

# Enforce bans on tobacco advertising, promotion and sponsorship

## Tobacco companies spend billions of US dollars on advertising, promotion and sponsorship every year

Although precise calculations have not been made, the best estimate is that the tobacco industry spends tens of billions of US dollars worldwide each year on tobacco advertising, promotion and sponsorship (TAPS) (7). In the United States alone, the tobacco industry spends more than US\$ 10 billion annually on TAPS activities (8). To sell

a product that kills up to half of its users requires extraordinary marketing savvy, and tobacco companies are some of the most manipulative product sellers and promoters in the world. They are increasingly aggressive in circumventing prohibitions on TAPS that are designed to curb tobacco use. The requirements of the WHO Framework

Convention on Tobacco Control (WHO FCTC) for a comprehensive ban on TAPS are intended to counter this. WHO introduced the MPOWER measures to support countries in building capacity to implement these bans.



### **Tobacco advertising, promotion and sponsorship increase the likelihood that people will start or continue to smoke**

Although TAPS activities are designed to have broad appeal to consumers in all demographic groups, and especially among current smokers, specific efforts are made to persuade non-smokers to start. As a result, key target populations for TAPS include youth, who are at the age when people are most likely to start regular smoking (9, 10), and women, who in most countries are less likely to be current smokers than men (10).

Young people are especially vulnerable to becoming tobacco users and, once addicted, will likely be steady customers for many years. Adolescents are at a critical transitional phase in their lives, and TAPS activities communicate messages that using tobacco products will satisfy their social and psychological needs (e.g. popularity, peer acceptance and positive self-image) (10, 11). People who smoke are generally extremely loyal to their chosen brand of cigarettes, so their choice of brand during their smoking initiation period is especially important (12), and becomes crucial to the ability of tobacco companies to maintain them as life-long customers (10).

Exposure to TAPS, which usually occurs at very young ages (before age 11 and often earlier), increases positive perceptions of tobacco and curiosity about tobacco use. It also makes tobacco use seem less harmful than it actually is, and influences beliefs and perceptions of tobacco use prevalence (13, 14, 15), which increase the likelihood that adolescents will start to smoke (10, 16, 17).

**To sell a product that kills up to half of its users requires extraordinary marketing savvy, and tobacco companies are some of the most manipulative product sellers and promoters in the world.**

Women, who in many countries have traditionally not used tobacco, are viewed by the tobacco industry as an enormous potential emerging market because of their increasing financial and social independence, and have been targeted accordingly (1). As a result, smoking among women is expected to double worldwide from 2005 to 2025 (18). Many niche cigarette brands have been developed to appeal specifically to women (e.g. Virginia Slims, Eve), and existing brands have been restyled to increase their appeal among women (e.g. Doral). In South Korea, these strategies increased smoking rates among women from 1.6% to 13% between 1988 and 1998 (19).

**Tobacco companies target low- and middle-income countries**

The tobacco industry is also increasingly targeting people in low- and middle-income countries, especially youth and women (20).

Tobacco use is stable or declining slightly in most higher-income countries, but is increasing in many lower-income countries – in some cases rapidly – as they continue to develop economically (21). To capture the many potential new users in lower-income countries, the tobacco industry is rapidly expanding TAPS activities in these countries, using tactics refined and perfected over decades in high-income countries (20).

The tobacco industry has become adept at tailoring these advertising and promotion tactics to the specific market environments of low- and middle-income countries (20). Examples of country-specific targeting abound.

- In Guinea, attractive young women are hired by tobacco companies as marketing executives, but in reality serve as so-called “cigarette girls” whose duty is to promote cigarettes at nightclubs, in front of retail shops and in other public places (22). A similar strategy is used in Thailand, where young women are hired

as “ambassadors of smoking” to conduct tobacco company promotions (23).

- In both Indonesia and Senegal, most of the public basketball courts in these countries’ cities are painted with the logos of cigarette brands (22).
- In Indonesia, which has yet to become a Party to the WHO FCTC, several youth-friendly international music stars have performed in concerts sponsored by tobacco companies (24).
- Tobacco sales and promotions continue to be popular in bars, cafés and nightclubs in all WHO regions, with larger establishments more likely to display tobacco advertising and participate in tobacco company promotions (25).
- In Brazil, an interactive gaming machine in many clubs, bars and other locations popular with young people have players capture an on-screen moving Marlboro logo to win prizes; the machine also gathers players’ email addresses to enable the sending of promotional information (26).

Although Marlboro had been the world’s top-selling cigarette brand since the early 1970s, Philip Morris began conducting sophisticated market research in different countries and regions in the 1990s to develop advertising and promotional strategies that focused on the youth market. These targeted efforts further intensified Marlboro’s brand appeal among young adults worldwide, solidifying its position as the most widely recognized, most popular and largest selling cigarette brand globally (27).

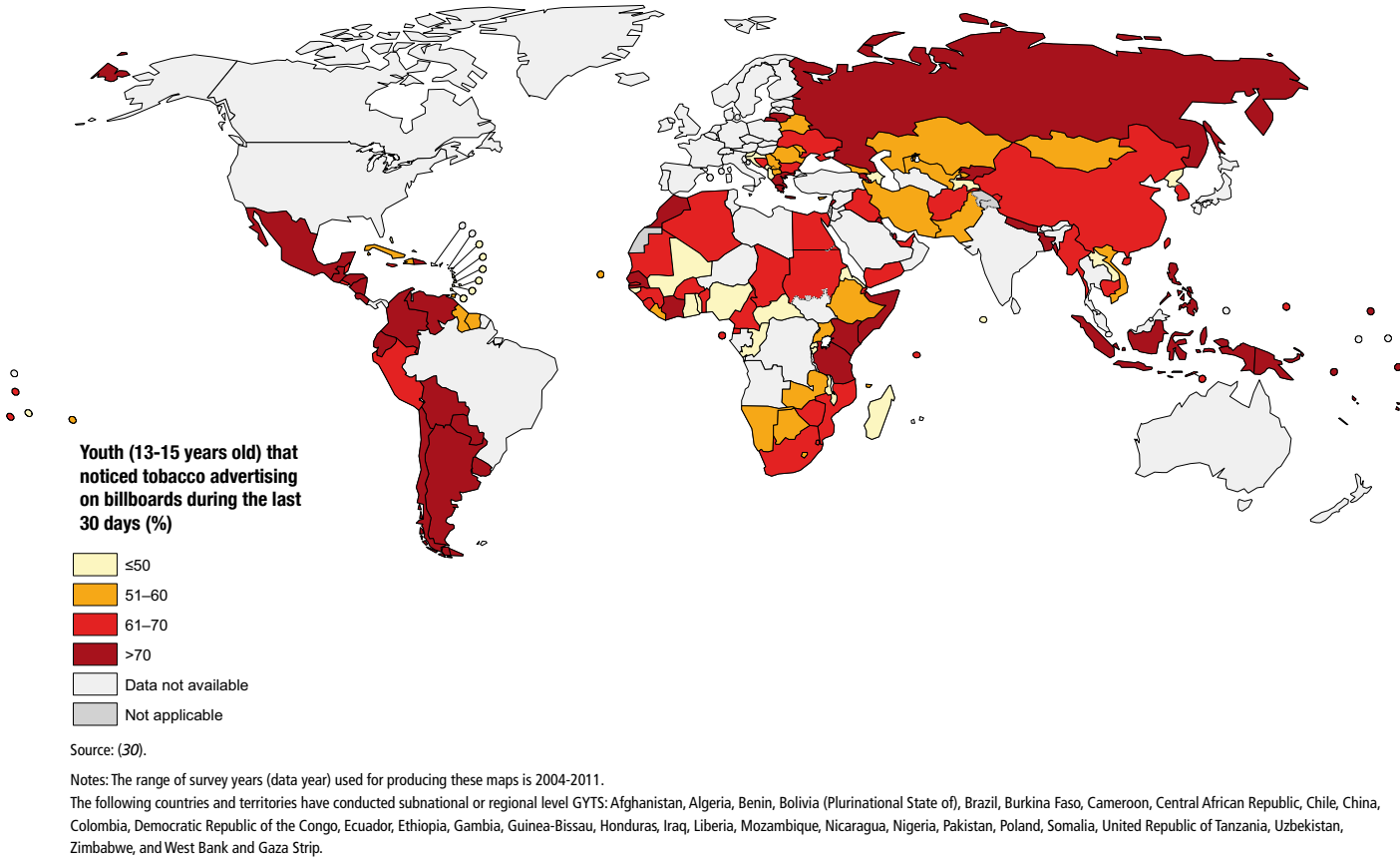
**Advertising, promotion and sponsorship activities normalize and glamourize tobacco use**

TAPS falsely associates tobacco use with desirable qualities such as youth, energy, glamour and sex appeal (28). To attract new users, the industry designs marketing campaigns featuring active and attractive young people enjoying life with tobacco (10, 29).

TAPS also creates additional obstacles that blunt tobacco control efforts. Widespread TAPS activities “normalize” tobacco by depicting it as being no different from any other consumer product. This increases the social acceptability of tobacco use and makes it more difficult to educate people about tobacco’s harms (10). It also strengthens the tobacco industry’s influence over the media, as well as sporting and entertainment businesses, through tens of billions of dollars in annual spending on TAPS activities.

**To capture new users in lower-income countries, the tobacco industry is rapidly expanding TAPS activities, using tactics perfected in high-income countries.**

TEENAGERS ARE EXPOSED TO BILLBOARD TOBACCO ADVERTISING AT AN ALARMING MAGNITUDE (DATA FROM THE GLOBAL YOUTH TOBACCO SURVEY)





# Complete bans are needed to counteract the effects of tobacco advertising, promotion and sponsorship

Tobacco companies rely heavily on advertising and other promotional techniques to attract new users, who are critical to maintaining demand for tobacco products because they replace smokers who quit or who die prematurely from tobacco-related illness. In countries whose populations are growing more rapidly than rates of tobacco use are declining, advertising will increase the market for tobacco even further. To counteract the tens of billions of dollars spent worldwide each year by the tobacco industry on advertising, promotion and sponsorship (7), prohibiting all forms of TAPS activities is a key tobacco control strategy. To assist countries in achieving this goal, the Conference of the Parties to the WHO FCTC has adopted guidelines for implementing Article 13 of the Convention (5).

Exposure to TAPS is associated with higher smoking prevalence rates (31, 32), and in particular with initiation and continuation of smoking among youth (9, 33). The goal of bans on TAPS is therefore to completely eliminate exposure to tobacco industry advertising and promotional messages (34).

## Bans on tobacco advertising, promotion and sponsorship are effective at reducing smoking

A comprehensive ban on all TAPS activities significantly reduces exposure to smoking cues resulting from tobacco advertising and promotion (35). This in turn significantly reduces the industry's ability to continue promoting and selling its products, both

to young people who have not yet started to use tobacco as well as to adult tobacco users who want to quit (36). About a third of youth experimentation with tobacco occurs as a result of exposure to TAPS (37). Protecting people from TAPS activities can substantially reduce tobacco consumption (38), and the more channels in which tobacco advertising and promotion are prohibited, the less likely that people will be exposed to TAPS (39).

Comprehensive bans on TAPS reduce cigarette consumption in all countries regardless of income level (31). In high-income countries, a comprehensive ban that covers tobacco advertising in all media and also includes bans on all promotions or displays using tobacco brand names and logos has been documented to

decrease tobacco consumption by about 7%, independent of other tobacco control interventions (40, 41, 42).

One of the strongest arguments to support bans on TAPS is the effect that they have on youth smoking initiation and prevalence rates (43). Tobacco companies know that most people do not initiate smoking after they reach adulthood and develop the capacity to make informed decisions (29, 44), and reductions in youth smoking rates may lead to lower adult smoking prevalence in future years (45).

## Partial bans and voluntary restrictions are ineffective

Partial TAPS bans have little or no effect on smoking prevalence (31), and enable the industry to maintain its ability to promote and sell its products to young people who have not yet started using tobacco as well as to adult tobacco users who want to quit (46). Partial bans also generally do not include indirect or alternative forms of marketing such as promotions and sponsorships (39, 47).

When faced with a ban that does not completely cover all TAPS activities, the tobacco industry will maintain its total amount of advertising and promotional expenditures by simply diverting resources

to other permitted types of TAPS activities to compensate (10, 40). In places where partial bans prohibit direct advertising of tobacco products in traditional media, for example, tobacco companies will invariably attempt to circumvent these restrictions by employing a variety of indirect advertising and promotional tactics (10, 48).

Each type of TAPS activity works in a specific way to reach smokers and potential smokers but any will suffice as a substitute when bans are enacted. If only television and radio advertising is banned, for example, the tobacco industry will reallocate its advertising budgets to other media such as newspapers, magazines, billboards and the Internet (10). If all traditional advertising channels are blocked, the industry will



**Partial TAPS bans have little or no effect on smoking prevalence, and enable the industry to promote and sell its products to young people who have not yet started using tobacco.**

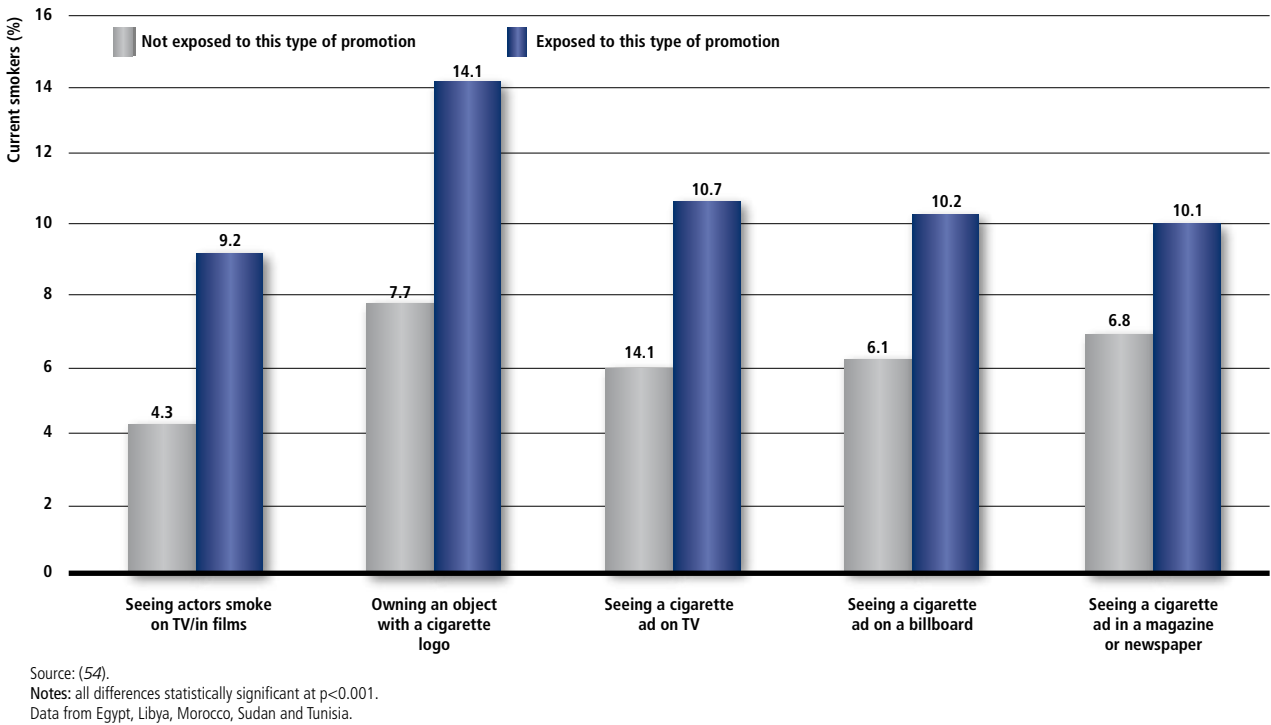
convert advertising expenditures to other TAPS activities, including sponsorship of events popular among youth, such as sports and music events, and to tobacco promotions in bars and nightclubs (10).

Examples of this type of substitution by the tobacco industry include the immediate increase in expenditures for print media advertising in the United States in 1971 to compensate for a complete ban on

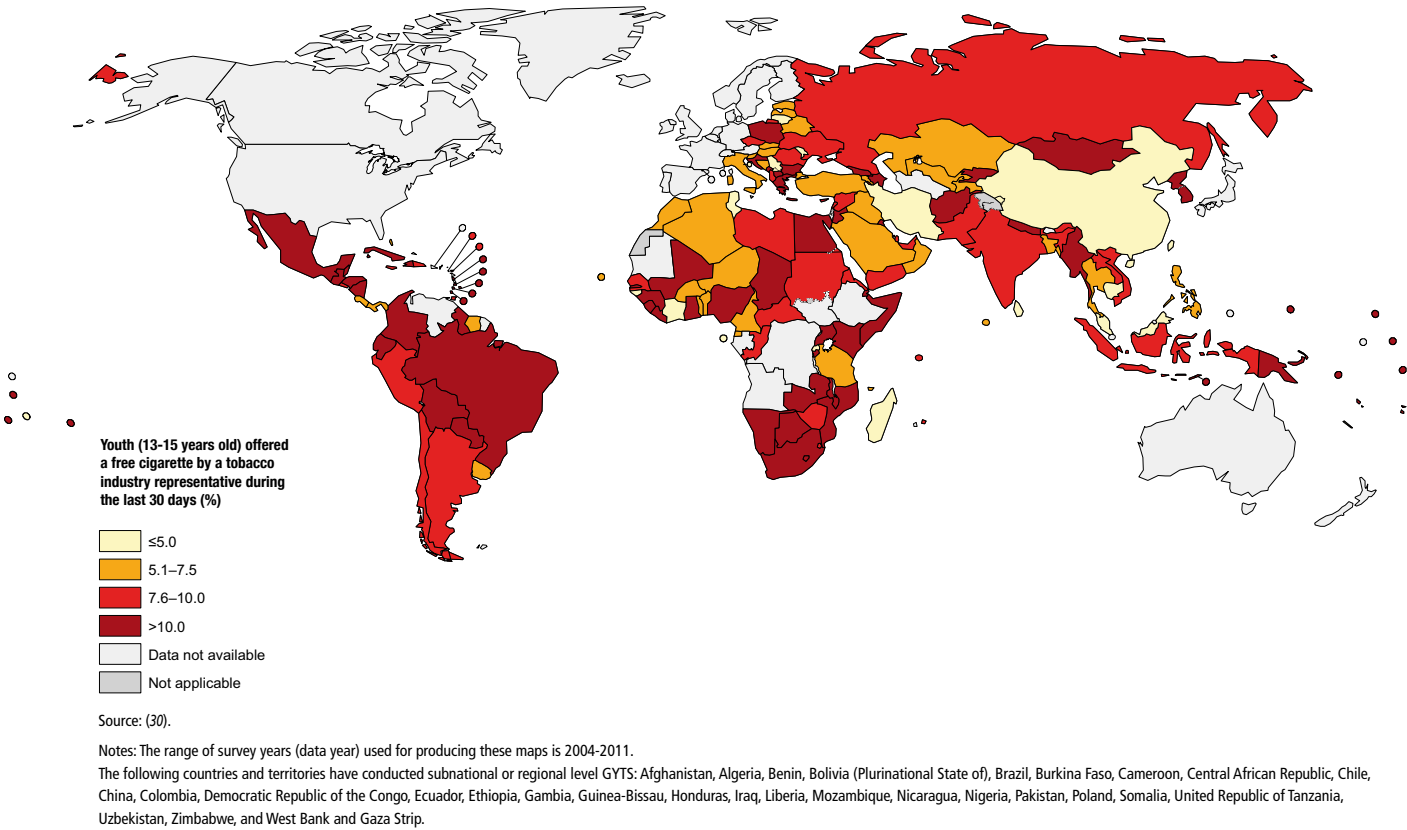
television and radio tobacco advertising (49). In Singapore, the first country to restrict tobacco advertising, tobacco companies increased their spending on television advertising in neighbouring Malaysia that could be received by consumers in Singapore, and Philip Morris introduced a new cigarette brand by first promoting a wine cooler with the same name (a tactic known as “brand stretching”) (50).

Voluntary restrictions on TAPS activities are also ineffective (10, 51), as ultimately there is no law compelling the industry to comply with its own voluntary regulations (52, 53). In addition, voluntary restrictions usually do not cover activities by tobacco retailers, distributors and importers, which in most cases not are under direct control and supervision of tobacco companies, and consequently fail to prevent point-of-sale advertising or displays, which are among the most pervasive forms of tobacco advertising.

ADOLESCENTS IN NORTHERN AFRICA ARE MORE LIKELY TO SMOKE IF EXPOSED TO TOBACCO PROMOTION



TOBACCO COMPANIES TARGET TEENAGERS BY OFFERING FREE CIGARETTES (DATA FROM THE GLOBAL YOUTH TOBACCO SURVEY)





# Bans must completely cover all types of tobacco advertising, promotion and sponsorship

To be effective in reducing tobacco consumption, bans must be complete and apply to all types of advertising in all media, as well as to all promotion and sponsorship activities, both direct and indirect (31, 46, 55). Legislation should be written in uncomplicated language and include clear definitions, as outlined in the WHO FCTC and the guidelines for implementing Article 13, to maximize the effectiveness of the ban (5).

Direct advertising is only one component of the integrated set of marketing strategies that tobacco companies use to promote their products (10, 44). If advertising is prohibited in one particular medium, the tobacco industry merely redirects expenditures to alternative advertising, promotion and sponsorship vehicles to carry their message to target populations (10, 40, 42, 56).

## Bans on direct advertising

Bans on direct advertising should cover all types of media, including:

- print (newspapers, magazines);
- broadcast, cable and satellite (radio, television);
- cinemas (on-screen advertisements shown before feature films);
- outdoor displays (billboards, transit vehicles and stations);
- point-of-sale (advertising, signage and product displays in retail stores);
- Internet.

## Bans on indirect advertising, promotion and sponsorship

A complete TAPS ban should also prohibit all forms of indirect tobacco advertising, including promotion and sponsorship activities such as:

- free distribution of tobacco and related products in the mail or through other means;
- promotional discounts;
- non-tobacco goods and services identified with tobacco brand names (brand stretching);
- brand names of non-tobacco products used for tobacco products (brand sharing);

- appearance of tobacco products and tobacco brand names in television, films and other audiovisual entertainment products, including on the Internet;
- sponsored events;
- so-called “corporate social responsibility” initiatives.

Tobacco companies invest in sophisticated branding to promote their products (10). Promotion and sponsorship activities associate tobacco use with desirable situations or environments and include showing tobacco use in films and television, sponsoring music and sporting events, using fashionable non-tobacco products or popular celebrities to promote tobacco, and brand stretching that allows consumers to

make statements of identity (e.g. tobacco brand logos printed on clothing). Indirect advertising can also serve to improve the public image of tobacco and tobacco companies (57).

Tobacco packaging itself is among the most prominent and important forms of tobacco advertising and promotion (58). The tobacco industry exploits all packaging elements, including pack construction, in addition to graphic design and use of colour, to increase the appeal of smoking (29). Brightly coloured cigarette packages are attractive to children, who are drawn to the images and associate them with positive attributes such as “fun” and “happiness”, and tobacco packaging can be designed in a manner specifically

intended to attract both male and female young adults (59). Many youth consider plain packaging to be unattractive and that it enforces negative attitudes toward smoking (59).

## Point-of-sale bans are a key policy intervention

Point-of-sale retail settings have become increasingly important for TAPS activities (10), and in many countries people are more aware of tobacco advertising in stores than via any other advertising channel (39). Therefore, it is important to ban point-of-sale advertising, including product displays and signage, in retail stores (60). Currently,

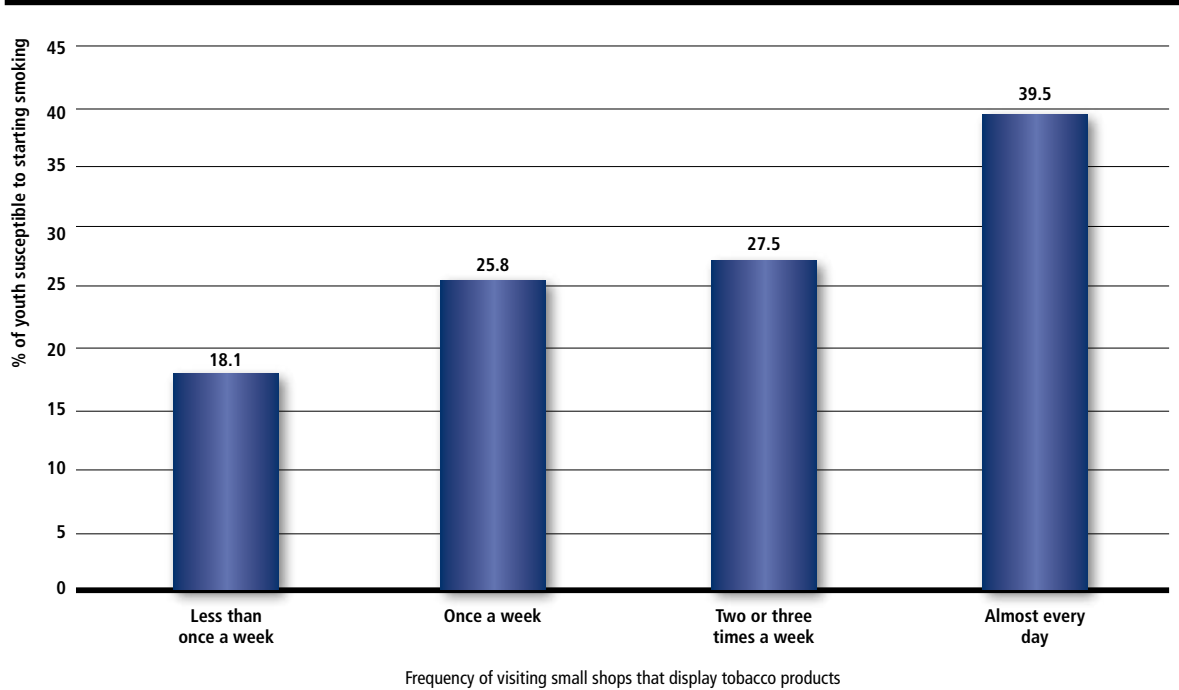


Display of tobacco products in Norway before display ban



Since the ban entered into force, tobacco products are no longer visible at the point of sale in Norway

## YOUTH EXPOSED TO DISPLAY OF TOBACCO PRODUCTS IN SHOPS ARE MORE SUSCEPTIBLE TO STARTING SMOKING (DATA FROM THE UK)



Source: (61).

very few countries restrict point-of-sale cigarette package displays, which have the same effect as media advertising and similarly influence smoking behaviour (62).

Point-of-sale promotion, including price discounts and product giveaways, may account for the majority of TAPS expenditures in some countries (7). A ban on these activities limits the ability of marketing to cue tobacco users to make a purchase, which appears to lead to reductions in youth smoking as well as reduce impulse purchases among adults wanting to quit (63).

In Ireland, which eliminated point-of-sale tobacco displays in 2009, the lack of visual smoking cues in shops caused youth to be less likely to believe their peers were smokers, thus helping to denormalize tobacco use and reduce the likelihood of smoking initiation (64). In Norway, which enacted a ban in 2010, removal of point-of-sale tobacco displays was perceived as a barrier for youth purchases of tobacco and diminished the value of branding in purchasing choices (65). In the UK, cigarette

sales declined by 3% in retail stores that had covered up or removed product displays in advance of an announced ban (66).

This intervention can be further strengthened by keeping tobacco products behind the counter and out of public view, so that customers must ask specifically if the store sells them. The small extra effort required to ask a retailer for tobacco products may deter some purchases and assist with cessation efforts. Youths are less likely to attempt a purchase in stores where tobacco products are hidden from view (67).

### **“Corporate social responsibility” initiatives should be prohibited**

Tobacco companies frequently engage in so-called “corporate social responsibility” activities, such as sponsorship of research, charities, educational programmes, community projects and other “socially responsible” activities, to improve their image as socially acceptable economic contributors and good corporate citizens

(10). Many such activities focus on health philanthropy, but there is a clear conflict of interest between the health harms caused by tobacco use and tobacco industry spending on initiatives that address health issues (68). Other examples of this strategy include tobacco companies providing economic support to countries and communities suffering from natural disasters or other crises, which helps improve public perceptions of the industry, creates goodwill among influential groups such as journalists and policy-makers, and serves as brand promotion (69).

However, these activities are actually intended as corporate political activity to broker access to public officials, influence policy development, and counteract opposing political coalitions (70), with the ultimate goal of persuading governments not to implement policies that may restrict tobacco use and reduce sales (71). In the case of disaster relief, the intent is to persuade “beneficiaries” to side with their tobacco industry benefactors to oppose tobacco control measures. Ultimately, “corporate social responsibility” activities

do little to address the health and economic impacts of tobacco use (73). Bans on this form of promotional activity would be another important component of a comprehensive tobacco control programme.

### **The tobacco industry will strongly oppose bans on its advertising, promotion and sponsorship activities**

The tobacco industry strongly opposes bans on TAPS because they are highly effective in reducing tobacco use and initiation, and the industry will lobby heavily against even the most minimal restrictions. The industry often argues that legislative bans on TAPS are not necessary and that voluntary codes and self-regulation are sufficient. The industry will claim that bans restrict free enterprise, prevent consumers from making their own choices and impede free speech, including the right to promote a legal product.

The tobacco industry also claims that TAPS activities are not intended to expand sales or attract new users, but are simply

a means of influencing brand choice and fostering market competition among brands for current tobacco users (31). However, the primary purpose of TAPS is to increase tobacco sales (10), which contributes towards killing more people by encouraging current smokers to smoke more and decreasing their motivation to quit. TAPS activities also lead potential users – and young people specifically – to try tobacco and become long-term customers (46). TAPS that targets youth and specific demographic subgroups is particularly effective (10,74,75).

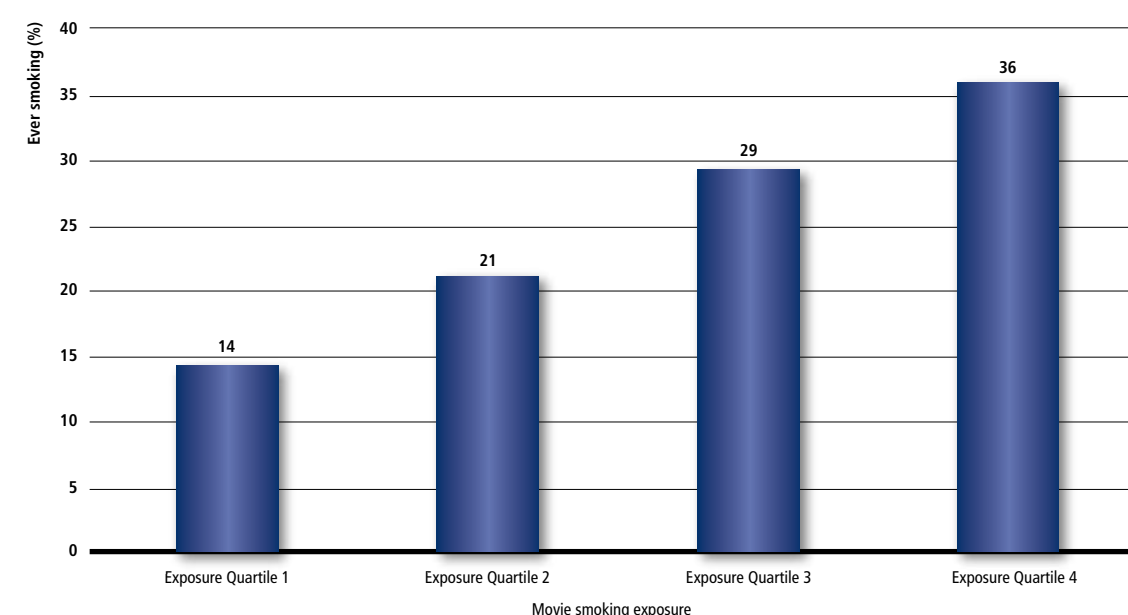
Tobacco importers and retailers are typically business entities that in most countries are separate from manufacturers, but because they are still part of the tobacco industry, they have a direct interest in avoiding any restrictions on TAPS activities. Media, entertainment and sporting businesses, which benefit from tobacco industry marketing expenditures, will act as proxies for the tobacco industry to fight bans on TAPS and other tobacco control policies because they fear losing customers or advertising, promotion and sponsorship revenues.

### **Industry arguments can be effectively countered**

Several points can be raised to effectively counter tobacco industry arguments against bans on TAPS activities.

- Tobacco use kills people and damages their health.
- Governments have the authority and obligation to protect the health and rights of their people.
- TAPS leads to increased tobacco consumption and smoking initiation, and is not intended merely to influence brand choice among current smokers.
- Tobacco use causes economic harm to individuals and families, as well as to communities and countries.
- Many governments ban or restrict advertising and promotion of other legal products (e.g. alcohol, firearms, medications) as part of consumer protection laws.
- Tobacco advertising is deceptive and misleading (76).
- The tobacco industry has a demonstrated pattern of targeting youth (10).
- The right of people to live a healthy life free of addiction is more important than the financial interests of the tobacco industry.

### **YOUTH EXPOSED TO SMOKING IN FILMS ARE MORE LIKELY TO TRY SMOKING (DATA FROM SIX EUROPEAN COUNTRIES)**



Source: (72).





# Effective legislation must be enforced and monitored

Government intervention through well-drafted and well-enforced legislation is required because the tobacco industry has substantial expertise in circumventing bans on TAPS activities (10). Despite industry opposition to such laws and regulations, they are easy to maintain and enforce if written carefully so that they are clear and unambiguous. Comprehensive bans on TAPS can be achieved by following the international best practice standards outlined in the guidelines for implementation of Article 13 of the WHO FCTC (see chapter "WHO Framework Convention on Tobacco Control") (5).

## Political will and public support are necessary

Political will at the highest levels of government is necessary to enact and enforce effective legislation, as well as to counter the inevitable opposition from the tobacco industry and the related groups

and businesses that benefit from TAPS expenditures. Enlisting the support of civil society and the public in favour of a ban can put pressure on the government to act. Support can be built by effectively countering claims by the tobacco industry, questioning the motives of tobacco sponsorship, and showing the impact of TAPS activities on tobacco consumption and health.

## Bans should be announced in advance of implementation

Policy-makers should announce bans on TAPS well in advance of implementation. This provides sufficient time for media outlets, event promoters and other businesses that benefit from TAPS expenditures to find new advertisers and sponsors. A complete ban is also more equitable, as it will not advantage one type of media or business over another.

## International and cross-border bans can be enforced

Legislation should include bans on incoming and outgoing cross-border advertising, such as tobacco advertising on international television and Internet sites, and sponsorship of international sporting and cultural events. Although bans on advertising in international media may be challenging under traditional regulatory models, it is feasible to prevent TAPS from crossing international borders (77). Many countries publish national editions of international newspapers and magazines that respect the laws of the countries in which they operate. Local Internet servers can block objectionable advertising provided by web sites located in other countries through geolocation and filtering technologies, as is currently done with other content deemed to be objectionable (e.g. pornography, online gambling). International satellite broadcasts can be

edited at a centralized downlink before being transmitted within a country, and telecommunications licensing provisions can require that TAPS activities be prohibited as a condition of issuance. International bans can also be achieved when culturally close countries simultaneously ban tobacco marketing, as is the case among many European Union countries (78).

## Legislation should be updated to address new products and industry tactics

Comprehensive bans on TAPS must be periodically updated to address innovations in industry tactics and media technology, as well as new types of tobacco products or cigarette substitutes (e.g. a type of oral tobacco known as "snus", and electronic cigarettes, which deliver nicotine through aerosol vapour rather than via smoke caused by ignition of tobacco).

Legislation should not include exhaustive lists of prohibited activities or product types, which can limit application of the law to new products not on the list. Instead, legislation should include the flexibility to allow for coverage of new products and future developments in communications technology and tactics without the necessity of passing revised legislation. Examples of prohibited TAPS activities are useful in legislation, provided it is clear that they are examples only.

Although the commercial Internet is now a quarter of a century old, it is still developing as a communications medium, and many tobacco companies have taken innovative approaches to using web sites to advertise and promote their products (79). The current explosion in social networking media is being exploited by the tobacco industry to promote its products to users of these emergent communications channels (80), who are generally younger and are often

still children or adolescents. For example, employees of British American Tobacco have aggressively promoted the company's products and brands on Facebook (the world's largest social media web site) by starting and administrating groups, joining pages as fans, and posting photographs of company events, products and promotional items, all of which undermine provisions of the WHO FCTC (81).

## Penalties for violations must be high to be effective

Financial penalties for violations of bans on TAPS activities must be high to be effective. Tobacco companies have large amounts of money, and are often willing to pay fines that are small in comparison to the additional business gained from TAPS. Substantial punitive fines and other sanctions are thus necessary to deter efforts to circumvent the law.

**Monitoring tobacco industry strategies that attempt to circumvent the law is important for establishing effective countermeasures.**



## Potential new areas for legislation

The WHO FCTC encourages countries to implement measures beyond the treaty obligations, a call that is reiterated in the text of Article 13 itself (5). Examples of other legislation to block TAPS activities under consideration by some countries include:

- *eliminating tax incentives.* TAPS activities can be reduced if companies are not allowed to take business tax deductions for these expenses, including price discounting and product giveaways, thus reducing financial incentives for these expenditures. Although this action has been proposed in the past (82), most recently by the US state of California (83), it has not yet been implemented.
- *requiring plain packaging.* Australia is, as of 1 December 2012, the first country to require plain (or standardized)

packaging of tobacco products; other countries including Ireland and New Zealand are considering similar legislation. Package design serves an increasingly critical role in promoting tobacco use as other TAPS activities are restricted or prohibited (84). Requiring plain packaging – without colour, pictures or distinctive typefaces, other than required health warnings – minimizes the ability to promote brands and can neutralize the value of individual brands (85).

## Monitoring of tobacco advertising, promotion and sponsorship activities is essential

TAPS activities should be monitored to ensure compliance with bans. Monitoring

tobacco industry strategies that attempt to circumvent the law is also important for establishing effective countermeasures. Monitoring and enforcement programmes should cover traditional media and marketing channels, as well as new and emerging advertising and promotional strategies, technologies and social trends (e.g. social networking). Ongoing monitoring can identify new types of TAPS activities that circumvent even the most clearly written comprehensive bans.

## Coordination with other government ministries and civil society organizations is important

To maximize the effectiveness of legislation or regulations enacted by legislatures and/or justice ministries or implemented

by executive order, coordination with a variety of government ministries, NGOs and civil society organizations is necessary. Examples of areas within government where coordination of activities is needed include:

- Health ministry (or other appropriate ministry/institution), to oversee the national tobacco control programme, including bans on TAPS; the government should designate an organization or public institution to monitor TAPS activities and the impact of bans, and report regularly to the health ministry and other government mechanisms that coordinate tobacco control activities.
- Justice ministry (or other appropriate law enforcement agency according to national law, e.g. agency for consumer protection), to enforce bans on TAPS.

- Finance ministry, to make reports on TAPS expenditures as required by the WHO FCTC (in countries where TAPS activities are not banned completely).
- Commerce ministry, to monitor and enforce bans on TAPS.
- Communications ministry, to monitor and enforce broadcast and Internet advertising bans.

Enlisting the support of civil society organizations is also important in successfully enacting and enforcing bans on TAPS activities. These include:

- media businesses;
- other business organizations, especially in industries targeted by the tobacco industry (e.g. sport, music, bars/nightclubs);

- retail organizations (especially for point-of-sale TAPS activities);
- youth organizations;
- NGOs involved with health, education, child protection, women's issues, human rights and other relevant social areas.



**To maximize the effectiveness of legislation, coordination with government ministries, NGOs and civil society organizations is necessary.**