

Chapter 1

Introduction, Summary, and Conclusions

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Introduction

Tobacco use is a global epidemic among young people. As with adults, it poses a serious health threat to youth and young adults in the United States and has significant implications for this nation's public and economic health in the future (Perry et al. 1994; Kessler 1995). The impact of cigarette smoking and other tobacco use on chronic disease, which accounts for 75% of American spending on health care (Anderson 2010), is well-documented and undeniable. Although progress has been made since the first Surgeon General's report on smoking and health in 1964 (U.S. Department of Health, Education, and Welfare [USDHEW] 1964), nearly one in four high school seniors is a current smoker. Most young smokers become adult smokers. One-half of adult smokers die prematurely from tobacco-related diseases (Fagerström 2002; Doll et al. 2004). Despite thousands of programs to reduce youth smoking and hundreds of thousands of media stories on the dangers of tobacco use, generation after generation continues to use these deadly products, and family after family continues to suffer the devastating consequences. Yet a robust science base exists on social, biological, and environmental factors that influence young people to use tobacco, the physiology of progression from experimentation to addiction, other health effects of tobacco use, the epidemiology of youth and young adult tobacco use, and evidence-based interventions that have proven effective at reducing both initiation and prevalence of tobacco use among young people. Those are precisely the issues examined in this report, which aims to support the application of this robust science base.

Nearly all tobacco use begins in childhood and adolescence (U.S. Department of Health and Human Services [USDHHS] 1994). In all, 88% of adult smokers who smoke daily report that they started smoking by the age of 18 years (see Chapter 3, "The Epidemiology of Tobacco Use Among Young People in the United States and Worldwide"). This is a time in life of great vulnerability to social influences (Steinberg 2004), such as those offered through the marketing of tobacco products and the modeling of smoking by attractive role models, as in movies (Dalton et al. 2009), which have especially strong effects on the young. This is also a time in life of heightened sensitivity to normative influences: as tobacco use is less tolerated in public areas and there are fewer social or regular users of tobacco, use decreases among youth (Alesci et al. 2003). And so, as we adults quit, we help protect our children.

Cigarettes are the only legal consumer products in the world that cause one-half of their long-term users to die prematurely (Fagerström 2002; Doll et al. 2004).

As this epidemic continues to take its toll in the United States, it is also increasing in low- and middle-income countries that are least able to afford the resulting health and economic consequences (Peto and Lopez 2001; Reddy et al. 2006). It is past time to end this epidemic. To do so, primary prevention is required, for which our focus must be on youth and young adults. As noted in this report, we now have a set of proven tools and policies that can drastically lower youth initiation and use of tobacco products. Fully committing to using these tools and executing these policies consistently and aggressively is the most straight forward and effective to making future generations tobacco-free.

The 1994 Surgeon General's Report

This Surgeon General's report on tobacco is the second to focus solely on young people since these reports began in 1964. Its main purpose is to update the science of smoking among youth since the first comprehensive Surgeon General's report on tobacco use by youth, *Preventing Tobacco Use Among Young People*, was published in 1994 (USDHHS 1994). That report concluded that if young people can remain free of tobacco until 18 years of age, most will never start to smoke. The report documented the addiction process for young people and how the symptoms of addiction in youth are similar to those in adults. Tobacco was also presented as a gateway drug among young people, because its use generally precedes and increases the risk of using illicit drugs. Cigarette advertising and promotional activities were seen as a potent way to increase the risk of cigarette smoking among young people, while community-wide efforts were shown to have been successful in reducing tobacco use among youth. All of these conclusions remain important, relevant, and accurate, as documented in the current report, but there has been considerable research since 1994 that greatly expands our knowledge about tobacco use among youth, its prevention, and the dynamics of cessation among young people. Thus, there is a compelling need for the current report.

Tobacco Control Developments

Since 1994, multiple legal and scientific developments have altered the tobacco control environment and

thus have affected smoking among youth. The states and the U.S. Department of Justice brought lawsuits against cigarette companies, with the result that many internal documents of the tobacco industry have been made public and have been analyzed and introduced into the science of tobacco control. Also, the 1998 Master Settlement Agreement with the tobacco companies resulted in the elimination of billboard and transit advertising as well as print advertising that directly targeted underage youth and limitations on the use of brand sponsorships (National Association of Attorneys General [NAAG] 1998). This settlement also created the American Legacy Foundation, which implemented a nationwide antismoking campaign targeting youth. In 2009, the U.S. Congress passed a law that gave the U.S. Food and Drug Administration authority to regulate tobacco products in order to promote the public's health (*Family Smoking Prevention and Tobacco Control Act* 2009). Certain tobacco companies are now subject to regulations limiting their ability to market to young people. In addition, they have had to reimburse state governments (through agreements made with some states and the Master Settlement Agreement) for some health care costs. Due in part to these changes, there was a decrease in tobacco use among adults and among youth following the Master Settlement Agreement, which is documented in this current report.

Recent Surgeon General Reports Addressing Youth Issues

Other reports of the Surgeon General since 1994 have also included major conclusions that relate to tobacco use among youth (Office of the Surgeon General 2010). In 1998, the report focused on tobacco use among U.S. racial/ethnic minority groups (USDHHS 1998) and noted that cigarette smoking among Black and Hispanic youth increased in the 1990s following declines among all racial/ethnic groups in the 1980s; this was particularly notable among Black youth, and culturally appropriate interventions were suggested. In 2000, the report focused on reducing tobacco use (USDHHS 2000b). A major conclusion of that report was that school-based interventions, when implemented with community- and media-based activities, could reduce or postpone the onset of smoking among adolescents by 20–40%. That report also noted that effective regulation of tobacco advertising and promotional activities directed at young people would very likely reduce the prevalence and onset of smoking. In 2001, the Surgeon General's report focused on women and smoking (USDHHS 2001). Besides reinforcing much of what was discussed in earlier reports, this report documented that

girls were more affected than boys by the desire to smoke for the purpose of weight control. Given the ongoing obesity epidemic (Bonnie et al. 2007), the current report includes a more extensive review of research in this area.

The 2004 Surgeon General's report on the health consequences of smoking (USDHHS 2004) concluded that there is sufficient evidence to infer that a causal relationship exists between active smoking and (a) impaired lung growth during childhood and adolescence; (b) early onset of decline in lung function during late adolescence and early adulthood; (c) respiratory signs and symptoms in children and adolescents, including coughing, phlegm, wheezing, and dyspnea; and (d) asthma-related symptoms (e.g., wheezing) in childhood and adolescence. The 2004 Surgeon General's report further provided evidence that cigarette smoking in young people is associated with the development of atherosclerosis.

The 2010 Surgeon General's report on the biology of tobacco focused on the understanding of biological and behavioral mechanisms that might underlie the pathogenicity of tobacco smoke (USDHHS 2010). Although there are no specific conclusions in that report regarding adolescent addiction, it does describe evidence indicating that adolescents can become dependent at even low levels of consumption. Two studies (Adriani et al. 2003; Schochet et al. 2005) referenced in that report suggest that because the adolescent brain is still developing, it may be more susceptible and receptive to nicotine than the adult brain.

Scientific Reviews

Since 1994, several scientific reviews related to one or more aspects of tobacco use among youth have been undertaken that also serve as a foundation for the current report. The Institute of Medicine (IOM) (Lynch and Bonnie 1994) released *Growing Up Tobacco Free: Preventing Nicotine Addiction in Children and Youths*, a report that provided policy recommendations based on research to that date. In 1998, IOM provided a white paper, *Taking Action to Reduce Tobacco Use*, on strategies to reduce the increasing prevalence (at that time) of smoking among young people and adults. More recently, IOM (Bonnie et al. 2007) released a comprehensive report entitled *Ending the Tobacco Problem: A Blueprint for the Nation*. Although that report covered multiple potential approaches to tobacco control, not just those focused on youth, it characterized the overarching goal of reducing smoking as involving three distinct steps: “reducing the rate of initiation of smoking among youth (IOM [Lynch and Bonnie] 1994), reducing involuntary tobacco smoke exposure (National Research Council 1986), and helping

people quit smoking” (p. 3). Thus, reducing onset was seen as one of the primary goals of tobacco control.

As part of USDHHS continuing efforts to assess the health of the nation, prevent disease, and promote health, the department released, in 2000, *Healthy People 2010* and, in 2010, *Healthy People 2020* (USDHHS 2000a, 2011). *Healthy People* provides science-based, 10-year national objectives for improving the health of all Americans. For 3 decades, *Healthy People* has established benchmarks and monitored progress over time in order to encourage collaborations across sectors, guide individuals toward making informed health decisions, and measure the impact of prevention activities. Each iteration of *Healthy People* serves as the nation’s disease prevention and health promotion roadmap for the decade. Both *Healthy People 2010* and *Healthy People 2020* highlight “Tobacco Use” as one of the nation’s “Leading Health Indicators,” feature “Tobacco Use” as one of its topic areas, and identify specific measurable tobacco-related objectives and targets for the nation to strive for. *Healthy People 2010* and *Healthy People 2020* provide tobacco objectives based on the most current science and detailed population-based data to drive action, assess tobacco use among young people, and identify racial and ethnic disparities. Additionally, many of the *Healthy People 2010* and *2020* tobacco objectives address reductions of tobacco use among youth and target decreases in tobacco advertising in venues most often influencing young people. A complete list of the healthy people 2020 objectives can be found on their Web site (USDHHS 2011).

In addition, the National Cancer Institute (NCI) of the National Institutes of Health has published monographs pertinent to the topic of tobacco use among youth. In 2001, NCI published Monograph 14, *Changing Adolescent Smoking Prevalence*, which reviewed data on smoking among youth in the 1990s, highlighted important statewide intervention programs, presented data on the influence of marketing by the tobacco industry and the pricing of cigarettes, and examined differences in smoking by racial/ethnic subgroup (NCI 2001). In 2008, NCI published Monograph 19, *The Role of the Media in Promoting and Reducing Tobacco Use* (NCI 2008). Although young people were not the sole focus of this Monograph,

the causal relationship between tobacco advertising and promotion and increased tobacco use, the impact on youth of depictions of smoking in movies, and the success of media campaigns in reducing youth tobacco use were highlighted as major conclusions of the report.

The Community Preventive Services Task Force (2011) provides evidence-based recommendations about community preventive services, programs, and policies on a range of topics including tobacco use prevention and cessation (Task Force on Community Preventive Services 2001, 2005). Evidence reviews addressing interventions to reduce tobacco use initiation and restricting minors’ access to tobacco products were cited and used to inform the reviews in the current report. The Cochrane Collaboration (2010) has also substantially contributed to the review literature on youth and tobacco use by producing relevant systematic assessments of health-related programs and interventions. Relevant to this Surgeon General’s report are Cochrane reviews on interventions using mass media (Sowden 1998), community interventions to prevent smoking (Sowden and Stead 2003), the effects of advertising and promotional activities on smoking among youth (Lovato et al. 2003, 2011), preventing tobacco sales to minors (Stead and Lancaster 2005), school-based programs (Thomas and Perara 2006), programs for young people to quit using tobacco (Grimshaw and Stanton 2006), and family programs for preventing smoking by youth (Thomas et al. 2007). These reviews have been cited throughout the current report when appropriate.

In summary, substantial new research has added to our knowledge and understanding of tobacco use and control as it relates to youth since the 1994 Surgeon General’s report, including updates and new data in subsequent Surgeon General’s reports, in IOM reports, in NCI Monographs, and in Cochrane Collaboration reviews, in addition to hundreds of peer-reviewed publications, book chapters, policy reports, and systematic reviews. Although this report is a follow-up to the 1994 report, other important reviews have been undertaken in the past 18 years and have served to fill the gap during an especially active and important time in research on tobacco control among youth.

Focus of the Report

Young People

This report focuses on “young people.” In general, work was reviewed on the health consequences, epidemiology, etiology, reduction, and prevention of tobacco use for those in the young adolescent (11–14 years of age), adolescent (15–17 years of age), and young adult (18–25 years of age) age groups. When possible, an effort was made to be specific about the age group to which a particular analysis, study, or conclusion applies. Because hundreds of articles, books, and reports were reviewed, however, there are, unavoidably, inconsistencies in the terminology used. “Adolescents,” “children,” and “youth” are used mostly interchangeably throughout this report. In general, this group encompasses those 11–17 years of age, although “children” is a more general term that will include those younger than 11 years of age. Generally, those who are 18–25 years old are considered young adults (even though, developmentally, the period between 18–20 years of age is often labeled late adolescence), and those 26 years of age or older are considered adults.

In addition, it is important to note that the report is concerned with active smoking or use of smokeless tobacco on the part of the young person. The report does not consider young people's exposure to secondhand smoke, also referred to as involuntary or passive smoking,

which was discussed in the 2006 report of the Surgeon General (USDHHS 2006). Additionally, the report does not discuss research on children younger than 11 years old; there is very little evidence of tobacco use in the United States by children younger than 11 years of age, and although there may be some predictors of later tobacco use in those younger years, the research on active tobacco use among youth has been focused on those 11 years of age and older.

Tobacco Use

Although cigarette smoking is the most common form of tobacco use in the United States, this report focuses on other forms as well, such as using smokeless tobacco (including chew and snuff) and smoking a product other than a cigarette, such as a pipe, cigar, or bidi (tobacco wrapped in tendu leaves). Because for young people the use of one form of tobacco has been associated with use of other tobacco products, it is particularly important to monitor all forms of tobacco use in this age group. The term “tobacco use” in this report indicates use of any tobacco product. When the word “smoking” is used alone, it refers to cigarette smoking.

Organization of the Report

This chapter begins by providing a short synopsis of other reports that have addressed smoking among youth and, after listing the major conclusions of this report, will end by presenting conclusions specific to each chapter. Chapter 2 of this report (“The Health Consequences of Tobacco Use Among Young People”) focuses on the diseases caused by early tobacco use, the addiction process, the relation of body weight to smoking, respiratory and pulmonary problems associated with tobacco use, and cardiovascular effects. Chapter 3 (“The Epidemiology of Tobacco Use Among Young People in the United States and Worldwide”) provides recent and long-term cross-sectional and longitudinal data on cigarette smoking, use of smokeless tobacco, and the use of other tobacco products by young people, by racial/ethnic group and gender, primarily in the United States, but including some worldwide

data as well. Chapter 4 (“Social, Environmental, Cognitive, and Genetic Influences on the Use of Tobacco Among Youth”) identifies the primary risk factors associated with tobacco use among youth at four levels, including the larger social and physical environments, smaller social groups, cognitive factors, and genetics and neurobiology. Chapter 5 (“The Tobacco Industry's Influences on the Use of Tobacco Among Youth”) includes data on marketing expenditures for the tobacco industry over time and by category, the effects of cigarette advertising and promotional activities on young people's smoking, the effects of price and packaging on use, the use of the Internet and movies to market tobacco products, and an evaluation of efforts by the tobacco industry to prevent tobacco use among young people. Chapter 6 (“Efforts to Prevent and Reduce Tobacco Use Among Young People”) provides evidence

on the effectiveness of family-based, clinic-based, and school-based programs, mass media campaigns, regulatory and legislative approaches, increased cigarette prices, and community and statewide efforts in the fight against

tobacco use among youth. Chapter 7 (“A Vision for Ending the Tobacco Epidemic”) points to next steps in preventing and reducing tobacco use among young people.

Preparation of the Report

This report of the Surgeon General was prepared by the Office on Smoking and Health (OSH), National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention (CDC), USDHHS. In 2008, 18 external independent scientists reviewed the 1994 report and suggested areas to be added and updated. These scientists also suggested chapter editors and a senior scientific editor, who were contacted by OSH. Each chapter editor named external scientists who could contribute, and 33 content experts prepared draft sections. The draft sections were consolidated into chapters by the chapter editors and then reviewed by the senior scientific editor, with technical editing performed by CDC.

The chapters were sent individually to 34 peer reviewers who are experts in the areas covered and who reviewed the chapters for scientific accuracy and comprehensiveness. The entire manuscript was then sent to more than 25 external senior scientists who reviewed the science of the entire document. After each review cycle, the drafts were revised by the chapter and senior scientific editor on the basis of the experts' comments. Subsequently, the report was reviewed by various agencies within USDHHS. Publication lags prevent up-to-the-minute inclusion of all recently published articles and data, and so some more recent publications may not be cited in this report.

Evaluation of the Evidence

Since the first Surgeon General's report in 1964 on smoking and health (USDHEW 1964), major conclusions concerning the conditions and diseases caused by cigarette smoking and the use of smokeless tobacco have been based on explicit criteria for causal inference (USDHHS 2004). Although a number of different criteria have been proposed for causal inference since the 1960s, this report focuses on the five commonly accepted criteria that were used in the original 1964 report and that are discussed in greater detail in the 2004 report on the health consequences of smoking (USDHHS 2004). The five criteria refer to the examination of the association between two variables, such as a risk factor (e.g., smoking) and an outcome (e.g., lung cancer). Causal inference between these variables is based on (1) the *consistency* of the association across multiple studies; this is the persistent finding of an association in different persons, places, circumstances, and times; (2) the degree of the *strength* of association, that is, the magnitude and statistical significance of the

association in multiple studies; (3) the *specificity* of the association to clearly demonstrate that tobacco use is robustly associated with the condition, even if tobacco use has multiple effects and multiple causes exist for the condition; (4) the *temporal relationship* of the association so that tobacco use precedes disease onset; and (5) the *coherence* of the association, that is, the argument that the association makes scientific sense, given data from other sources and understanding of biological and psychosocial mechanisms (USDHHS 2004). Since the 2004 Surgeon General's report, *The Health Consequences of Smoking*, a four-level hierarchy (Table 1.1) has been used to assess the research data on associations discussed in these reports (USDHHS 2004). In general, this assessment was done by the chapter editors and then reviewed as appropriate by peer reviewers, senior scientists, and the scientific editors. For a relationship to be considered sufficient to be characterized as causal, multiple studies over time provided evidence in support of each criteria.

Table 1.1 Four-level hierarchy for classifying the strength of causal inferences based on available evidence

Level 1	Evidence is sufficient to infer a causal relationship.
Level 2	Evidence is suggestive but not sufficient to infer a causal relationship.
Level 3	Evidence is inadequate to infer the presence or absence of a causal relationship (which encompasses evidence that is sparse, of poor quality, or conflicting).
Level 4	Evidence is suggestive of no causal relationship .

When a causal association is presented in the chapter conclusions in this report, these four levels are used to describe the strength of the evidence of the association, from causal (1) to not causal (4). Within the report, other terms are used to discuss the evidence to date (i.e., mixed, limited, and equivocal evidence), which generally represent an inadequacy of data to inform a conclusion.

However, an assessment of a casual relationship is not utilized in presenting all of the report's conclusions. The major conclusions are written to be important summary statements that are easily understood by those reading the report. Some conclusions, particularly those found in Chapter 3 (epidemiology), provide observations and data related to tobacco use among young people, and are generally not examinations of causal relationships. For those conclusions that are written using the hierarchy above, a careful and extensive review of the literature has been undertaken for this report, based on the accepted causal criteria (USDHHS 2004). Evidence that was charac-

terized as Level 1 or Level 2 was prioritized for inclusion as chapter conclusions.

In addition to causal inferences, statistical estimation and hypothesis testing of associations are presented. For example, confidence intervals have been added to the tables in the chapter on the epidemiology of youth tobacco use (see Chapter 3), and statistical testing has been conducted for that chapter when appropriate. The chapter on efforts to prevent tobacco use discusses the relative improvement in tobacco use rates when implementing one type of program (or policy) versus a control program. Statistical methods, including meta-analytic methods and longitudinal trajectory analyses, are also presented to ensure that the methods of evaluating data are up to date with the current cutting-edge research that has been reviewed. Regardless of the methods used to assess significance, the five causal criteria discussed above were applied in developing the conclusions of each chapter and the report.

Major Conclusions

1. Cigarette smoking by youth and young adults has immediate adverse health consequences, including addiction, and accelerates the development of chronic diseases across the full life course.
2. Prevention efforts must focus on both adolescents and young adults because among adults who become daily smokers, nearly all first use of cigarettes occurs by 18 years of age (88%), with 99% of first use by 26 years of age.
3. Advertising and promotional activities by tobacco companies have been shown to cause the onset and continuation of smoking among adolescents and young adults.
4. After years of steady progress, declines in the use of tobacco by youth and young adults have slowed for cigarette smoking and stalled for smokeless tobacco use.
5. Coordinated, multicomponent interventions that combine mass media campaigns, price increases including those that result from tax increases, school-based policies and programs, and statewide or community-wide changes in smoke-free policies and norms are effective in reducing the initiation, prevalence, and intensity of smoking among youth and young adults.

Chapter Conclusions

The following are the conclusions presented in the substantive chapters of this report.

Chapter 2. The Health Consequences of Tobacco Use Among Young People

1. The evidence is sufficient to conclude that there is a causal relationship between smoking and addiction to nicotine, beginning in adolescence and young adulthood.
2. The evidence is suggestive but not sufficient to conclude that smoking contributes to future use of marijuana and other illicit drugs.
3. The evidence is suggestive but not sufficient to conclude that smoking by adolescents and young adults is *not* associated with significant weight loss, contrary to young people's beliefs.
4. The evidence is sufficient to conclude that there is a causal relationship between active smoking and both reduced lung function and impaired lung growth during childhood and adolescence.
5. The evidence is sufficient to conclude that there is a causal relationship between active smoking and wheezing severe enough to be diagnosed as asthma in susceptible child and adolescent populations.
6. The evidence is sufficient to conclude that there is a causal relationship between smoking in adolescence and young adulthood and early abdominal aortic atherosclerosis in young adults.
7. The evidence is suggestive but not sufficient to conclude that there is a causal relationship between smoking in adolescence and young adulthood and coronary artery atherosclerosis in adulthood.

Chapter 3. The Epidemiology of Tobacco Use Among Young People in the United States and Worldwide

1. Among adults who become daily smokers, nearly all first use of cigarettes occurs by 18 years of age (88%), with 99% of first use by 26 years of age.
2. Almost one in four high school seniors is a current (in the past 30 days) cigarette smoker, compared with one in three young adults and one in five adults. About 1 in 10 high school senior males is a current smokeless tobacco user, and about 1 in 5 high school senior males is a current cigar smoker.
3. Among adolescents and young adults, cigarette smoking declined from the late 1990s, particularly after the Master Settlement Agreement in 1998. This decline has slowed in recent years, however.
4. Significant disparities in tobacco use remain among young people nationwide. The prevalence of cigarette smoking is highest among American Indians and Alaska Natives, followed by Whites and Hispanics, and then Asians and Blacks. The prevalence of cigarette smoking is also highest among lower socioeconomic status youth.
5. Use of smokeless tobacco and cigars declined in the late 1990s, but the declines appear to have stalled in the last 5 years. The latest data show the use of smokeless tobacco is increasing among White high school males, and cigar smoking may be increasing among Black high school females.
6. Concurrent use of multiple tobacco products is prevalent among youth. Among those who use tobacco, nearly one-third of high school females and more than one-half of high school males report using more than one tobacco product in the last 30 days.
7. Rates of tobacco use remain low among girls relative to boys in many developing countries, however, the gender gap between adolescent females and males is narrow in many countries around the globe.

Chapter 4. Social, Environmental, Cognitive, and Genetic Influences on the Use of Tobacco Among Youth

1. Given their developmental stage, adolescents and young adults are uniquely susceptible to social and environmental influences to use tobacco.
2. Socioeconomic factors and educational attainment influence the development of youth smoking behavior. The adolescents most likely to begin to use tobacco and progress to regular use are those who have lower academic achievement.
3. The evidence is sufficient to conclude that there is a causal relationship between peer group social influences and the initiation and maintenance of smoking behaviors during adolescence.
4. Affective processes play an important role in youth smoking behavior, with a strong association between youth smoking and negative affect.
5. The evidence is suggestive that tobacco use is a heritable trait, more so for regular use than for onset. The expression of genetic risk for smoking among young people may be moderated by small-group and larger social-environmental factors.

Chapter 5. The Tobacco Industry's Influences on the Use of Tobacco Among Youth

1. In 2008, tobacco companies spent \$9.94 billion on the marketing of cigarettes and \$547 million on the marketing of smokeless tobacco. Spending on cigarette marketing is 48% higher than in 1998, the year of the Master Settlement Agreement. Expenditures for marketing smokeless tobacco are 277% higher than in 1998.
2. Tobacco company expenditures have become increasingly concentrated on marketing efforts that reduce the prices of targeted tobacco products. Such expenditures accounted for approximately 84% of cigarette

marketing and more than 77% of the marketing of smokeless tobacco products in 2008.

3. The evidence is sufficient to conclude that there is a causal relationship between advertising and promotional efforts of the tobacco companies and the initiation and progression of tobacco use among young people.
4. The evidence is suggestive but not sufficient to conclude that tobacco companies have changed the packaging and design of their products in ways that have increased these products' appeal to adolescents and young adults.
5. The tobacco companies' activities and programs for the prevention of youth smoking have not demonstrated an impact on the initiation or prevalence of smoking among young people.
6. The evidence is sufficient to conclude that there is a causal relationship between depictions of smoking in the movies and the initiation of smoking among young people.

Chapter 6. Efforts to Prevent and Reduce Tobacco Use Among Young People

1. The evidence is sufficient to conclude that mass media campaigns, comprehensive community programs, and comprehensive statewide tobacco control programs can prevent the initiation of tobacco use and reduce its prevalence among youth.
2. The evidence is sufficient to conclude that increases in cigarette prices reduce the initiation, prevalence, and intensity of smoking among youth and young adults.
3. The evidence is sufficient to conclude that school-based programs with evidence of effectiveness, containing specific components, can produce at least short-term effects and reduce the prevalence of tobacco use among school-aged youth.

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