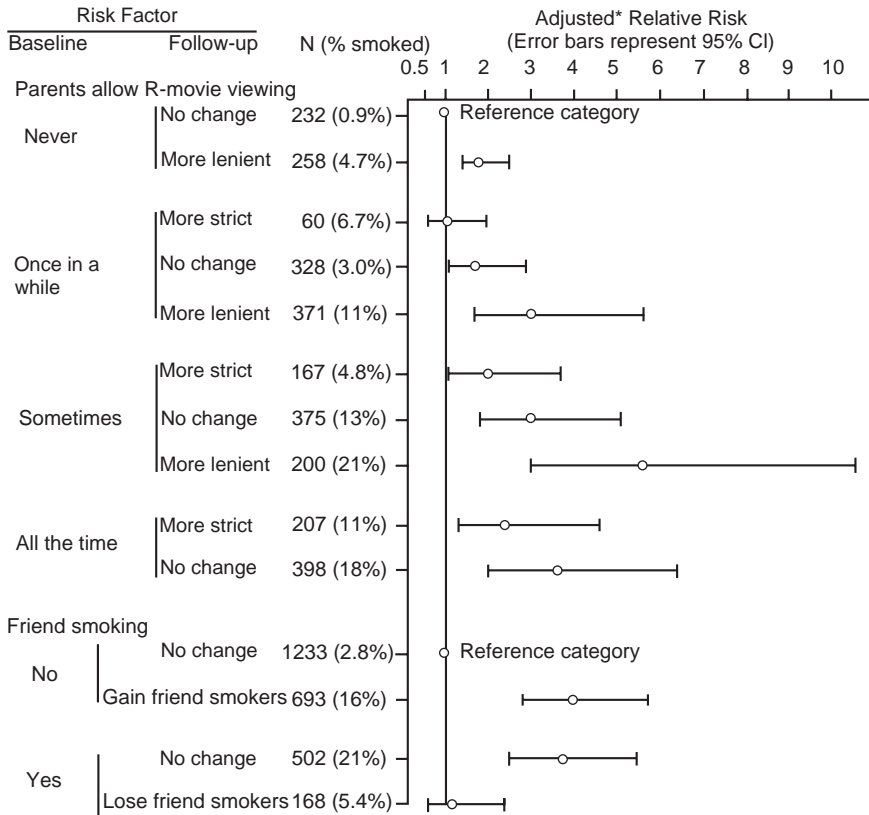


Fig. 7. Effect of changes in parental R-movie restrictions (and friend smoking) on trying smoking. Adjusted for age, sex, parent education, school, friend smoking, sibling smoking, parent smoking, receptivity to tobacco promotions, school performance, sensation seeking, rebelliousness, self esteem, maternal support, maternal control, and parental disapproval of smoking. (Courtesy of the American Academy of Pediatrics, Elk Grove Village, IL.)

and was associated strongly with adolescent smoking and adolescent drinking [87]. Moreover, among baseline never smokers, this measure predicted smoking in the future (Fig. 7) [88]. The prospective study followed adolescents through the middle school years and showed that some parents maintain or even tighten restriction on viewing R-rated movies during this period. Tightening of restriction is associated with lower rates of smoking initiation, and loosening of restriction is associated with higher rates of smoking initiation (see Fig. 7).

Policy interventions: SmokeFreeMovies

SmokeFreeMovies is a public health campaign that is headed by Stanton Glantz and run out of the University of California at San Francisco (<http://>

smokefreemovies.ucsf.edu). The campaign aims to reduce the impact of smoking in movies on teens through four specific voluntary movie industry policy changes:

- Rate new smoking movies R. Any film that shows or implies tobacco should be rated R. The only exceptions should be when the presentation of tobacco clearly and unambiguously reflects the dangers and consequences of tobacco use or is necessary to represent smoking of a real historical figure.
- Certify no pay-offs. The producers should post a certificate in the credits at the end of the movie declaring that nobody on the production received anything of value (cash money, free cigarettes or other gifts, free publicity, interest-free loans, or anything else) from anyone in exchange for using or displaying tobacco.
- Require strong antismoking advertisements. Studios and theaters should require a genuinely strong antismoking advertisement (not one produced by a tobacco company) to run before any film with any tobacco presence, regardless of its Motion Picture Association of America (MPAA) rating.
- Stop identifying tobacco brands. There should be no tobacco brand identification nor the presence of tobacco brand imagery (eg, billboards) in the background of any movie scene.

The SmokeFreeMovies campaign is based on a realistic appraisal of industry behavior that is gained from years of experience with the tobacco industry. It takes as a given that industries will be reluctant to change the status quo unless they perceive massive public pressure that could undermine their public image, or unless the change would impact profits positively. The goal of the campaign is to create a groundswell of support for the policy aims within the public health community and, eventually, among public policy makers to bring pressure to bear on the industry. As of 2004, the campaign had gained the endorsement of many mainstream health organizations, including the World Health Organization, the American Medical Association, the American Academy of Pediatrics, and the American Heart Association.

The SmokeFreeMovies media campaign began by rolling out a print advertising campaign in March 2001 that was aimed at members of the movie industry. The advertising campaign is designed to raise awareness about the effect of smoking in movies on adolescent smoking and to place the responsibility for change on the studio executives, theater owners, and actors. In addition, the advertising campaign questions the motives of the movie industry by suggesting there still may be financial ties to the tobacco industry; it also suggests that government oversight may be necessary to solve the problem. Since its inception in 2000, SmokeFreeMovies has run a series of more than 20 hard-hitting advertisements (see Fig. 8). The advertisements have stirred controversy inside and outside of the film industry.

Along with the advertising campaign, SmokeFreeMovies has organized and maintains a network of public health activists at state and local levels.

[ONE IN A SERIES]

The evidence is in. Global and U.S. medical authorities agree. *It's time for Hollywood to take smoking in movies dead seriously.*

THE WORLD HEALTH ORGANIZATION

"Smoking in the movies is a major problem worldwide because it represents such a powerful promotional force...it not only encourages children to begin smoking but helps reinforce tobacco industry marketing images...The American motion picture industry plays a crucial role in creating this problem because of the worldwide reach of the movies it makes and its role as exemplar for other filmmakers."



American Medical Association

Physicians dedicated to the health of America

"We agree that the use of smoking in movies is often gratuitous, serving no purpose but to glamorize and inappropriately reinforce smoking as a desirable behavior. This is particularly problematic as it applies to youth, since smoking in movies has been shown in several studies to be a risk factor for initiation of smoking by adolescents...We also support your four policy recommendations to reduce tobacco use in movies."



Through corruption or stupidity, Hollywood movies have become one of Big Tobacco's last major channels to young people in the U.S. and overseas.

The tobacco industry promised to halt cash payoffs to Hollywood in 1989. Yet smoking on screen has actually increased over the past decade. And, despite the usual denials, it is frequently indistinguishable from paid product placement.

Hollywood's political lobby, the MPPA, flatly refuses to give parents warning that movies or videos promote tobacco addiction, as scientific studies show they do.

Censorship is not the answer. If film directors want to shill for multibillion dollar tobacco corporations for free, that's their business. But tobacco is a business, too, taking more lives in the U.S. than AIDS, violence and illegal drugs combined.

Enough. The World Health Organization, American Medical Association and others—including the L.A. County Department of Health Services and U.S. Public Interest Research Group—urge the film industry to implement these policies now:

1] CERTIFY NO PAYOFFS. Producers should post a certificate in the closing credits declaring that no one on the production received anything of value in exchange for using or displaying tobacco products.

2] REQUIRE STRONG ANTI-SMOKING ADS. Theaters and videos should run effective counter-tobacco advertising before films with any tobacco presence, regardless of the film's rating.

3] STOP IDENTIFYING TOBACCO BRANDS. No tobacco brand identification

in movies; no brand images or ads in action sequences or scene backgrounds.

4] RATE NEW SMOKING MOVIES "R." The Rating Board should issue an "R" rating to films that show smoking or use tobacco advertisements or brand images. Such films could be rated less severely, however, if by a special vote the Rating Board feels that the presentation of tobacco clearly and unambiguously reflects the dangers and consequences of tobacco use or accurately represents the smoking behavior of an actual historical figure, so that a lesser rating would more responsibly reflect the opinion of American parents.

Get the whole story at SmokeFreeMovies.ucsf.edu

Smoke Free Movies aims to sharply reduce the film industry's usefulness to Big Tobacco's domestic and global marketing—a leading cause of disability and premature death. This initiative by Stanton Glantz, PhD (coauthor of *The Cigarette Papers* and *Tobacco Harb*) of the UCSF School of Medicine is supported by the Robert Wood Johnson Foundation and the Richard and Rhoda Goldman Fund. To learn how you can help, visit our website or write to us: Smoke Free Movies, UCSF School of Medicine, Box 1390, San Francisco, CA 94143-1390.



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MOVIES**

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Fig. 8. Example of a SmokeFreeMovies ad that ran in the California edition of the New York Times on November 20, 2002, and in Variety Magazine on December 11, 2002. (Courtesy of S. Glantz, San Francisco, CA.)

These groups have developed awareness campaigns that are aimed at youth in New York, Texas, and Vermont, among others. Billboards now appear in New York to warn parents about the dangers of smoking in movies. As the result of a national letter-writing campaign, also led by public health activists from New York, more than 200,000 letters were sent from adolescents to prominent movie stars. The SmokeFreeMovies web site encourages other forms of activism, such as e-mail messages to movie executives; the Web site has had over 4 million hits (Stanton Glantz, personal communication, 2004).

The most controversial policy aim of SmokeFreeMovies is the R rating for smoking. This policy aim is under the control of the movie studios and theater owners, the two entities that run the MPAA rating system. The rationale behind the aim is that, from a public health standpoint, the role that movies play in the adoption of smoking by adolescents is far more serious than other behavioral depictions (eg, using foul language) that garner the R rating. In addition, science lends a fair amount of support to the policy change. The link between seeing smoking in movies and teen smoking seems to be strong and is documented in at least two longitudinal studies in separate samples of U.S. adolescents. This policy aim cannot be challenged on First Amendment grounds because it applies only to the proper labeling of movies; movie studios are free to continue to put smoking in movies and distribute them as long as they are labeled R.

The movie industry counters that the rating system was not created with public health considerations in mind. Instead, it was created with an eye on the sensibilities of parents. Parents tend to object and complain to theater owners when their children are exposed to sex and foul language but not when they are exposed to movie smoking. This counterargument is only partially true. The ratings incorporate violence, mainly in response to public health concerns, because few parents actually complain to theater owners about violence in movies. For example, following the Columbine killings (in 1999 two students at Columbine High School massacred several of their fellow students and teachers), President Clinton ordered the Federal Communications Commission to investigate the impact of entertainment violence on children [89]. The Senate conducted hearings on the poor regulation of adult entertainment. After the hearings, the movie industry agreed to delete some of the most violent scenes from soon-to-be-released films in response to public health concerns and to place further restrictions on how R-rated movies are marketed. From the perspective of the movie studios, the problem with the R rating for smoking is that it creates another category of depiction that needs to be negotiated with directors and other creative people.

The assumption behind the R rating is that the industry will strip smoking from G, PG, and PG-13 movies to retain a more general audience rating. This is a sensible argument from the business perspective, because the more general rating would be expected to increase the size of the audience and the box office success. Others counter that the R rating increases adolescent desire to see the movie; this argument is based on the "forbidden fruit" thesis. "Forbidden fruit" proponents state that adolescents would have a strong desire to see R-rated

movies because they are forbidden. The question is whether the balance between this desire and parental attempts to limit seeing these movies weighs in favor of higher or lower exposure rates for R-rated movies among young adolescents. If adolescents successfully circumvent attempts by parents and theaters to restrict their exposure to these movies, one would expect view rates to be similar to other rating categories. Therefore, the R rating for the smoking campaign would be futile and maybe even counterproductive. If view rates for R-rated movies are, in fact, lower among adolescents, then the argument could be made that rating movies with smoking R could limit adolescent exposure, despite making them “forbidden fruit.” To shed light on these possibilities, the reach of movies was determined, by MPAA rating, for a sample of young northern New England adolescents (the same sample that was discussed above in the parenting section).

The adolescents were part of an already published cross-sectional survey of 4616 students, 10 to 14 years of age who attended 15 junior high schools in New Hampshire and Vermont [78,90]. Each student was surveyed on whether he or she had seen a randomly selected subsample of 50 movies, drawn from 601 popular contemporary movies (based on year of release and box office success). Almost 50% of the movies were rated R. Because movies were selected randomly, each title appeared on an average of 470 surveys (SD 7). Therefore, it was possible to determine accurately the percentage of adolescents who had seen each title (termed “reach” in the marketing literature). Fig. 9 shows the distribution of reach for movies by MPAA rating. G-rated movies were seen by most of the adolescents, with a median reach of 67% of adolescents. As the rating goes up, reach decreases; this is especially true for the transition from PG-13 rating to R rating, where median and interquartile range for reach decrease substantially. Whereas the 75th percentile for reach in PG-13 movies was more

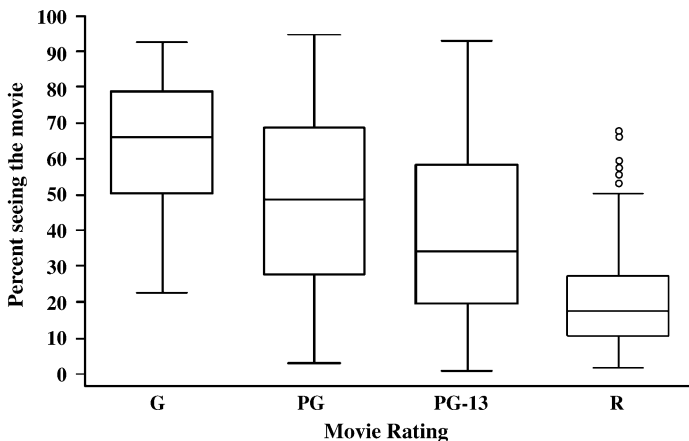


Fig. 9. Summary of the percentage of adolescents who had seen movies by Motion Picture Association of America movie rating category. The line in the middle of the box plot represents the median, with the interquartile range between the top and bottom of the box.

than 60%, the 75th percentile for R-rated movies barely exceeded 30%. These data show conclusively that movies in the R-rating category are seen by many fewer young adolescents compared with movies that are not rated R. This probably is the result of parents who restrict access and because theaters generally enforce the R-rating as part of their participation in the MPAA ratings system.

Does this mean that rating smoking “R” would have a substantial immediate impact on teen exposure to smoking in movies? Not necessarily. In the first place, SmokeFreeMovies is calling for the R rating to be applied only to new movies; most teen exposure comes from seeing older movies on video and DVD. But the prospective R rating for smoking would cut exposure to smoking depictions at the theater substantially and would have a substantial impact over time as a result of the cumulative effects of the rating change. Conversely, if the R rating for smoking caused parents to pay less attention to the ratings system, it could result in the reach of R-rated movies increasing among younger adolescents. To counter this concern, the implementation of this policy change should go hand-in-hand with an educational campaign to teach parents about the effect of movie smoking on teen behavior and a motivational effort to convince parents to take the ratings system seriously.

Reducing exposure to movie smoking in the home: Devices that restrict access

Home entertainment media is evolving rapidly. Media that once was only seen on television or radio is now delivered over the internet. Soon movies will be delivered to homes through high speed internet. Media watching is also evolving from a family activity to a solo activity as cable companies diversify and segment each channel to a narrower and narrower audience. As parents watch Fox in the family living room, their elementary school children are watching Nickelodeon upstairs in the playroom and their adolescent is in her room watching Comedy Central. Given this diversity and rapid change, many parents feel like they have lost control of what their children watch. Technology may be able to offer some solutions [91].

The most important technological advance that offers parents control of home television is the V-CHIP, a device that allows parents to:

block programming based on identifying programs without ratings, is available to consumers at a cost which is comparable to the cost of technology that allows parents to block programming based on common ratings, and will allow parents to block a broad range of programs on a multi-channel system as effectively and as easily as technology that allows parents to block programming based on common ratings. . .

Since 2000, the V-CHIP is included on all televisions that are distributed in the United States with screens that are larger than 13 inches. In addition to the

V-CHIP, many modern video and DVD players contain software that gives parents the ability to block by rating, so that their children cannot play material above a certain threshold rating. Given the prevalence of this kind of technology and the interest in protecting children from the ill effects of media, one would have expected several interventions that involve the V-CHIP. Yet a MEDLINE search on “V-CHIP” yields only four articles and a search on PsycINFO yields only six—none of which involve cross-sectional or interventional data. Although this technology is in its infancy, the potential benefits of widespread application are clear. One study studied the effect of a blocking device to restrict television time. Parents in intervention schools received a device that limited television time each day to 2 hours maximum. Television time and increase in BMI was compared with a control school where there was no media intervention. Compared with controls, intervention children had lower mean daily television time and lower growth in body mass index [92]. This study, a randomized clinical trial, provides strong evidence for a powerful intervention effect.

Incorporating antitobacco advertising into movies

There is some evidence that rolling an anti-tobacco advertisement before a movie with smoking blunts the movie’s effect on attitudes. [93,94]. Based on this evidence, one of the aims of SmokeFreeMovies is to insert antismoking advertisements into movies with smoking. This could be done in the preview section of DVD’s and at theaters. It would cost little or nothing for production studios to insert an antismoking message into the preview section of a DVD, just as they already insert anti-piracy messages. On the other hand, preview time in movie theaters is a hotly contested and sought after commodity, especially the 5-8 previews that roll just before the feature film, when the theater audience is largest (these previews are incorporated into the actual movie reel as part of a negotiation between the production companies and the National Association of Theater Owners (NATO). The production companies are not likely to allow an antismoking preview to cut into the limited time they are allotted to advertise upcoming movie releases. However, there is roughly a 15 minute period prior to the previews which is fully under the control of the company that owns the theater.

Through the state Attorneys General, meetings have been held with the president of the National Association of Theater Owners and, on another occasion, with owner-members. The theater owners receive numerous requests for public service announcements each year and are reluctant (with a few exceptions) to run antitobacco advertisements before movies. Most owners are willing to run such advertisements if they are paid for this service. Because movies appeal strongly to the teen audience, theaters may be an ideal medium for an antitobacco ad campaign; however, it is unclear from where the money to pay for such a campaign would come.

Media literacy

Media literacy refers to educational approaches to assist the viewer to understand better media inputs. Critical viewing skills are a major component of most media literacy educational programs [95]. From a persuasion theory standpoint [96,97], these programs aim to affect the way in which the recipient processes media information. Most of the media images that viewers see are processed implicitly, without much thought. Theoretically, adolescents are affected in a cumulative fashion by images of smoking in the media. Because they see literally thousands of smoking depictions by affluent characters in movies and television over time, they come to associate smoking with positive expectations. By teaching about the mechanisms by which media persuade, media literacy programs should cause the recipient to become a more effortful processor of the media (eg, to be more skeptical of commercial messages and images). An adolescent who is knowledgeable about the role of product placement in marketing and the persuasive power of movie images of smoking is more resistant to accepting the positive expectancies that are associated with the image.

Media literacy has great appeal from a theoretic standpoint; however, there is scant evidence that these programs have short- or long-term effects on adolescents. This is a rich area for intervention research, but until it can be shown that this approach has long-term beneficial effects, the bulk of effort should be directed at pressuring the industry to decrease depictions of smoking and motivating/encouraging parents to limit access.

Role of the pediatrician/adolescent specialist

Pediatricians should contribute on the individual and policy level. When counseling parents of preadolescents, it is important to emphasize controlling the home media environment. Prevalence studies show that R-rated movie viewing begins in 4th grade and increases with each grade thereafter. Parents should be encouraged to restrict access to R-rated and PG-13 rated movies during elementary school, because these movies—in addition to containing more violence—also contain many more depictions of smoking and alcohol use and serve as templates for the development of behavioral scripts. Prospective studies show that many parents are able to hold the line on R-rated movie restrictions through middle school, and that these adolescents have much lower rates of smoking initiation. Moreover, it is not too late to impose such restrictions in middle school; parents whose adolescents report a tightening of R-rated movie restrictions have significantly and substantially lower risks of initiating smoking.

At the policy level, it is important for pediatricians to voice support for the adoption of voluntary policies by the movie industry to limit exposure of children and adolescents to adult media. These include advertising restrictions that limit the marketing of R-rated movies on shows that are seen by a large

number of adolescents and the measures that are promoted by SmokeFreeMovies. The SmokeFreeMovies website includes an “Act now!” room that directs interested parties to local public health initiatives and allows for concerned individuals to email CEO’s of major movie production companies. It also is important for pediatricians to be vocal about supporting their state Attorney General in his/her effort to determine if tobacco brand appearances in movies violate the Master Settlement Agreement. Activism on the part of pediatricians and other professionals who have an interest in adolescent health carries great weight with the general public and in the halls of Congress.

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