

# **Searching for the Hard-Core Smoker in U.S. Population-Based Surveys**

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Angela Trosclair M.S.; Jun Yang, M.S.**

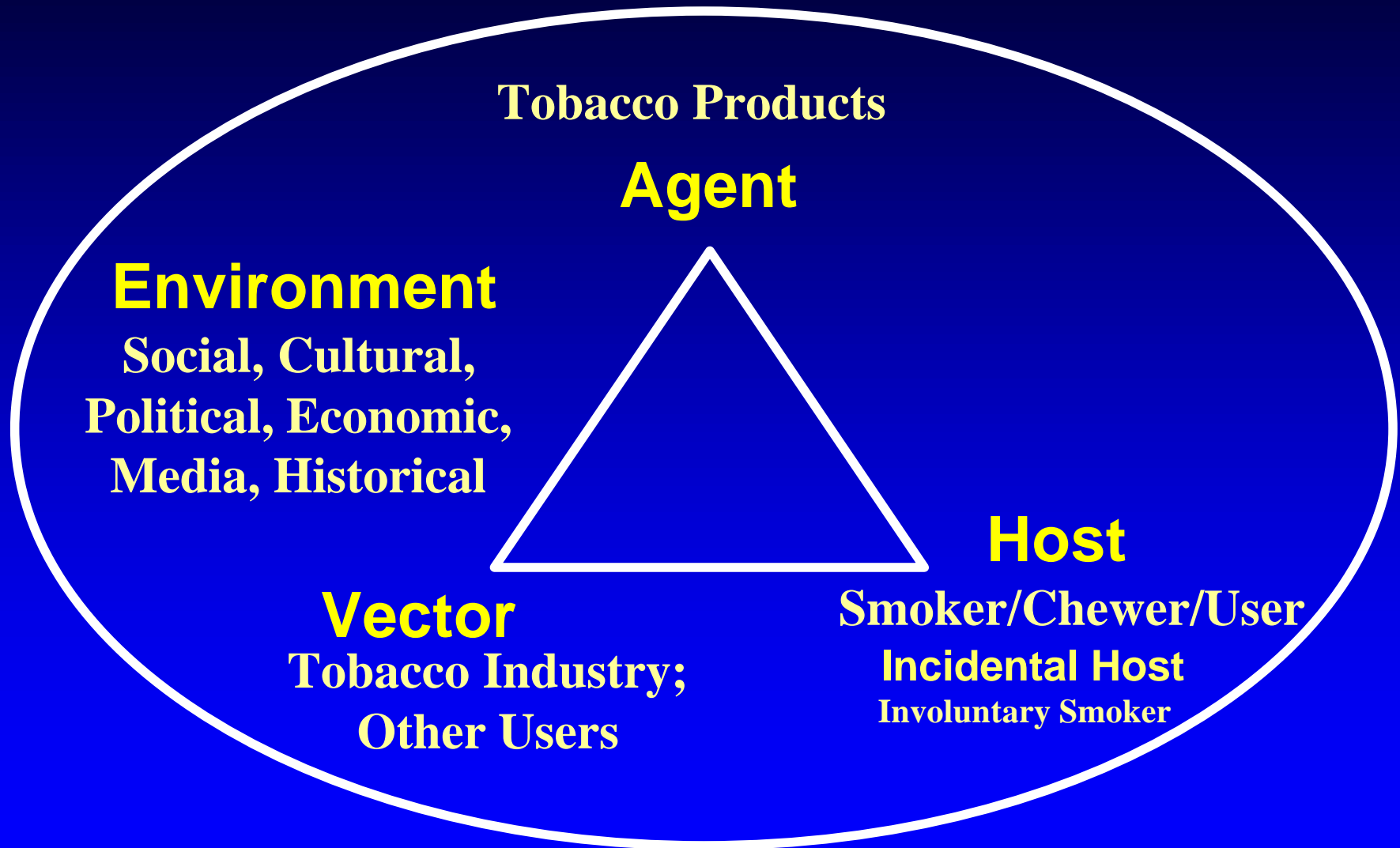
**Hardening the Target: Are Smokers Less Likely to Quit Now Than in the Past?  
Symposium**

**8<sup>th</sup> Annual Meeting of the Society for Research on Nicotine and Tobacco**

**Savannah, Georgia**

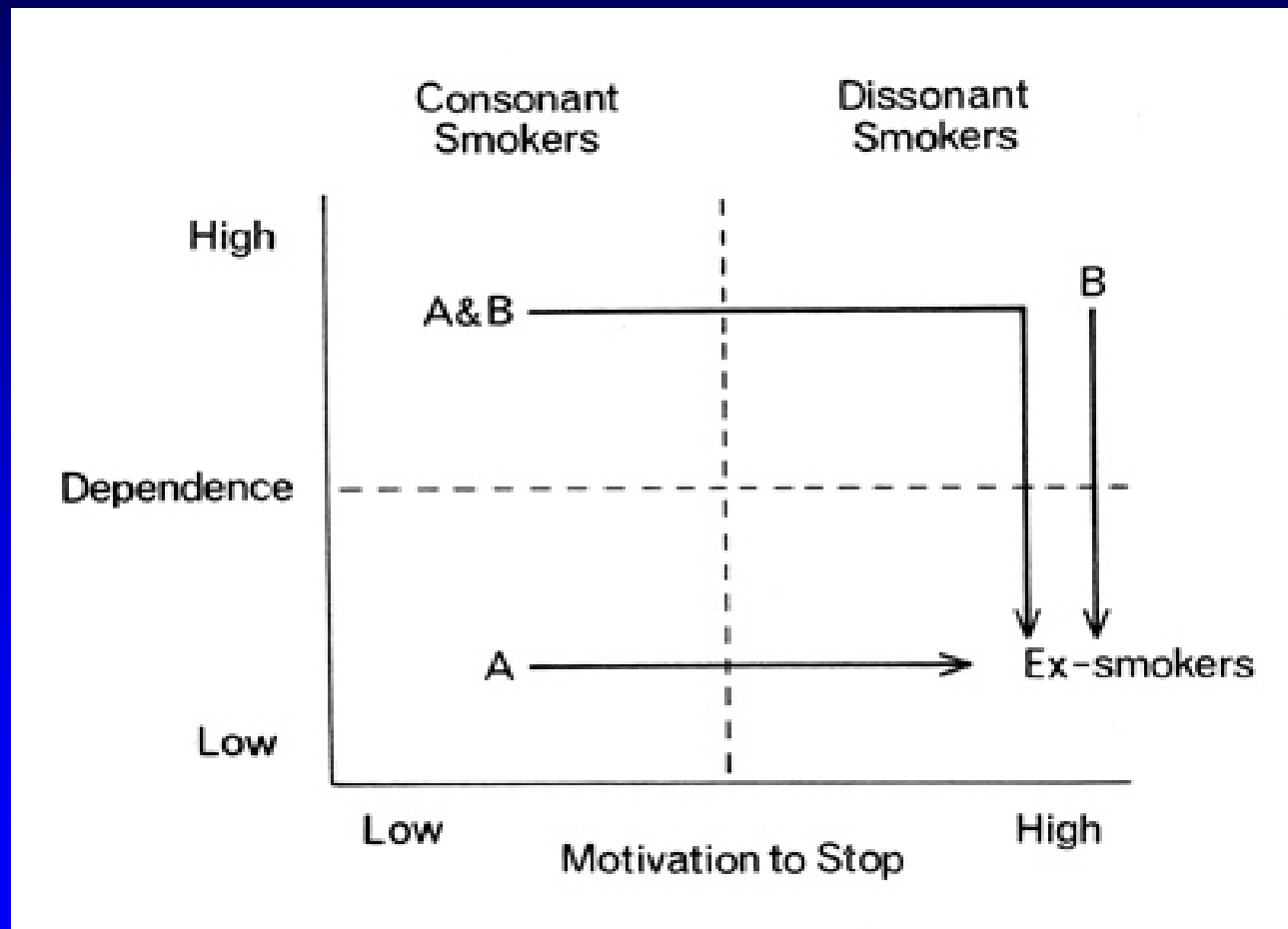
**February 20, 2002**

# Tobacco Control Model of Nicotine Addiction



Adapted from: Orleans & Slade, 1993

# Russell's Motivation/Dependence Model of Quitting



Source: Progress in Smoking Cessation; Schwartz JL (ed); ACS/WHO, 1978

# Optimal Methodologies

- Serial cross sectional AND rolling cohorts
- National and state-specific
- Measuring
  - Tobacco use behaviors
  - Dependence
  - Motivation
  - Co-Morbidities
  - Efficacy, stress, coping skills
  - Appropriate biomarkers

# Current Surveys

- National Health Interview Survey
- Current Population Survey NCI Tobacco Use Supplements
- Monitoring the Future Survey
- National Household Survey on Drug Abuse

# Current Measures

- Smoking prevalence
- Cigarettes smoked each day
- Percent of smokers who smoke on some days
- Prevalence of cessation (quit ratio)
- Indicators of dependence
- Binge drinking
- Marijuana use
- Interest in quitting
- Selected demographics

# Outline of Today's Presentation

- Educational profile of smokers
- National trends in smoking, cigarettes per day, and quitting
- Indicators of dependence
- State-specific analyses
- Trends in current binge drinking and marijuana use across smoking status
- Interest in quitting

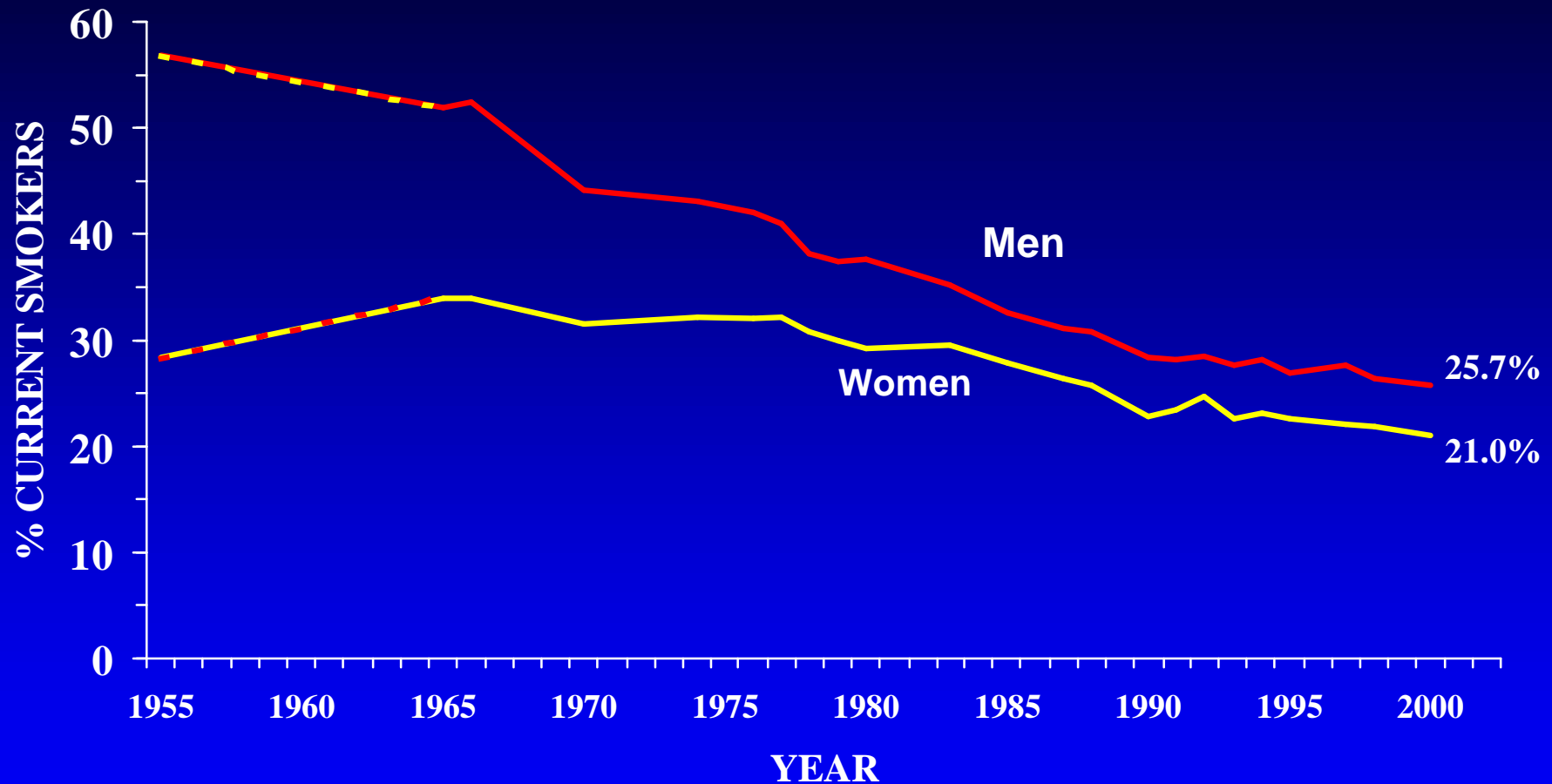
## Years of Education by Cigarette Smoking Status – United States, Ages 25+ Years, 1970 and 2000

	<u>Years of Education</u>				
	$\leq 8$	9-11	12	13-15	$\geq 16$
<u>Current</u>					
1970	23.5	21.7	35.0	11.1	8.7
2000	6.2	15.4	38.9	26.7	12.8
<i>1970/2000</i>	<i>3.8</i>	<i>1.4</i>	<i>0.9</i>	<i>0.4</i>	<i>0.7</i>
<u>Former</u>					
1970	24.2	16.7	32.3	11.6	15.2
2000	7.2	10.6	29.6	27.7	24.8
<i>1970/2000</i>	<i>3.4</i>	<i>1.6</i>	<i>1.1</i>	<i>0.4</i>	<i>0.6</i>
<u>Never</u>					
1970	30.9	15.7	32.0	9.9	11.5
2000	7.2	8.1	27.3	26.4	31.0
<i>1970/2000</i>	<i>4.3</i>	<i>1.9</i>	<i>1.2</i>	<i>0.3</i>	<i>0.4</i>

Source: 1970 and 2000 National Health Interview Surveys, National Center for Health Statistics



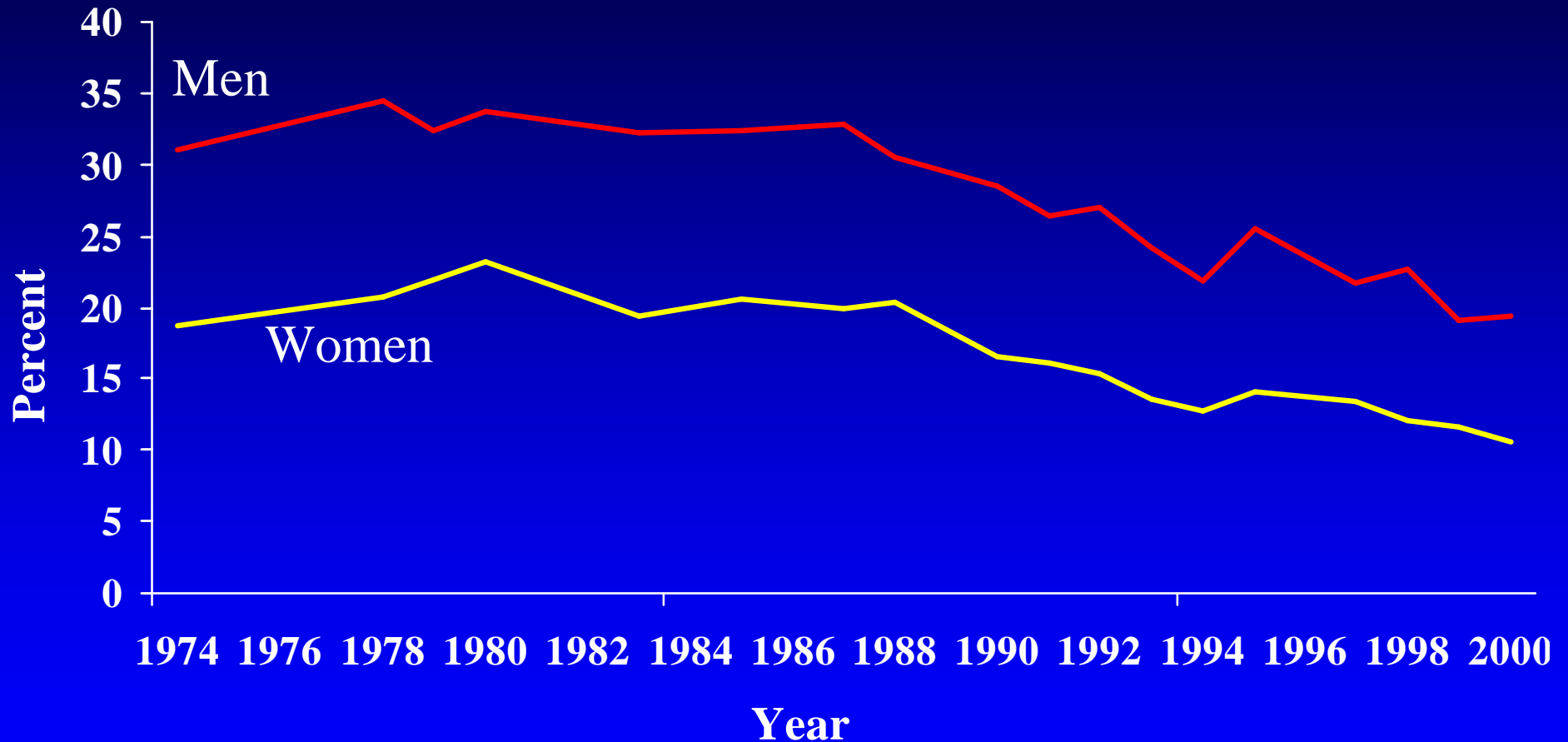
# Trends in cigarette smoking\* among adults aged $\geq 18$ years, by sex - United States, 1955-2000



\*Before 1992, current smokers were defined as persons who reported having smoked  $\geq 100$  cigarettes and who currently smoked. Since 1992, current smokers were defined as persons who reported having smoked  $\geq 100$  cigarettes during their lifetime and who reported now smoking every day or some days.

Source: 1955 Current Population Survey; 1965-2000 National Health Interview Survey.

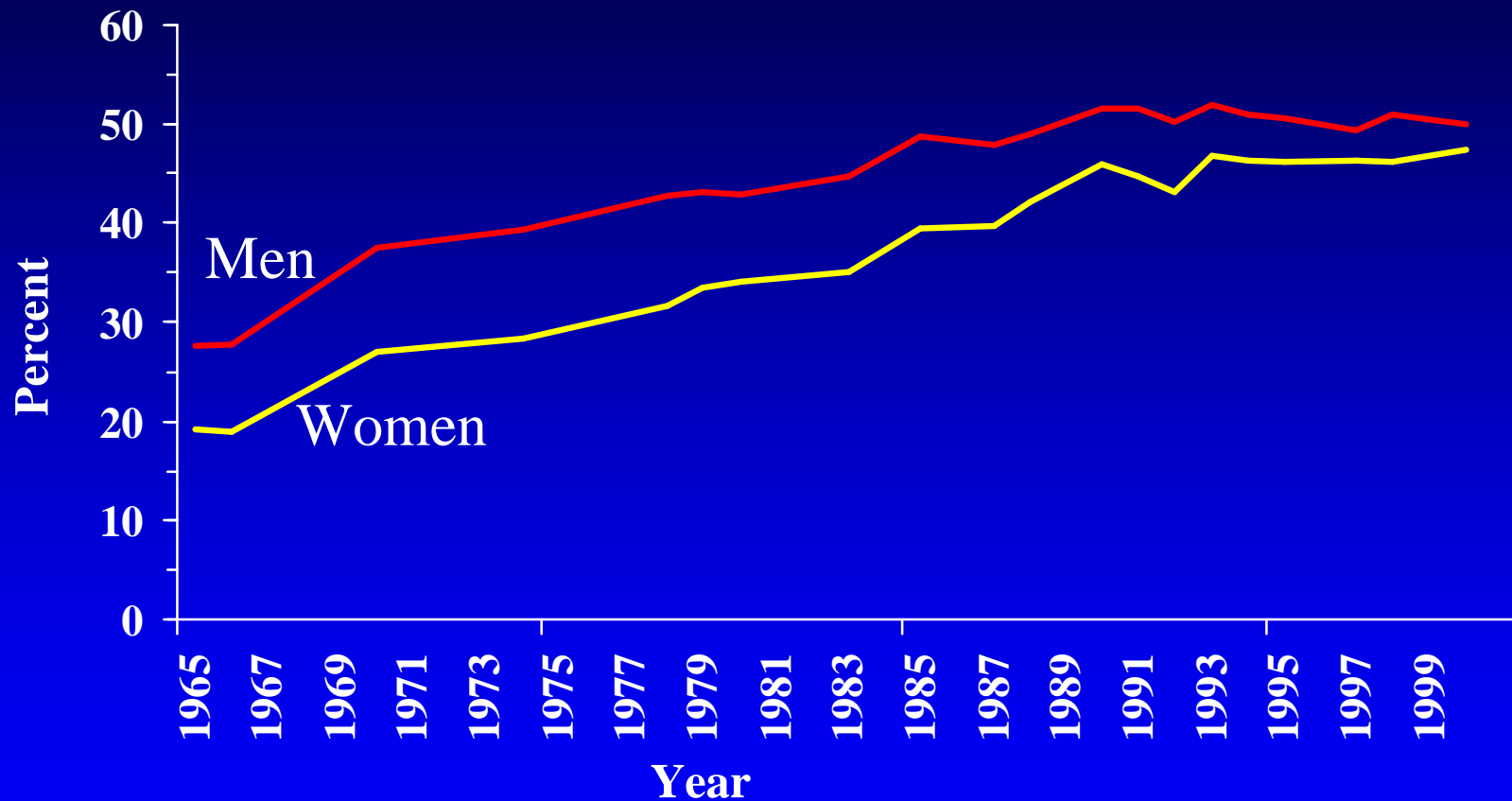
# Heavy Cigarette Smoking\* Among Adults Aged 18+ by Gender – United States, 1974 -2000



Source: NHS, 1974-2000

\*Smoking 25+ cigarettes per day

# Percentage of Ever Smokers\* Who Have Quit<sup>+</sup>, Adults Aged $\geq 18$ Years, by Sex-United States, 1965 - 2000



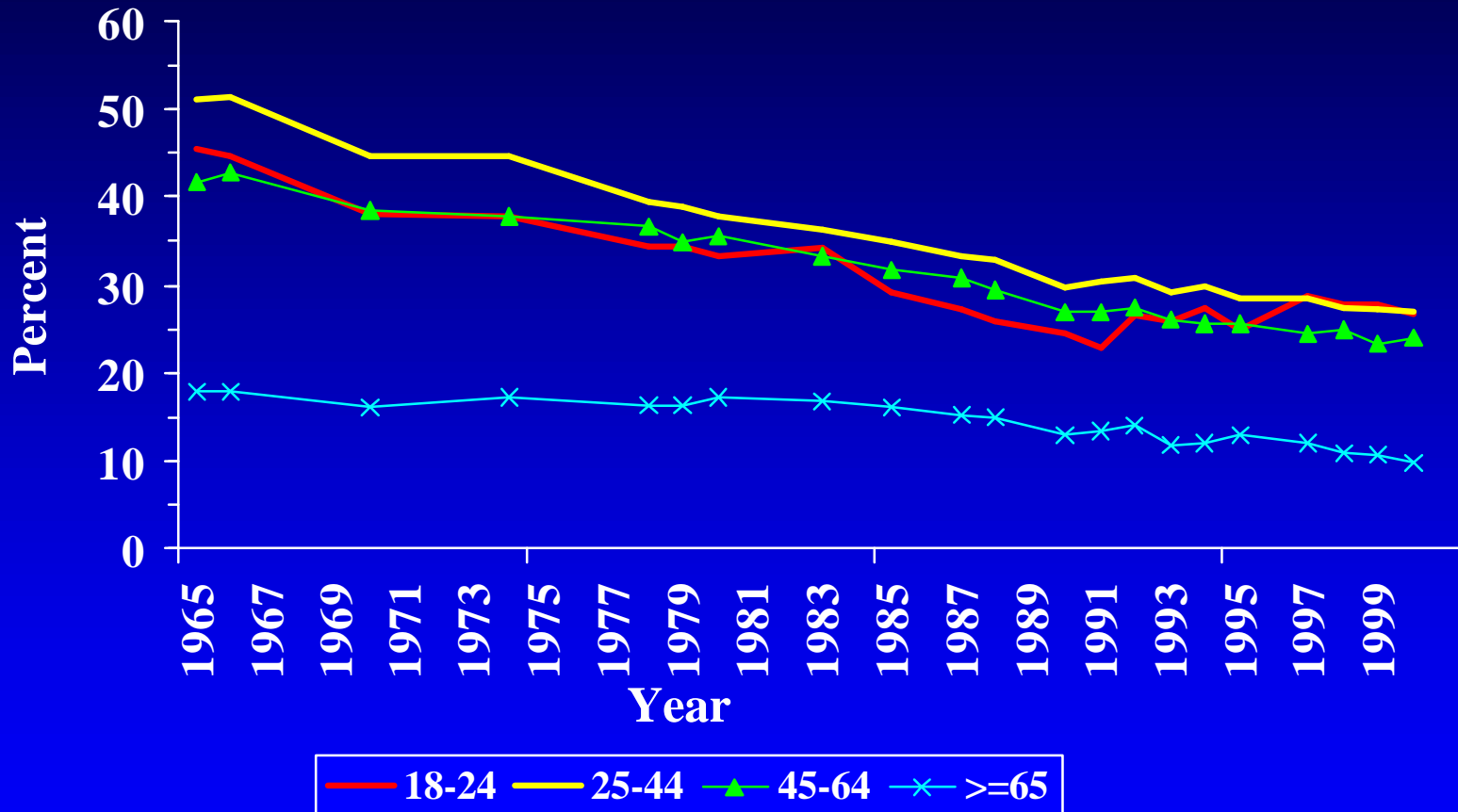
Source: National Health Interview Surveys, 1965-2000

Centers for Disease Control and Prevention: National Center for Health Statistics and Office on Smoking and Health.

\*Ever-smoked  $\geq 100$  cigarettes,

<sup>+</sup>Also known as the quit ratio. Note: estimates since 1992 incorporate same-day smoking

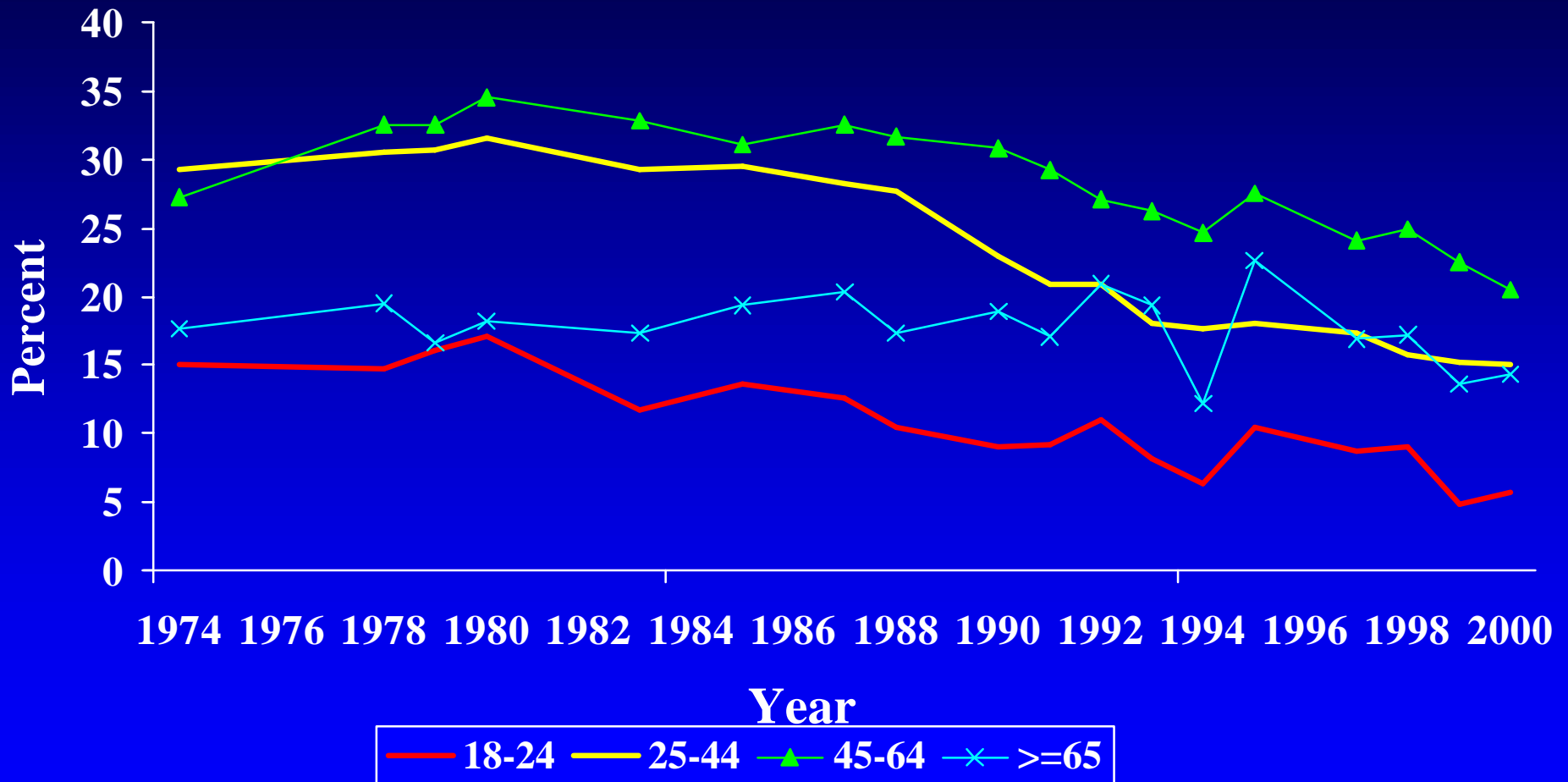
# Trends in cigarette smoking\* by age - United States, 1965-2000



\*Before 1992, current smokers were defined as persons who reported having smoked  $\geq 100$  cigarettes and who currently smoked. Since 1992, current smokers were defined as persons who reported having smoked  $\geq 100$  cigarettes during their lifetime and who reported now smoking every day or some days.

Source: various National Health Interview Surveys from 1965 - 2000, National Center for Health Statistics

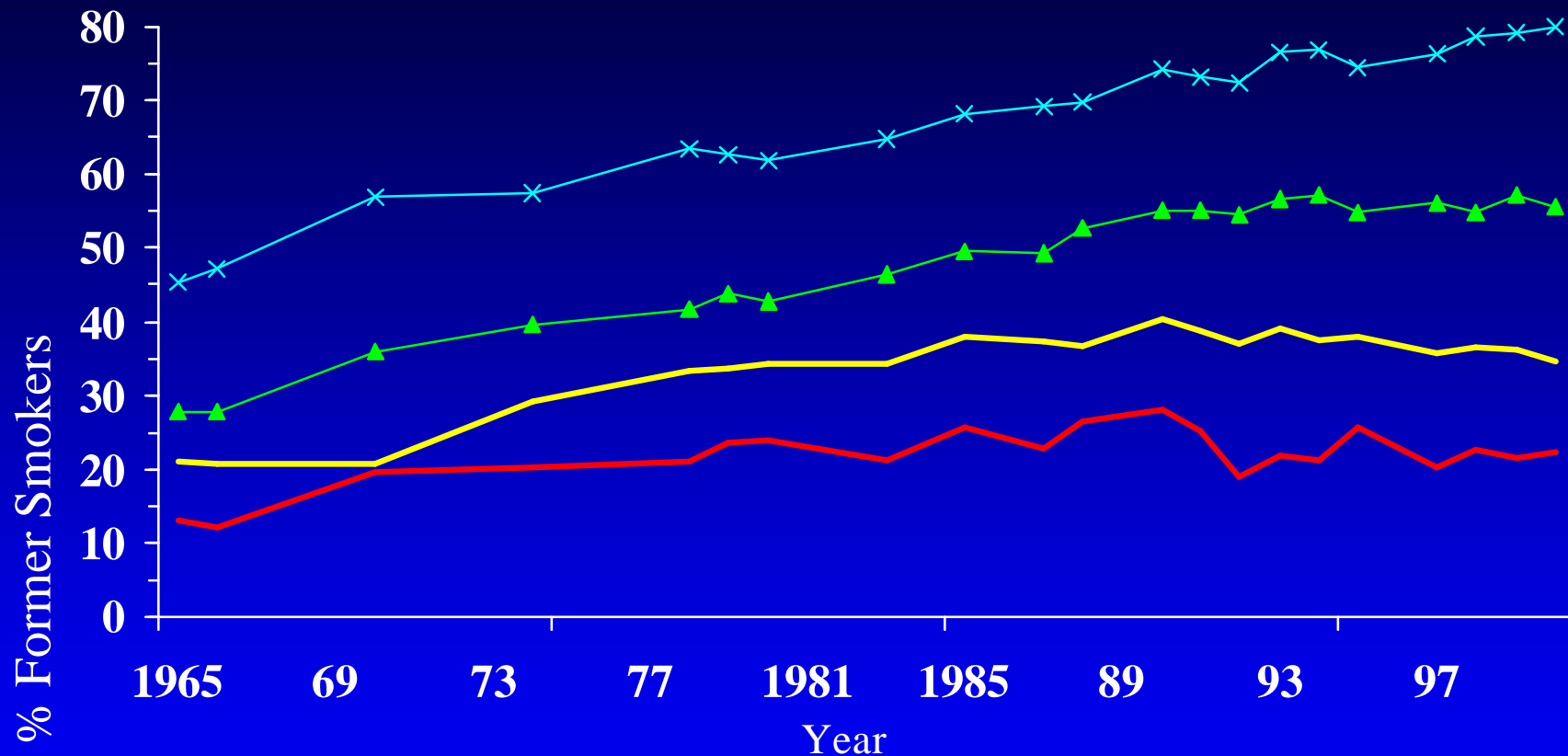
# Heavy Cigarette Smoking\* Among Adults, by Age – United States, 1974 -2000



Source: NHS, 1974-2000

\*Smoking 25+ cigarettes per day

# Percentage of Ever Smokers\* Who Have Quit<sup>†</sup>, by Age – United States, 1965 -2000



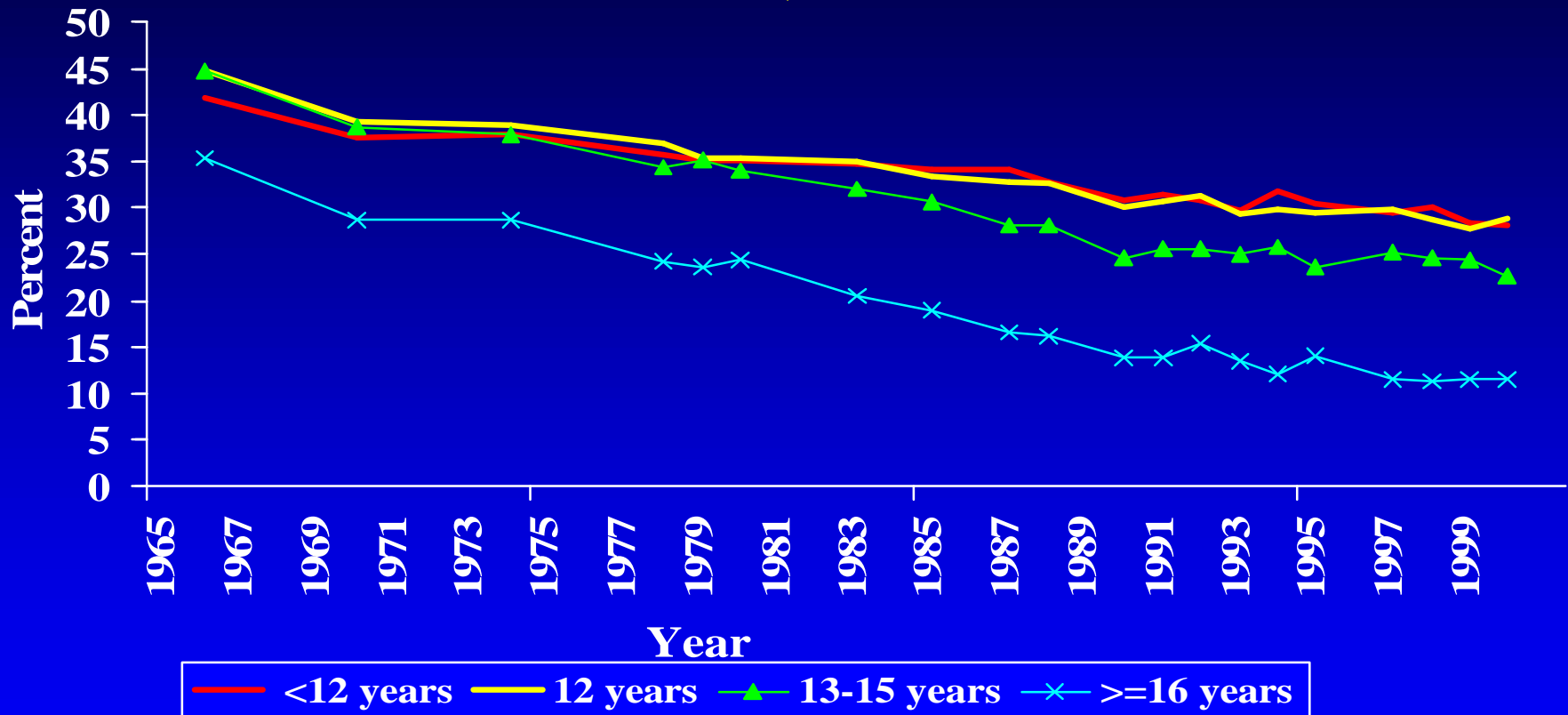
— 18-24    — 25-44    —▲ 45-64    —× ≥65

Source: National Health Interview Surveys, 1966 -2000

\*Ever-smoked 100 + Cigarettes

<sup>†</sup>Also known as the “quit ratio”, estimates since 1992 incorporates same-day smoking

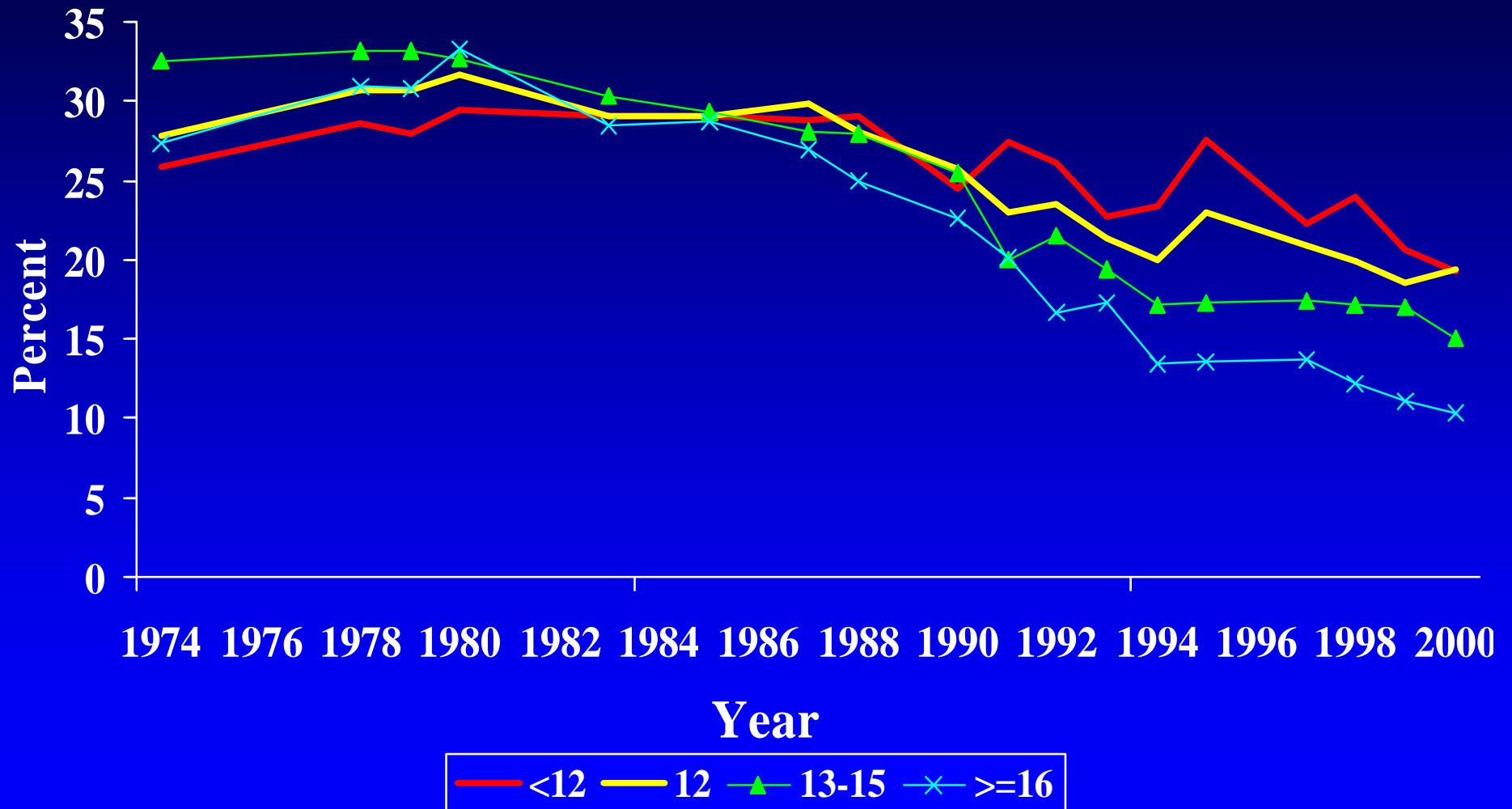
# Trends in cigarette smoking\* among adults aged $\geq 25$ years, by education- United States, 1965-2000



\*Before 1992, current smokers were defined as persons who reported having smoked  $\geq 100$  cigarettes and who currently smoked. Since 1992, current smokers were defined as persons who reported having smoked  $\geq 100$  cigarettes during their lifetime and who reported now smoking every day or some days.

Source: various National Health Interview Surveys from 1965 - 2000, National Center for Health Statistics

# Heavy Cigarette Smoking\* Among Adults Aged 25+ by Education – United States, 1974 -2000

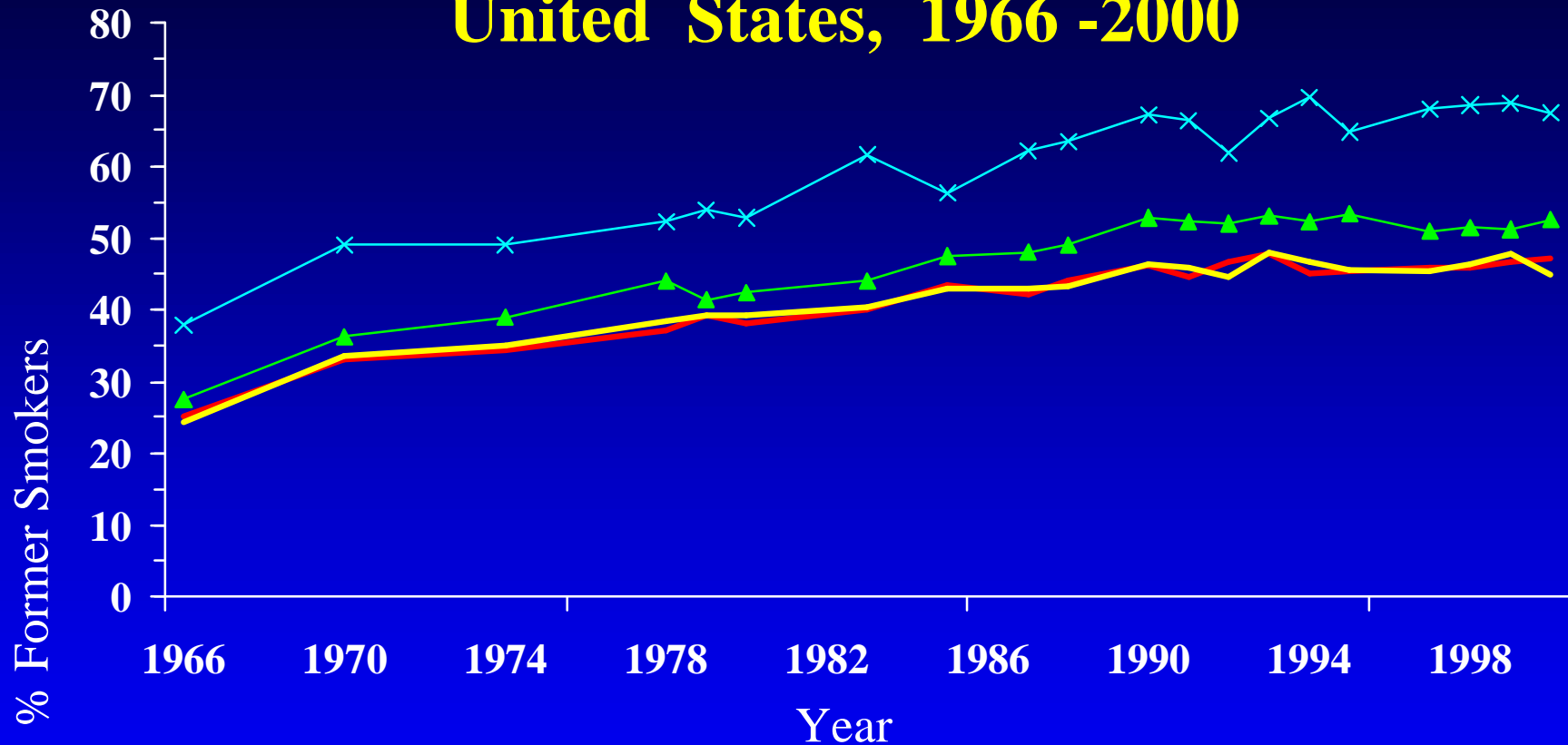


Source: NHS, 1974-2000

\*Smoking 25+ cigarettes per day



# Percentage of Ever Smokers\* Who Have Quit<sup>†</sup>, by Education, Adults Aged $\geq 25$ Years – United States, 1966 -2000



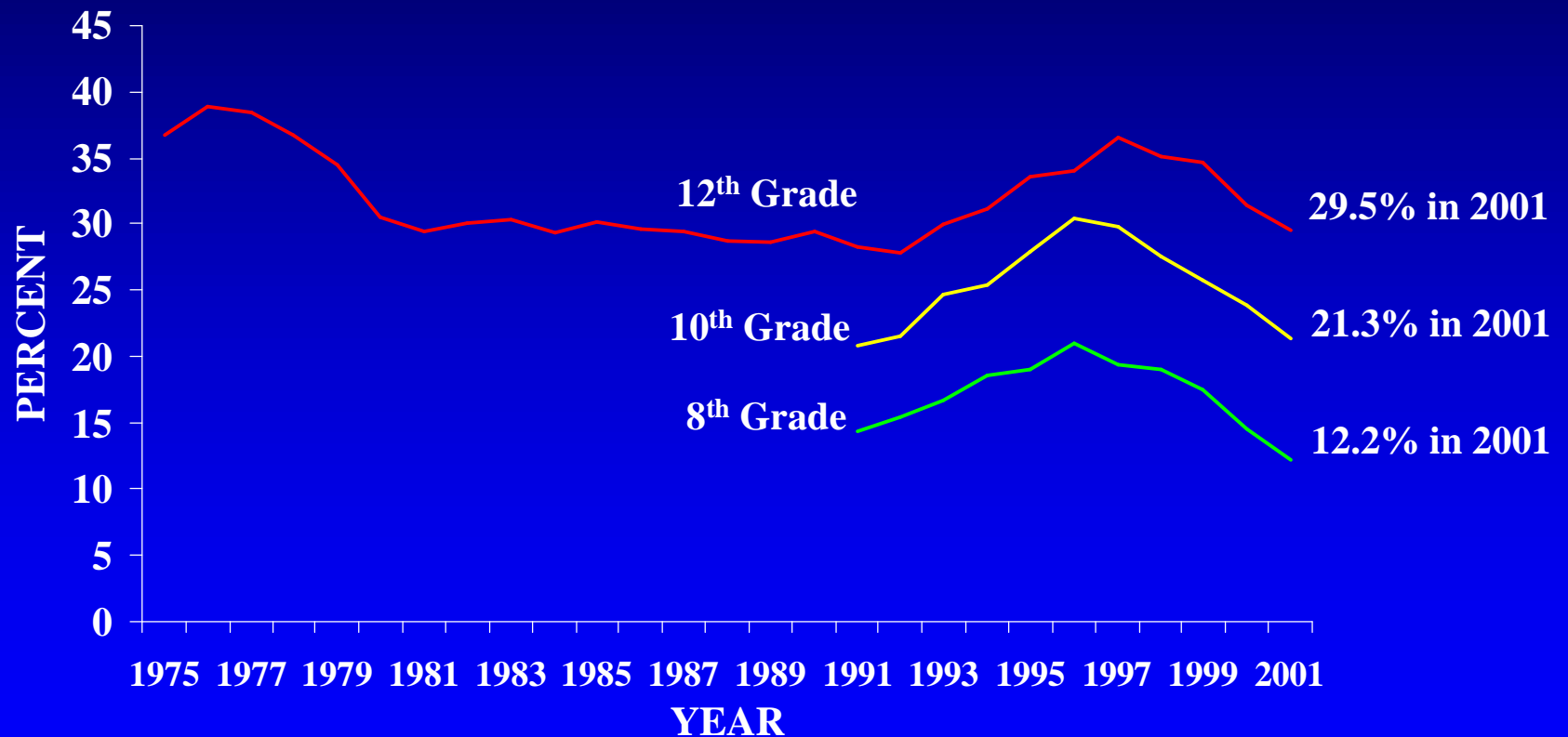
— <12    — 12    —▲ 13 - 15    —× >= 16

Source: National Health Interview Surveys, 1966 -2000

\*Ever-smoked 100 + Cigarettes

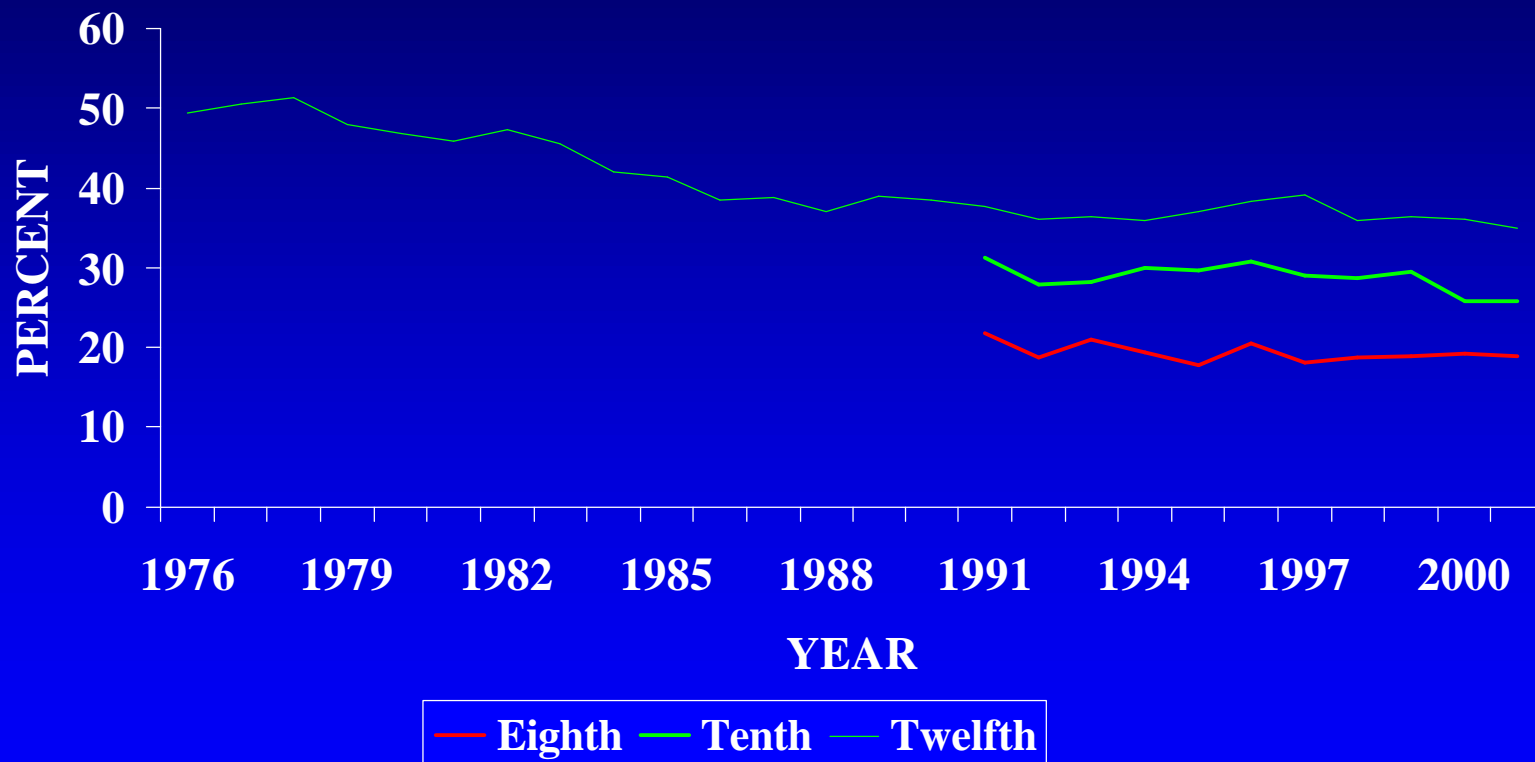
<sup>†</sup>Also known as the “quit ratio”, estimates since 1992 incorporates same-day smoking

# Trends in Cigarette Smoking Anytime in the Past 30 days by Grade in School – United States, 1975-2001



Source: Institute for Social Research, University of Michigan, Monitoring the Future Surveys

# Trends in Prevalence of 1/2 Pack per Day Smoking among Past Month Smokers, by Grade – United States, 1976-2001



Source: Institute for Social Research, University of Michigan, Monitoring the Future Surveys

# Indicators of Dependence

- 1985 – 1994 National Household Survey on Drug Abuse items
- Three indicators (assessed for previous 12 months):
  - Felt dependent on cigarettes
  - Needed more cigarettes to get the same effect
  - Felt sick when cut down on cigarettes

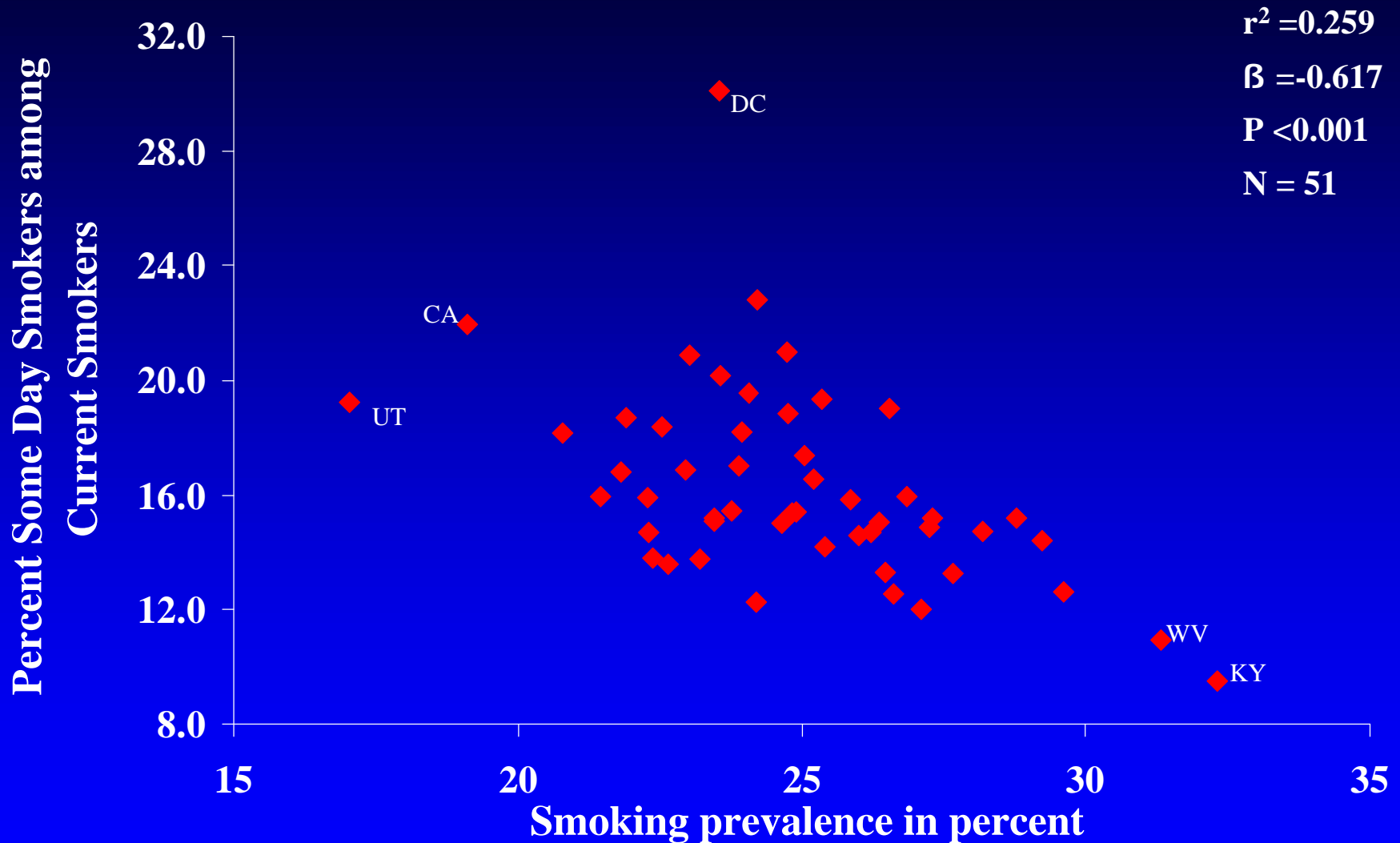
# Any Indicator of Dependence – Multiple Logistic Regression Analyses

<b>Cigarettes per Day:</b>	<b>OR</b>	<b>Lower</b>	<b>Upper</b>
>25	3.1	2.5	3.9
16-25	2.6	2.2	3.0
< 16	1.0	(Referent)	

<b>• Year</b>	<b>OR</b>	<b>Lower</b>	<b>Upper</b>
1994	1.4	1.03	1.9
1990	1.3	1.09	1.6
1985	1.0	(Referent)	

\* Controlling for age, sex, race/ethnicity, and education

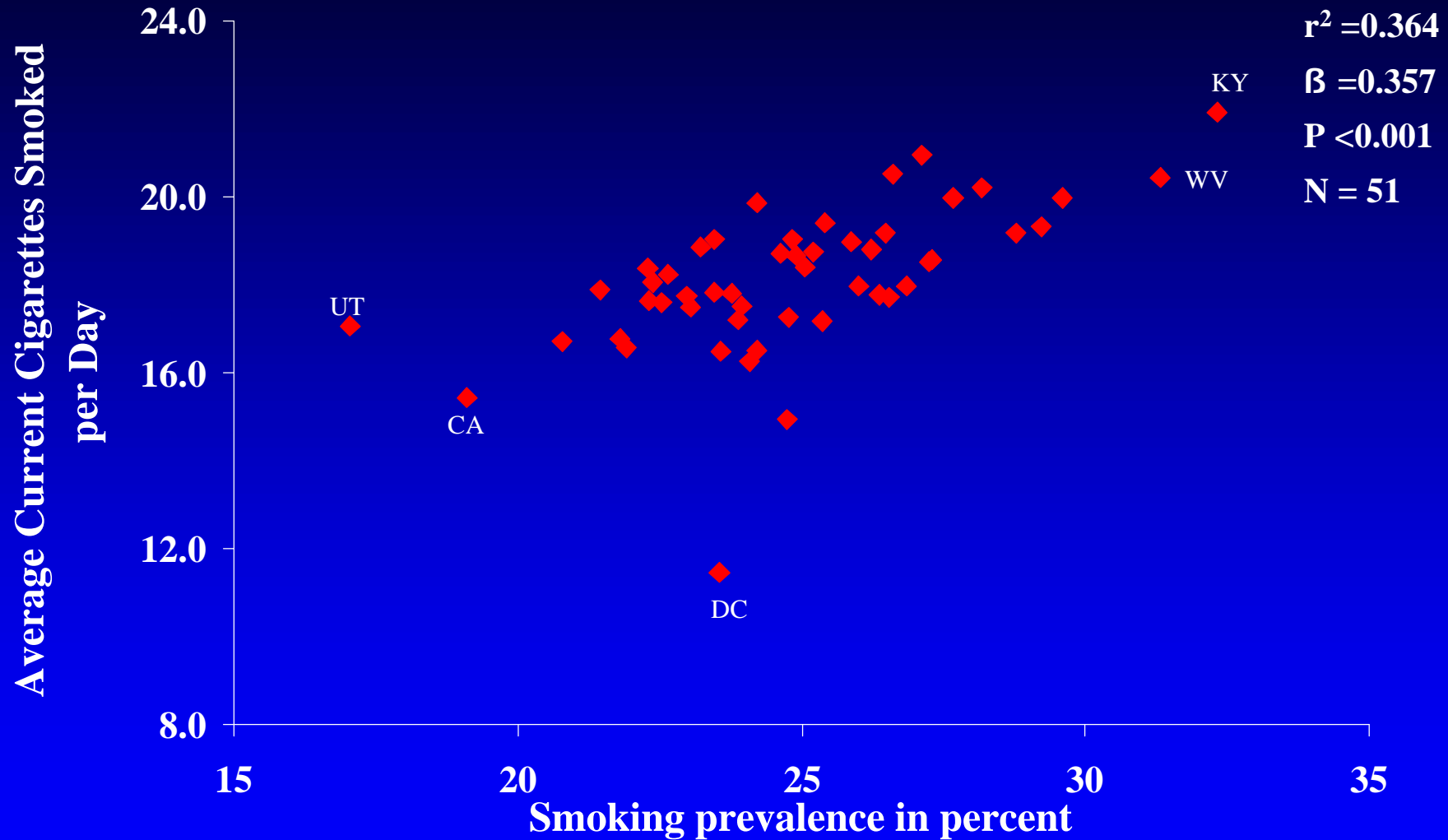
# Some Day Smoking among Current Smokers by Current Smoking Prevalence – 50 States and D.C., 1992-1993



Source: Current Population Survey, 1992-1993

Note: among persons aged 25+ years; all estimates are age adjusted

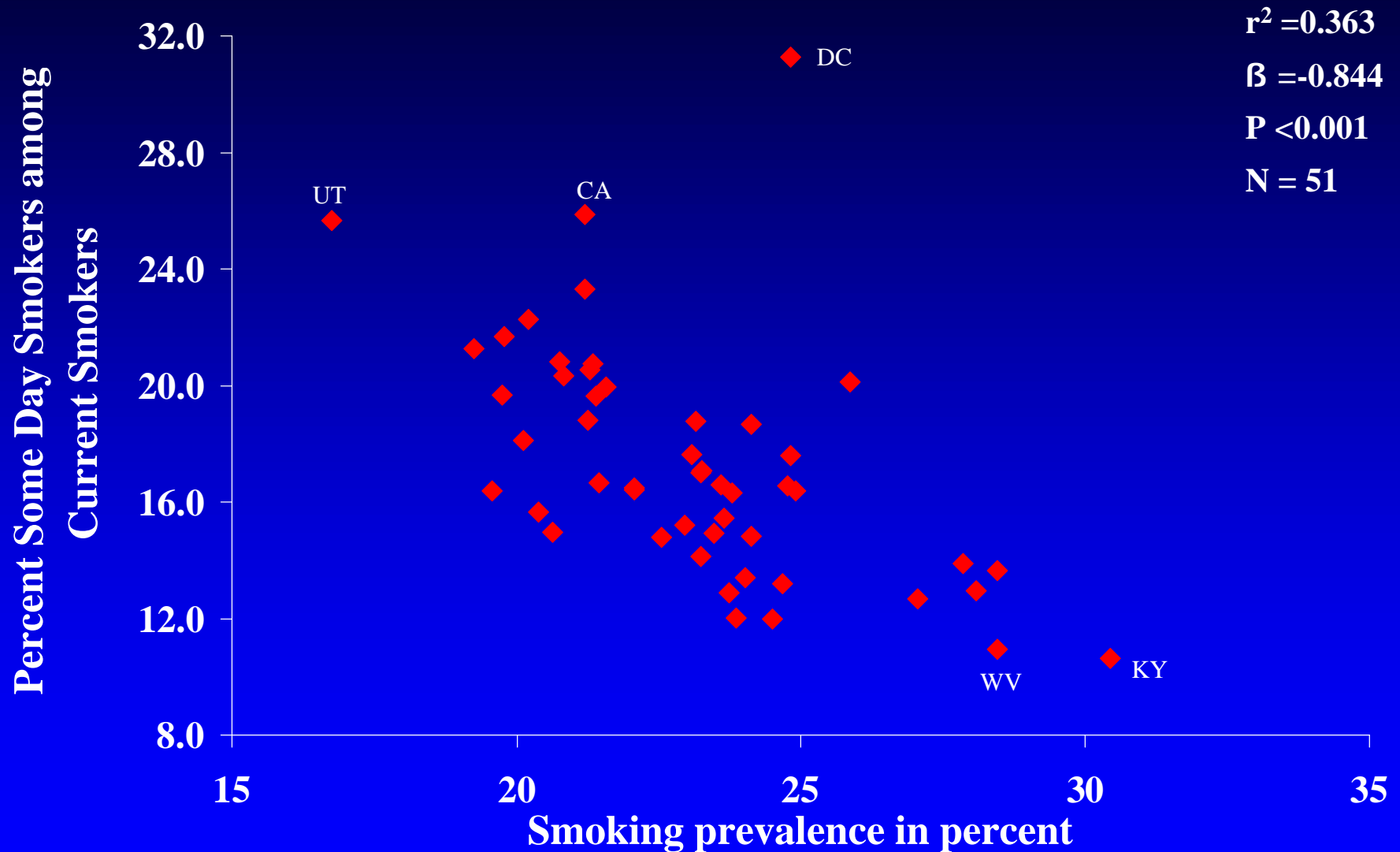
# Cigarettes Smoked per Day by Current Smoking Prevalence in 50 states and D.C., 1992-1993



Source: Current Population Survey, 1992-1993

Note: among persons aged 25+ years; all estimates are age-adjusted

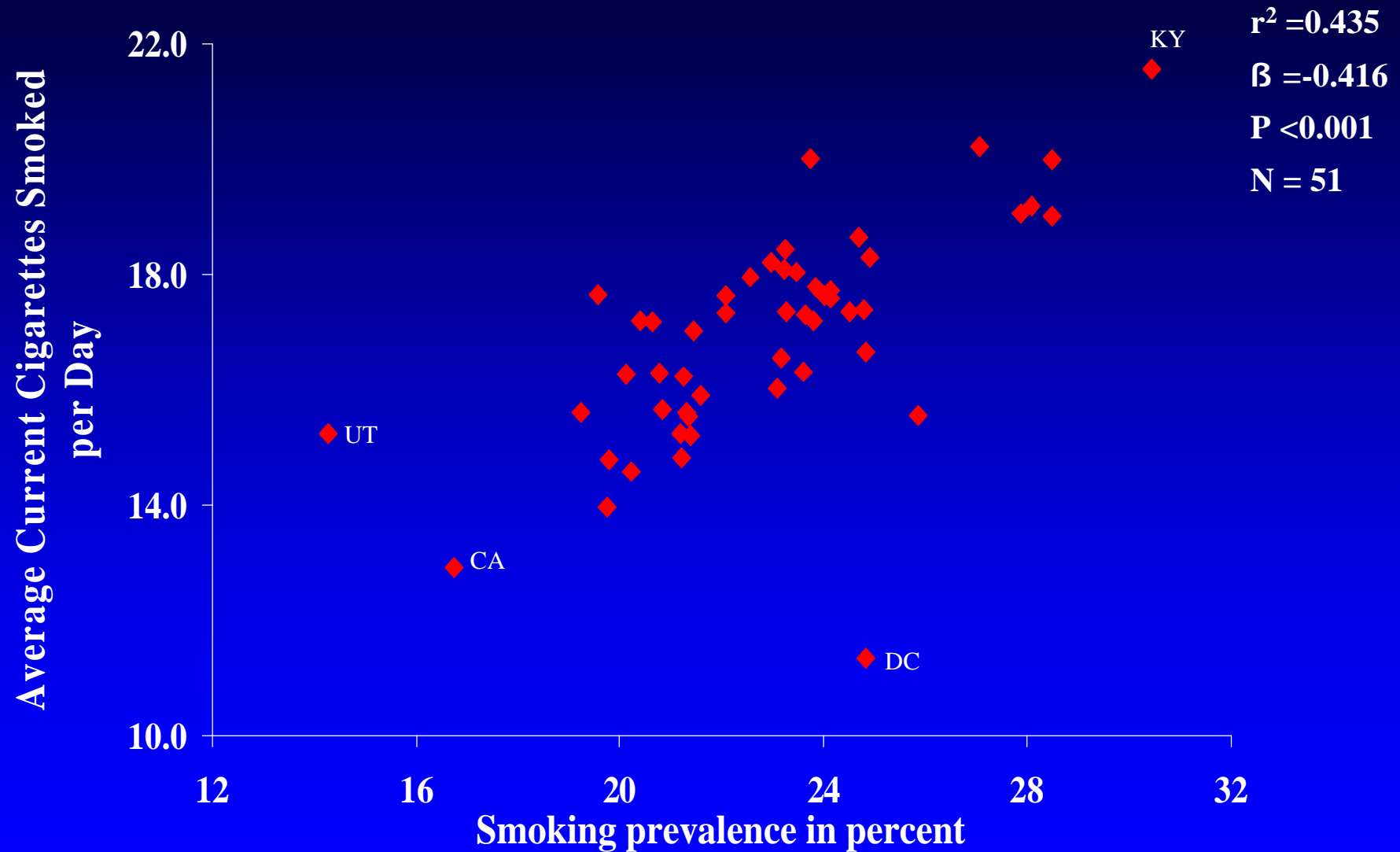
# Some Day Smoking among Current Smokers by Current Smoking Prevalence in 50 States and D.C., 1998-1999



Source: Current Population Survey, 1998-1999; ages 25+, age-adjusted estimates



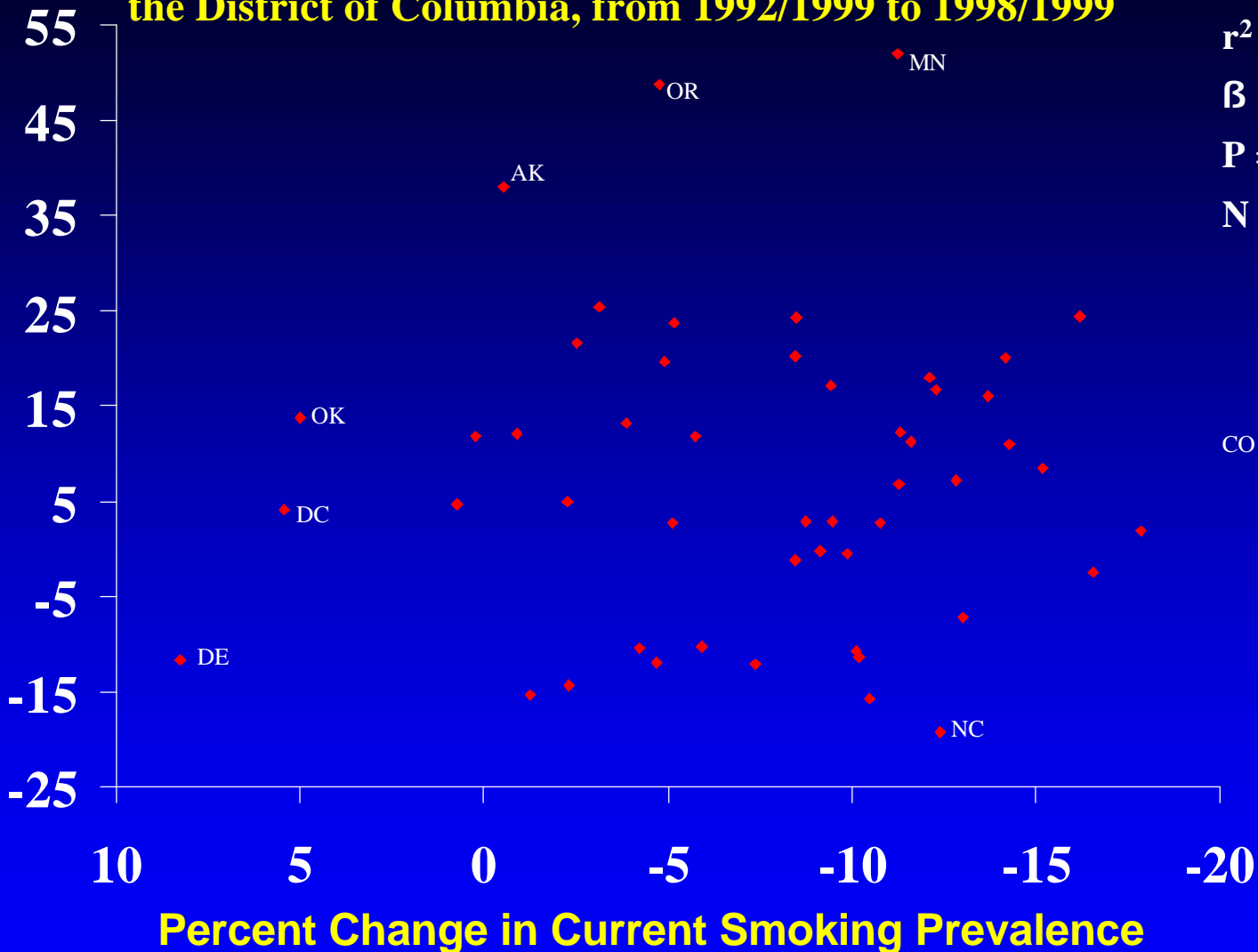
# Cigarettes Smoked per Day by Current Smoking Prevalence in 50 States and D.C. -- 1998-1999



Source: Current Population Survey, 1998-1999; ages 25+, age-adjusted estimates

**State-Specific Estimates of Change (%) in Current Smoking Prevalence and Change (%) in Some Day Smoking Prevalence among Current Smokers in All 50 States and the District of Columbia, from 1992/1999 to 1998/1999**

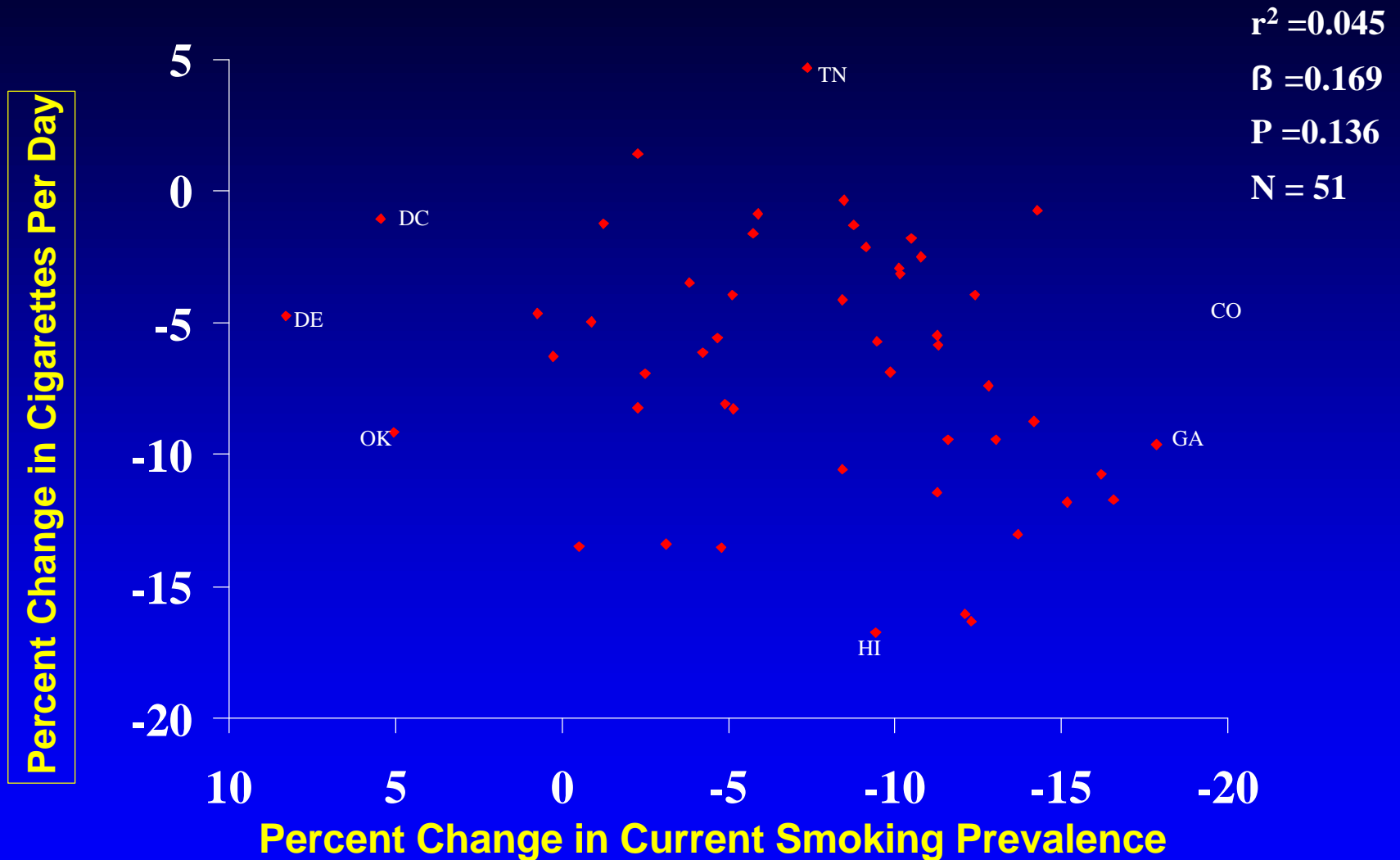
**Percent Change in Prevalence of Some Day Smoking among Current Smokers**



Source: 1992/1993 and 1998/1999 National Cancer Institute, Tobacco Use Supplement to the Current Population Survey

Note: among persons aged 25+ years; estimates are age-adjusted

# State-Specific Estimates of Change (%) in Current Smoking Prevalence and Change (%) in Cigarettes Smoked Per Day\* in All 50 States and the District of Columbia, from 1992/1999 to 1998/1999

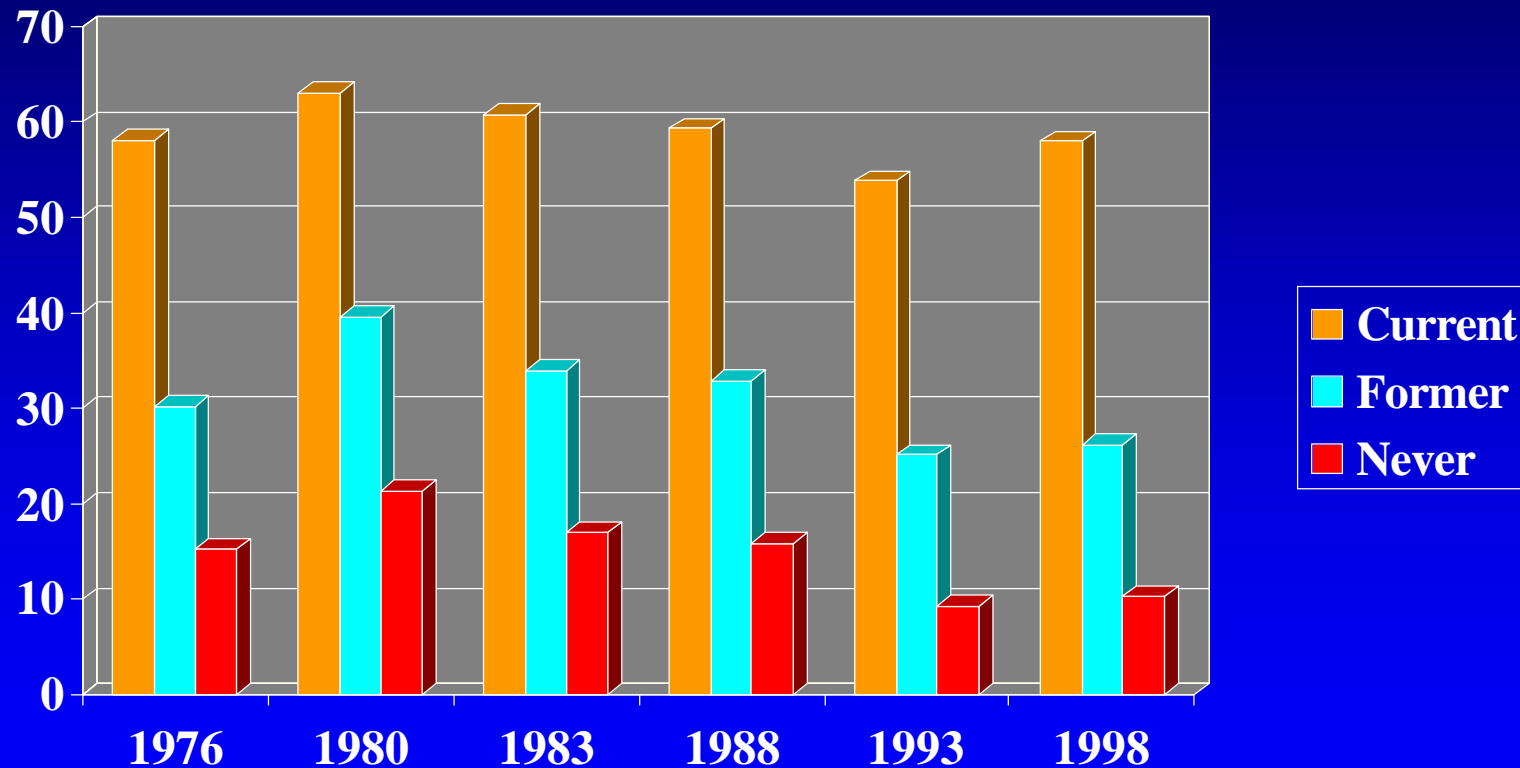


Source: 1992/1993 and 1998/1999 National Cancer Institute, Tobacco Use Supplement to the Current Population Survey

\* Among Current Smokers

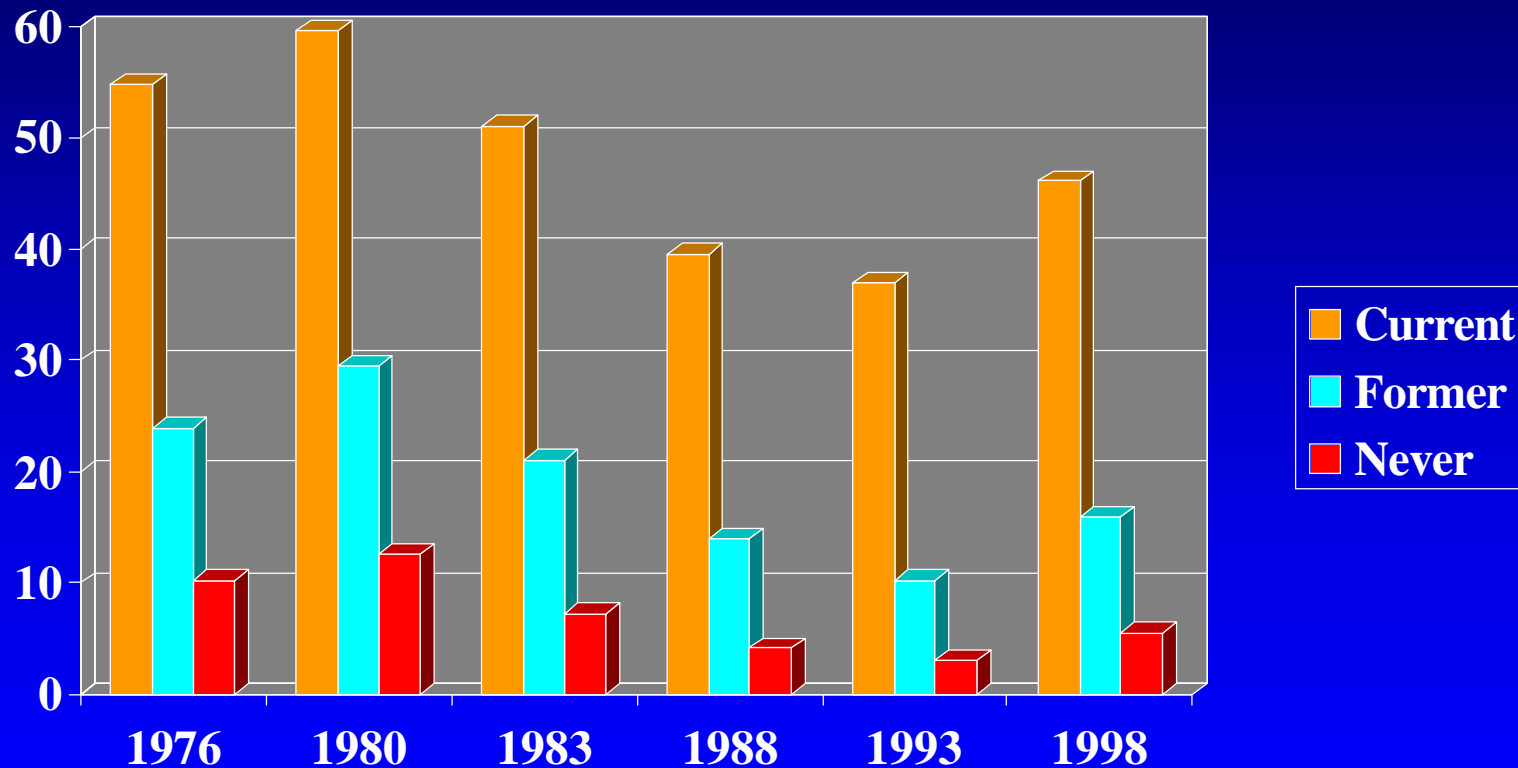
Note: among persons aged 25+ years; estimates are age-adjusted

# Trends in Prevalence of Past Month Binge Drinking Among U.S. High School Seniors, by Cigarette Smoking Status – 1976-1998



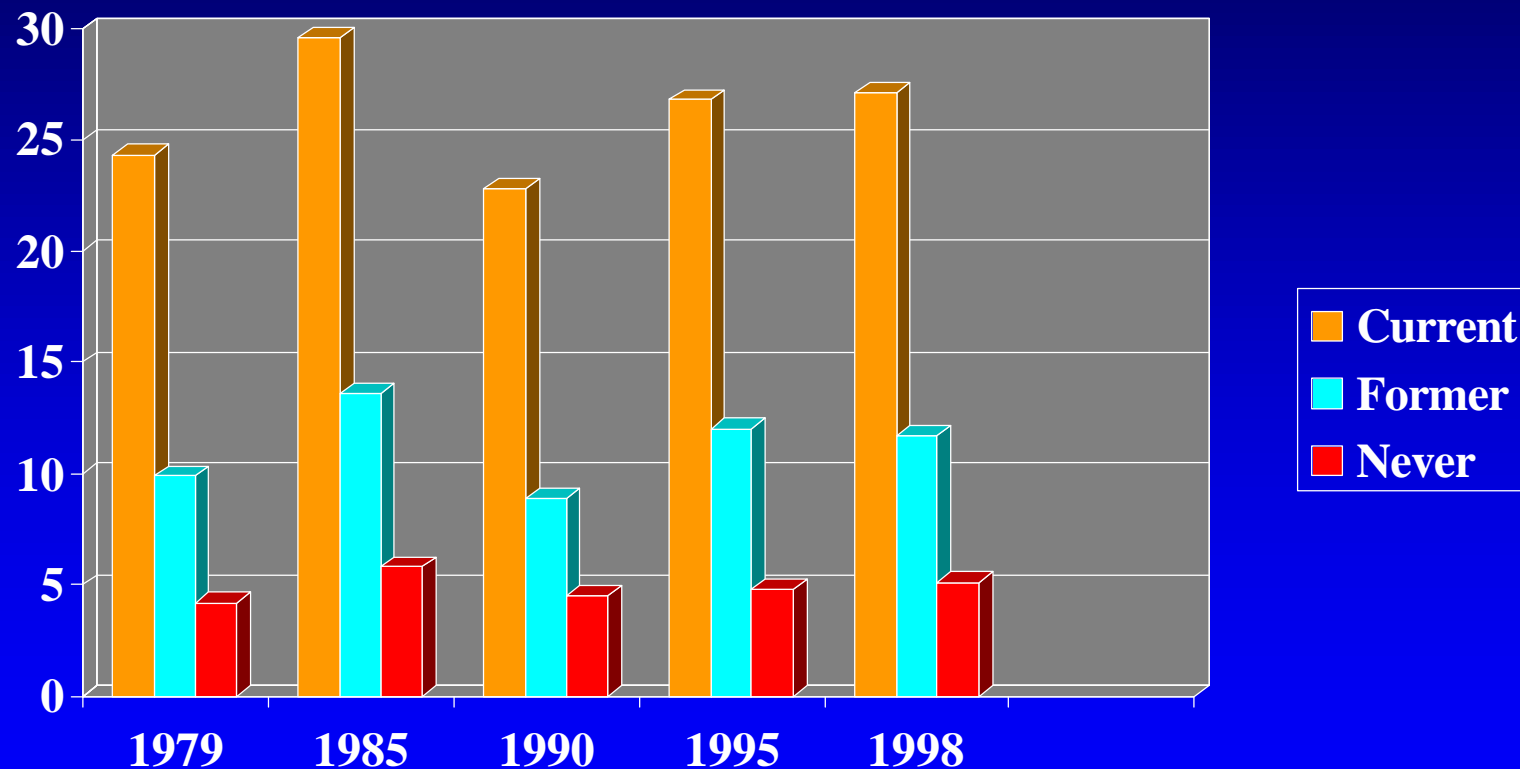
Source: Institute for Social Research, University of Michigan, Monitoring the Future Surveys

# Trends in Prevalence of Past Marijuana Use Among U.S. High School Seniors, by Cigarette Smoking Status – 1976-1998



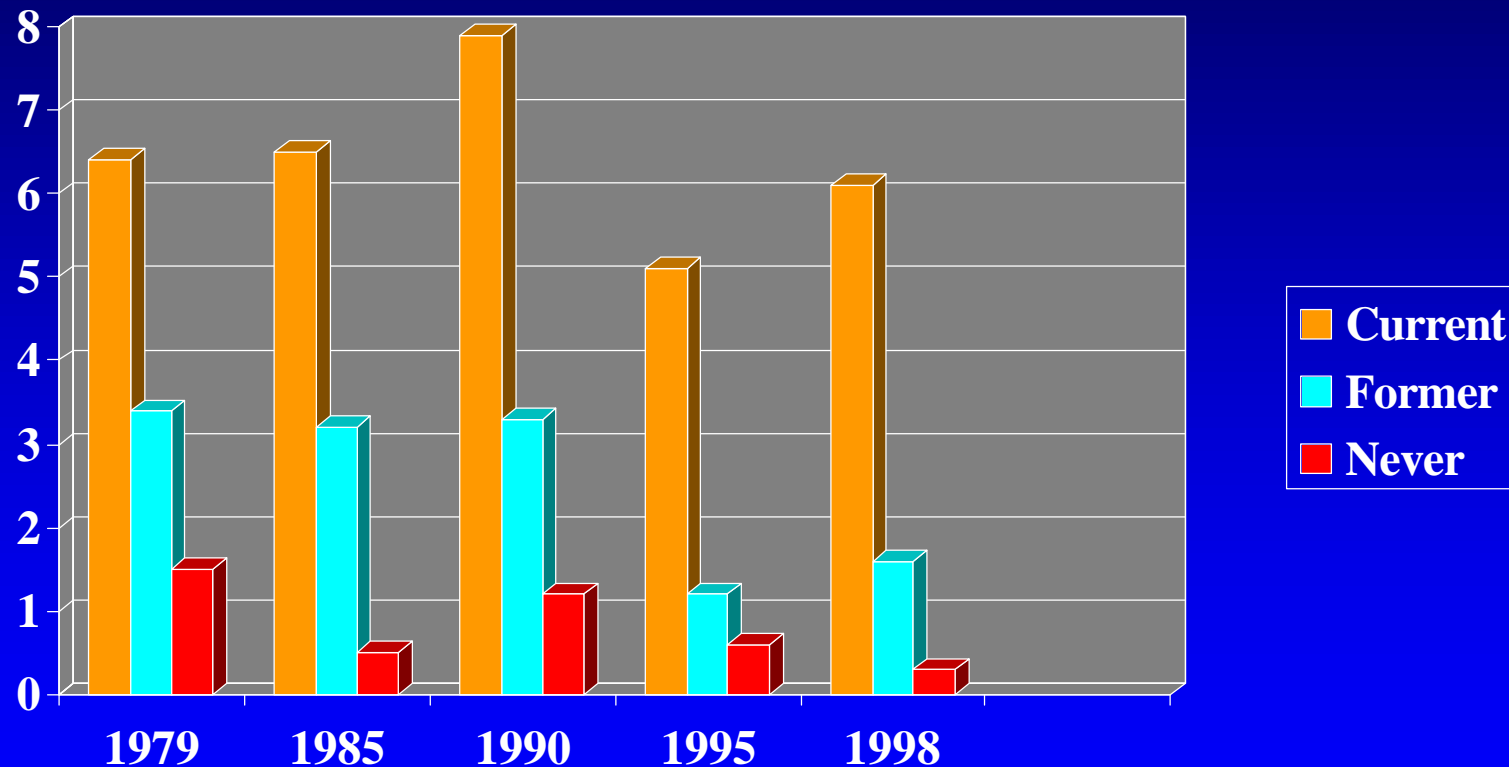
Source: Institute for Social Research, University of Michigan, Monitoring the Future Surveys

# Trends in Prevalence of Binge Drinking Among U.S. Adults aged $\geq 25$ years, by Cigarette Smoking Status – 1979-1998



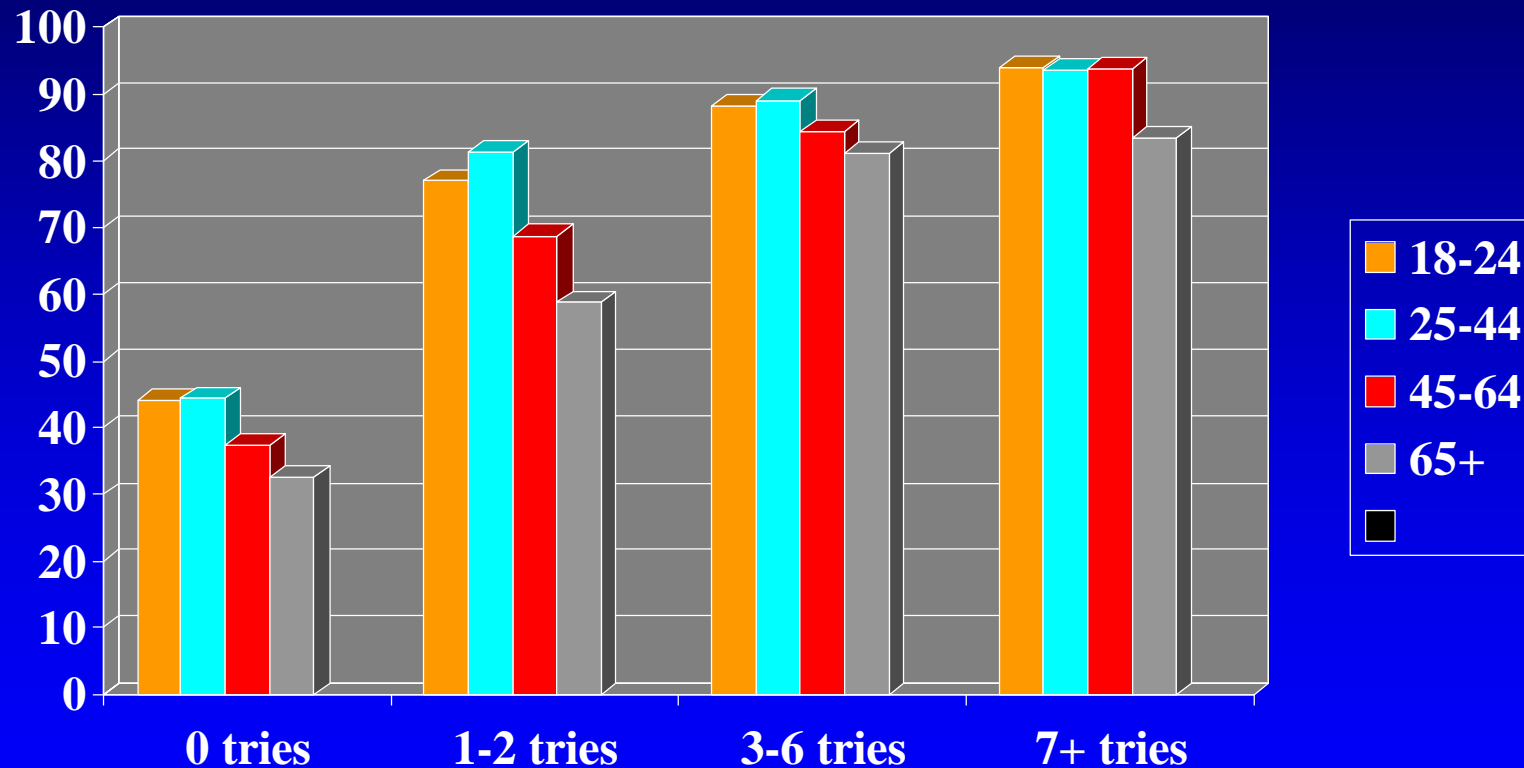
Source: SAMHSA – National Household Survey on Drug Abuse

# Trends in Prevalence of Marijuana Use Among U.S. Adults aged $\geq 25$ years, by Cigarette Smoking Status – 1979-1998



Source: SAMHSA – National Household Survey on Drug Abuse

# Percent of Current Smokers Who Want to Quit by Age and Number of Previous Quit Attempts – United States, 2000



Source: National Center for Health Statistics, NHIS 2000 (with NCI Cancer Supplement)



# Summary

- Trend analyses (national and state) of cigarettes per day and some-day smoking do not indicate hardening
- Preliminary analyses suggest slight increase in indicators of addiction from 1985-1994.
- Trend analyses of binge drinking and marijuana use not conclusive – perhaps increased marijuana use in adult smokers, relative to nonsmokers.
- Interest in quitting is high. Less interest seen among older people and people who haven't tried to quit in the past.
- Improved surveillance is needed to properly address this question.