

Special Populations I: *Adolescents and Members of Other Cultures*

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Disclosure

In the past 12 months, I have had no relevant financial relationships with the manufacturers of any commercial product or providers of commercial services discussed in this CME activity. I do not intend to discuss an unapproved or investigative use of a commercial product or device in my presentation.

Learning Objectives

- **At the conclusion of this session, participants will be able to:**
 - **Identify the unique risk factors of preteens and adolescents with regards to smoking initiation and the inability or reluctance to quit.**
 - **List concrete clinical interventions that can be undertaken with adolescents.**
 - **Describe the differences in tobacco use between the US and other nations.**
 - **Describe the need for additional research into the smoking behaviors of adolescents.**

Adolescent Tobacco Use

- **Active Smoking**
 - Variable prevalence worldwide
 - Starts at younger ages
 - Rising prevalence among females
 - Serious short and long term health consequences
- **Secondhand Smoke (SHS) Exposure**
 - Serious health risk
 - Highly prevalent in some countries
 - Can be chronic

Onset of Tobacco Use

- Every day 100,000 children begin smoking; mainly in developing countries.
- 17% of teens aged 13-15 use tobacco
- 25% begin to smoke before age 10



Global Prevalence Adolescent Tobacco Use

TABLE. Global Youth Tobacco Survey measures of tobacco use prevalence among students aged 13–15 years, by sex and World Health Organization (WHO) region, 1999–2005^a

WHO region	Current use of any tobacco products			Current cigarette smoking			Current other tobacco ^b use		
	Girls	Boys	Total	Girls	Boys	Total	Girls	Boys	Total
	% (95% CI) [†]	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Africa	13.9 (±3.1)	19.7 (±3.9)	16.8 (±2.7)	5.8 (±2.3)	13.0 (±3.6)	9.2 (±2.2)	9.9 (±2.6)	10.9 (±2.9)	10.5 (±2.2)
Americas	20.4 (±2.8)	24.0 (±3.0)	22.2 (±2.4)	17.5 (±2.6)	17.4 (±2.7)	17.5 (±2.3)	7.8 (±1.6)	14.8 (±2.2)	11.3 (±1.5)
Eastern Mediterranean	11.3 (±3.3)	18.8 (±3.6)	15.3 (±2.6)	3.2 (±2.1)	6.7 (±2.3)	5.0 (±1.7)	9.9 (±2.6)	15.6 (±3.2)	12.9 (±2.3)
Europe	17.0 (±3.2)	22.3 (±4.3)	19.8 (±3.2)	15.7 (±3.1)	19.9 (±3.8)	17.9 (±2.7)	6.0 (±2.0)	10.0 (±3.3)	8.1 (±2.3)
South-East Asia	7.1 (±2.4)	18.4 (±4.1)	12.9 (±2.7)	1.9 (±0.9)	5.8 (±1.7)	4.3 (±1.2)	8.4 (±1.6)	16.4 (±1.4)	13.3 (±1.0)
Western Pacific	7.8 (±2.0)	15.0 (±2.8)	11.4 (±1.9)	3.3 (±1.2)	9.9 (±2.8)	6.5 (±1.6)	5.4 (±1.5)	7.7 (±1.6)	6.4 (±1.2)
Total	14.3 (±2.8)	20.1 (±3.4)	17.3 (±2.5)	6.7 (±1.7)	10.5 (±2.4)	8.9 (±1.7)	7.8 (±1.8)	13.8 (±2.1)	11.2 (±1.5)

^a Regional aggregations were calculated as means weighted by the population of the sampling frame. In many cases, the sampling frame was the country, but in areas where samples were drawn to be representative of a subnational population, estimates were weighted by the population of the city, state, or administrative region.

[†] Confidence interval.

^b Including chewing tobacco, snuff, dip, cigars, cigarillos, little cigars, pipes, and shisha (flavored tobacco smoked in hookah pipes).

Patterns of Adolescent Tobacco Use

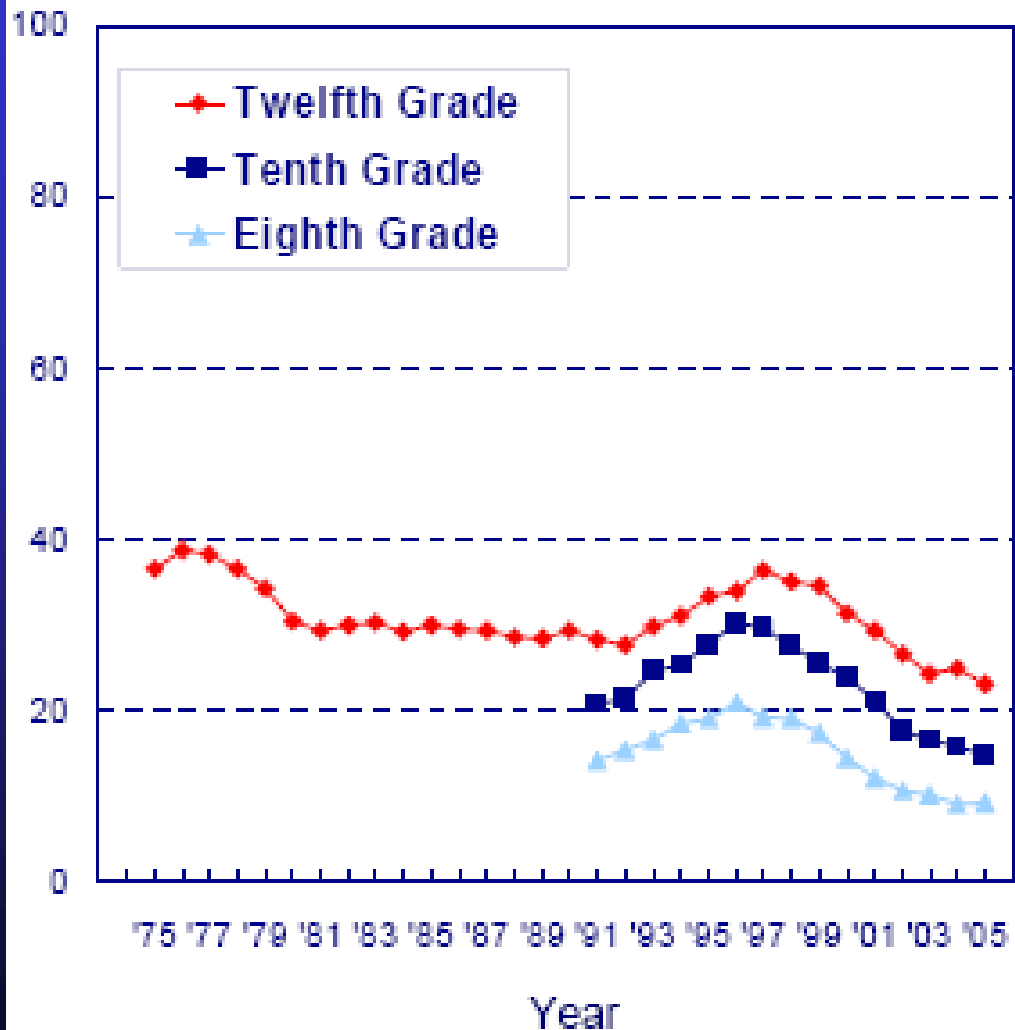
- In Uruguay, Mexico, the Czech Republic, Romania, Vietnam, Indonesia, Canada, Argentina and the US, youth use cigarettes more than other forms of tobacco
- In India, Nepal, Botswana, Tanzania, Zambia, and Nigeria, youth use a tobacco product other than cigarettes (by a ratio of 2:1 or 3:1)
- In Indonesia, Nepal, Thailand, China, much of India, and other countries, far fewer girls use tobacco than boys
- In Chile and Argentina more girls use tobacco than boys

Adolescent Tobacco Use in the US

- About 4,000 children and adolescents under age 18 smoke their first cigarette each day
- 1,200 children and adolescents become daily cigarette smokers
- 90% of adults tried their first cigarette before age 21
- In 2006, 3.3 million U.S. adolescents aged 12-17 were current users of tobacco products and 2.6 million were current cigarette smokers

Use

% who used in past 30 days



Use Is Declining

However, the use of smokeless tobacco has increased.

Even if current patterns persist, an estimated 6.4 million youth will die prematurely from a tobacco use-related disease

Use Begins in Middle School

Middle School

- 8.1% of students
- Females (8.6%) > males (7.7%)
- Hispanic (9.4%) > Caucasian (8.3%) > African-American (7.5%) >> Asian (2.2%)

High School

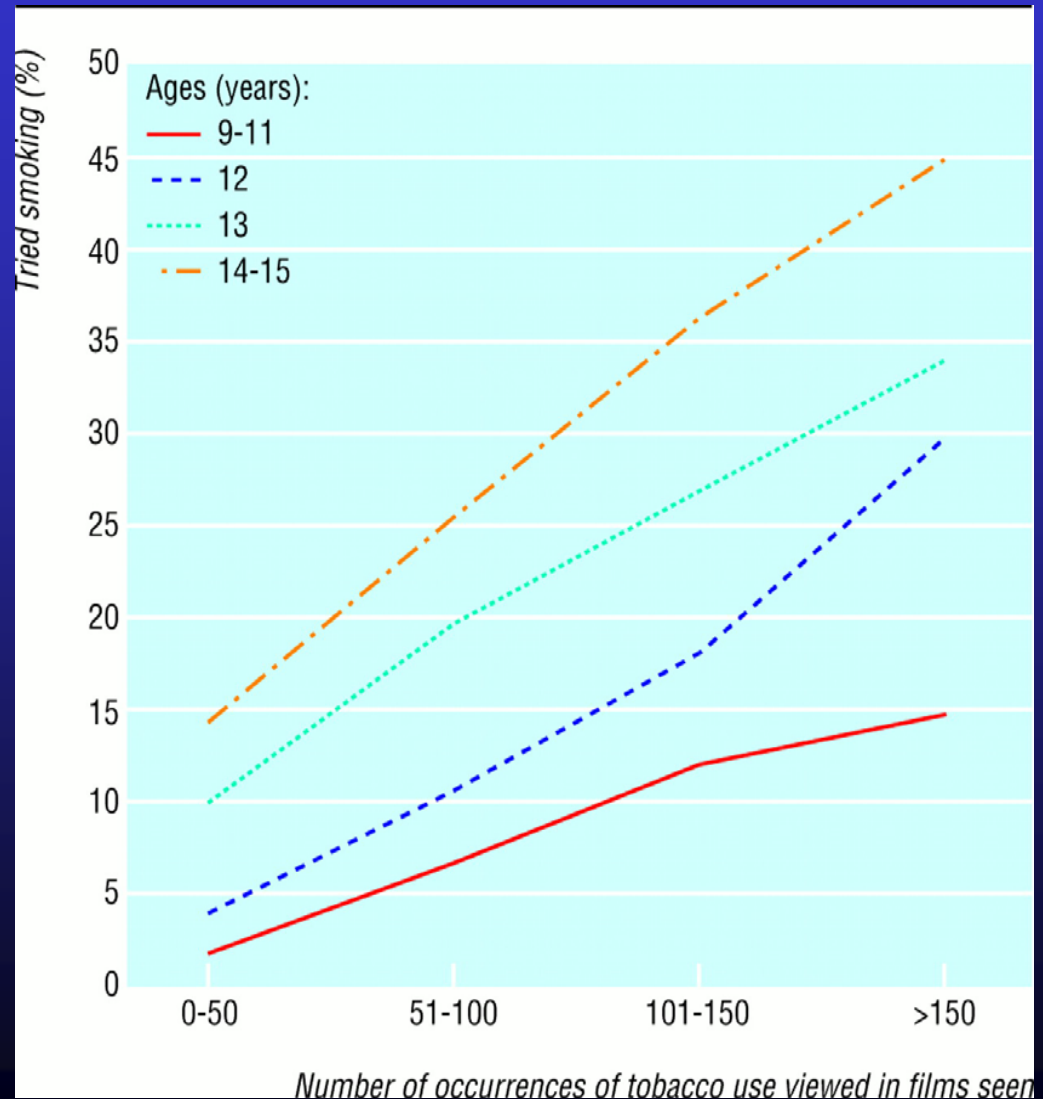
- 21.7% of students
- Females (22.4%) > males (22.1%)
- Caucasian (25.4%) > Hispanic (21.6%) > African-American (11.4%) > Asian (11.2%)

Risk Factors for Tobacco Experimentation and Use

- Friends who smoke
- Parents' behaviors and attitudes
- Comorbid psychiatric disorders
 - Anxiety, ADHD, substance abuse
- Concerns about weight gain

Why Do They Smoke?

- Advertising, movies, media
- Social, parental norms
- Weight control
- Curiosity
- Peer influence
- Comorbidities
- **ADDICTION**



Media and Advertising

“Tobacco is a communicated disease.
It is communicated through
advertising and sponsorship.”

Dr. Gro Harlem Brundtland (2000)
Former Director-General of WHO

Tobacco Industry Recruiting

- **Industry needs to recruit 5,000 new customers each day in the US alone**
 - **“... the base of our business is the high school student ...” - Lorillard (1976)**
 - **“... the 14–18 year old group is an increasing segment of the smoking population. R.J. Reynolds must soon establish a successful new brand in this market if our position in the industry is to be maintained in the long term.” - R.J. Reynolds (1976)**

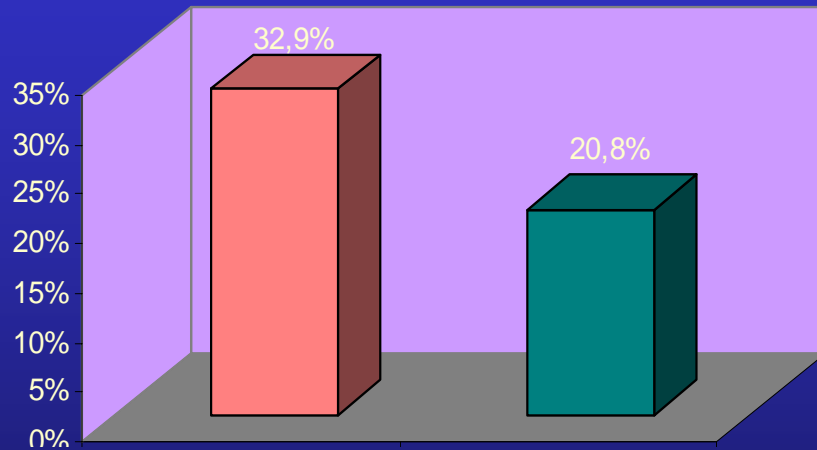
Encouraging Child and Adolescent Tobacco Use

- Flavored cigarettes
- Candy cigarettes
- Promote sales of single cigarettes
- Decrease prices
- Encourage female smokers
- Product placement in movies, others
- Sport and event sponsorship
- Brand stretching
- Public relations

Perceived “Benefits” of Smoking

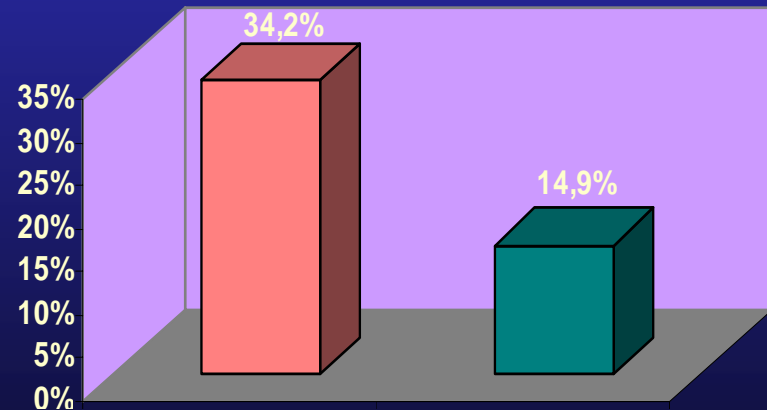
- Achieving a “cool” lifestyle
- Being successful
- Being independent and action-oriented
- Taking a vacation and having fun
- Calming effect in social situations
- Easier to make friends
- Relieves depression
- Suppresses hunger

Data from Buenos Aires GYT Survey: Tried Smoking



One parent smokes

$P < 0.001$



Smoking is allowed in home

Smoking and Weight Concerns in Argentina

Variable	Females (<i>n</i> = 544)				Males (<i>n</i> = 470)			
	With difficulty (%)	Without difficulty (%)	OR	95% CI	With difficulty (%)	Without difficulty (%)	OR	95% CI
Smoke to avoid eating	32.2	14.0	2.04	1.37 - 3.03	19.0	8.5	2.00	1.10 - 3.61
Continue smoking to keep weight down	21.5	11.5	1.93	1.02 - 3.70	8.2	5.8	1.22	0.48 - 3.10

Health Consequences of Youth Tobacco Use

- Worst health
- Respiratory symptoms
- Decreased performance, endurance
- Cholesterol
- Caries, bad breath
- Depression
- Conduct disorders
- Gateway drug (8x marijuana; 22x cocaine)
- Bad school performance
- More health services and medication utilization
- Long term: cancer

Why Was Teen Cessation Neglected?

- Prevention more effective than cessation
- Adolescents not “dependent”
 - Could quit smoking whenever they wanted
- Adolescents not interested in quitting
- Adapt adult programs

Teen Tobacco Addiction

- Dependence more severe if use begins in adolescence
- Those who begin as teens more likely to be dependent, use for more years, and use more heavily
- Increased vulnerability may be due to still-developing brain

Addiction Develops Quickly

- **Among youth who develop dependence**
 - 10% report symptoms after first cigarette
 - 25% have symptoms within 2 weeks
- **Withdrawal symptoms may appear before onset of daily smoking**
 - Almost always before smoking progresses to 5/day
- **Animal experiments confirm that nicotine induces enduring neurophysiologic adaptations from the first dose**

Adolescent Cessation

- Youth underestimate the addictive potential of nicotine
- Think they can quit at any time
 - Only 4 % of smokers age 12-19 quit annually
 - Rate of failed adolescent quit attempts exceeds that of adults
- Quit attempts rarely planned
- Choose unassisted quit methods
 - Young people who enroll in cessation programs twice as likely to succeed

Adolescents Want to Quit

- **Worldwide**
 - 69% want to quit
- **In the US**
 - 82% thinking about quitting
 - 77% made a serious quit attempt in the past year
- **In Argentina**
 - 50% want to quit
 - 63% made a serious quit attempt in the past year

2008 PHS Recommendations

- **Clinicians should ask pediatric and adolescent patients about tobacco use and provide a strong message regarding the importance of totally abstaining from tobacco use**
- **Counseling has been shown to be effective in treatment of adolescent smokers; adolescents should be provided counseling interventions to aid them in quitting smoking**

Many Windows of Opportunity

- Adolescent smokers are identified and counseled to quit
 - 33-55% of physician visits
 - ~20% of dental visits

Effectiveness of and Estimated Abstinence Rates

Adolescent Smokers	Arms	OR (95% CI)	Abstinence Rates (95%CI)
Usual care	7	1	6.7
Counseling	7	1.8 (1.1-3)	11.6 (7.5 -17.5)

2008 Meta-analysis of 7 studies

What Should We Do?

- **Smoke free clinic – inside AND out**
- **Learn and support public health measures for tobacco control**
 - Smoke free places
 - Price increases
 - No sales to minors
 - Ban advertising
- **Capacity building**
 - Health care providers, others

What Should We Do: Counseling Parents

Advise parents to

- **Express disapproval of tobacco use**
- **Discourage friends who are smokers**
- **Keep the home smoke free – even if parents smoke**
- **Make tobacco products inaccessible**
- **Limit access to R-rated movies**

How Do We Assess Teens?

- Interview alone (confidentiality)
- Ask about tobacco use at every visit
- For tobacco users:
 - Ask about consumption (since when, what, how much, where, why)
 - Ask about quitting attempts (how many times, how)
 - Document
 - Use tools to evaluate dependency
 - Biomarkers
 - Expired CO

HONC (10 items) “Physical Dependency”

- Two basic questions:
 - Has s/he lost autonomy?
 - If positive, what kind of dependency does s/he have?
- One positive answer means the adolescent is 29 times more likely to fail when trying to quit

Treatment Options

- **Psychosocial interventions**
- **Self help (internet, sms)**
- **Quit lines**
- **Pharmacological treatment**

Cochrane 2006

- Case control studies
- Younger than 20 years old
- Different interventions
- 15 studies: 3,600 adolescents
- None of the pharmacological studies were statistically significant
- Motivational Interventions had a pooled OR of 2.05

Predictors of Treatment Success

- Non-smoking home
- Less psychological and pharmacological dependency
- Do not see themselves smoking in the future
- Have antismoking beliefs
- Optimistic about the future

Characteristics of Successful Programs

- Easy access
- Constant support
- Constant motivation to quit
- Help with ambivalence
- Entertaining
- Not structured

What Do Teens Want?

- **Canadian study of 26,400 students**
- **About 2,500 smokers wanted to quit but...**
 - **Most said they would not use a specific method**
 - **They would do it on their own**
 - **In the meantime they would smoke “light” cigarettes**

Research Needs

- **Effectiveness of the 5 A's to treat adolescents**
- **Safety and effectiveness of medications including bupropion SR, NRT, varenicline, and nicotine vaccine**
- **Effectiveness of adolescent counseling interventions**
- **Effectiveness of child-focused versus family-focused or peer-focused interventions**
- **Effectiveness and appeal of the Internet, quitlines, SMSs as new channels to reach adolescents**

New Challenges

- In several countries, smoking is higher among women
- Smoking is targeted to low-income people
- Low cigarette prices
- Smoking in movies
- Corporate “social responsibility”



Resources

- **Youth Tobacco Cessation: *A Guide for Making Informed Decisions*. 2004**
- **American Academy of Health Behavior. Special Issue on Youth Tobacco Cessation. *American Journal of Health Behavior* 2003;27(suppl 2).**
- **<http://www.hysq.org>**
- **<http://www.teenquit.com>**



Thank you!