

# **Epidemiology of Menthol Use: Prevalence, Distribution, Population Segmentation, and International**

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Cummings**

**First Conference on Menthol Cigarettes:  
Setting the Research Agenda**

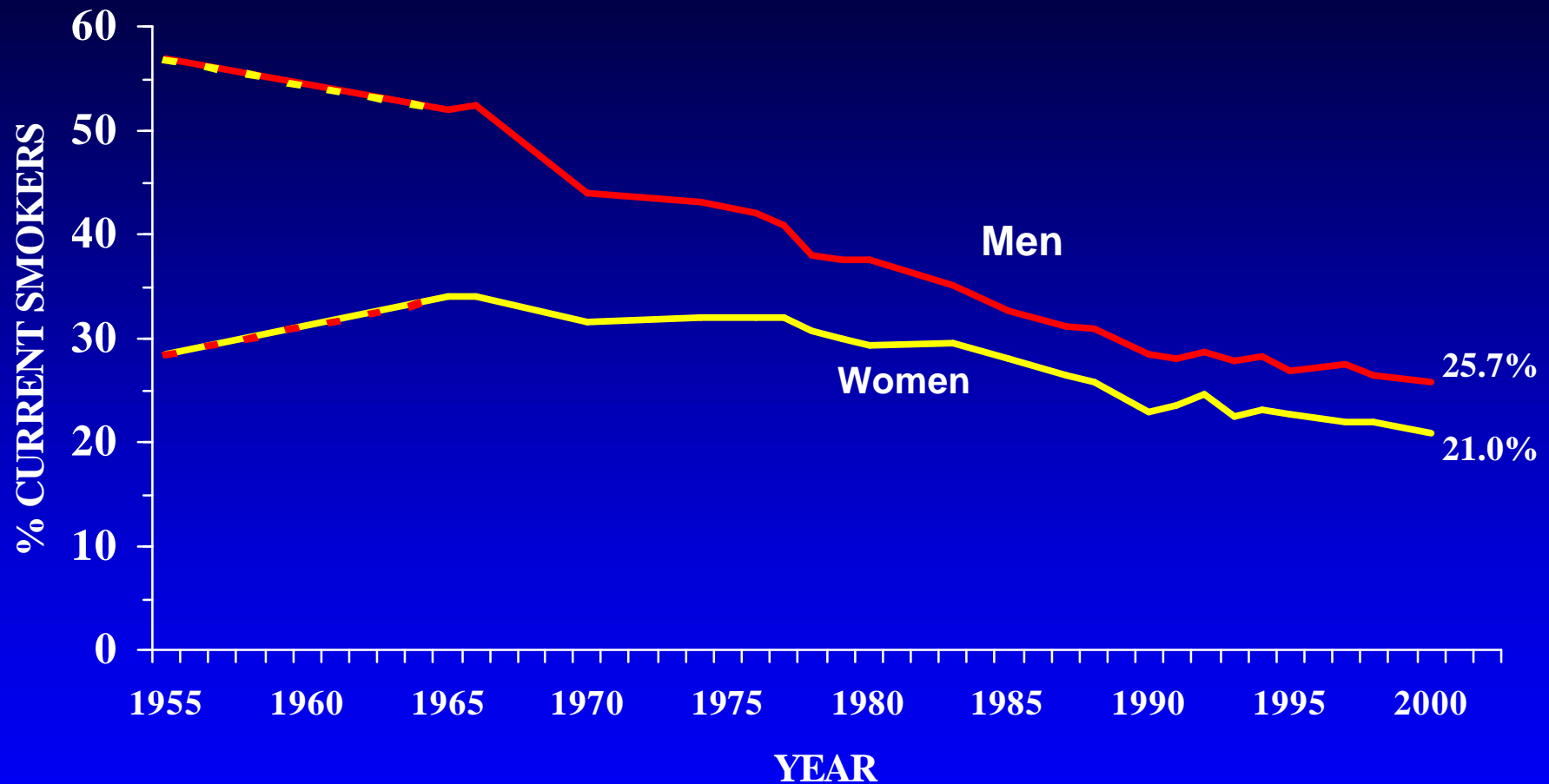
**Atlanta, Georgia**

**March 21, 2002**

# Outline

- History of involvement in menthol research and use
- Cigarette smoking trends
- Market shares in the United States and internationally
- Adult and adolescent patterns of menthol use
- Correlates
- Summary

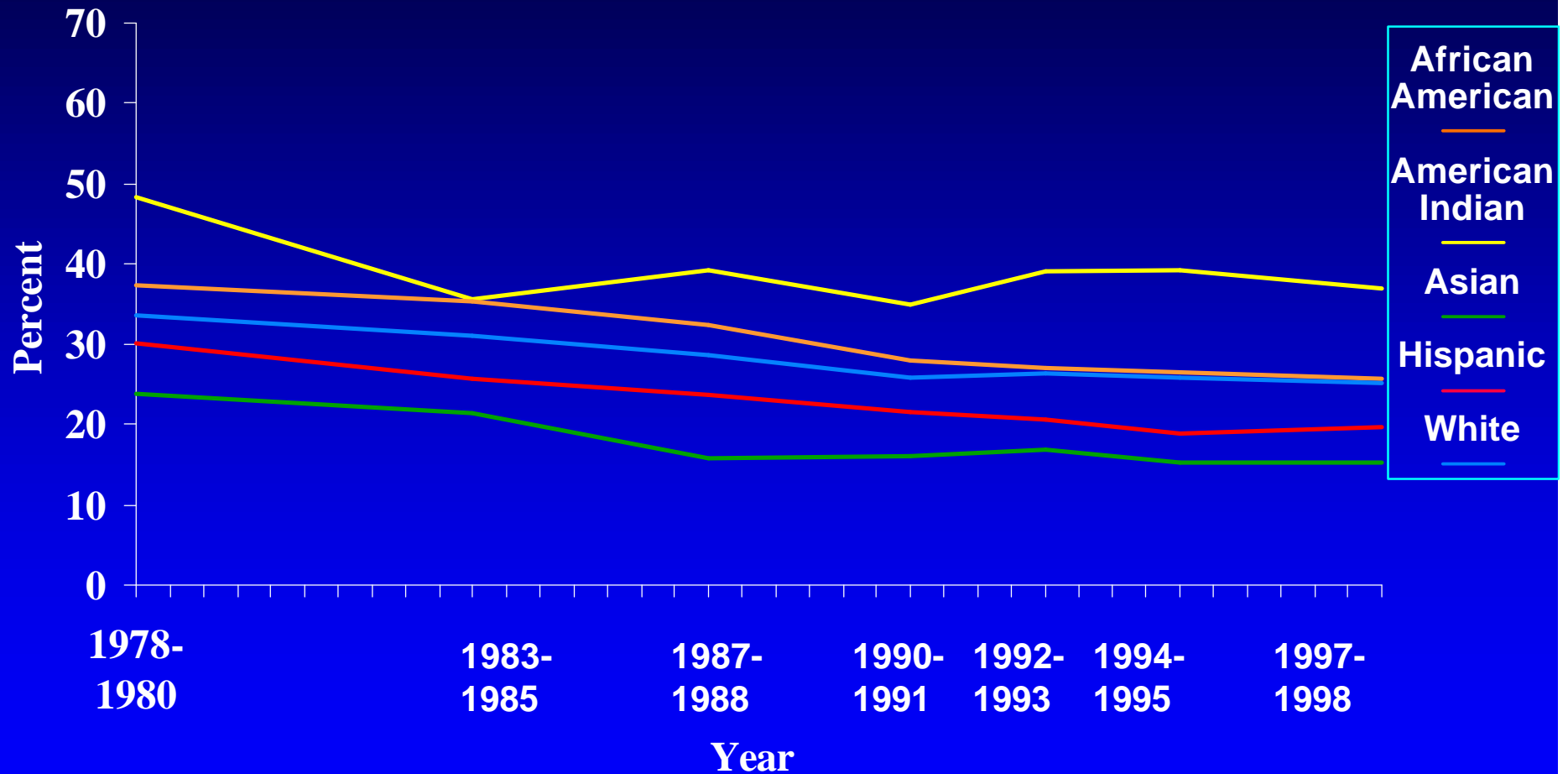
# Trends in cigarette smoking\* among adults aged $\geq 18$ years, by sex - United States, 1955-2000



\*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.

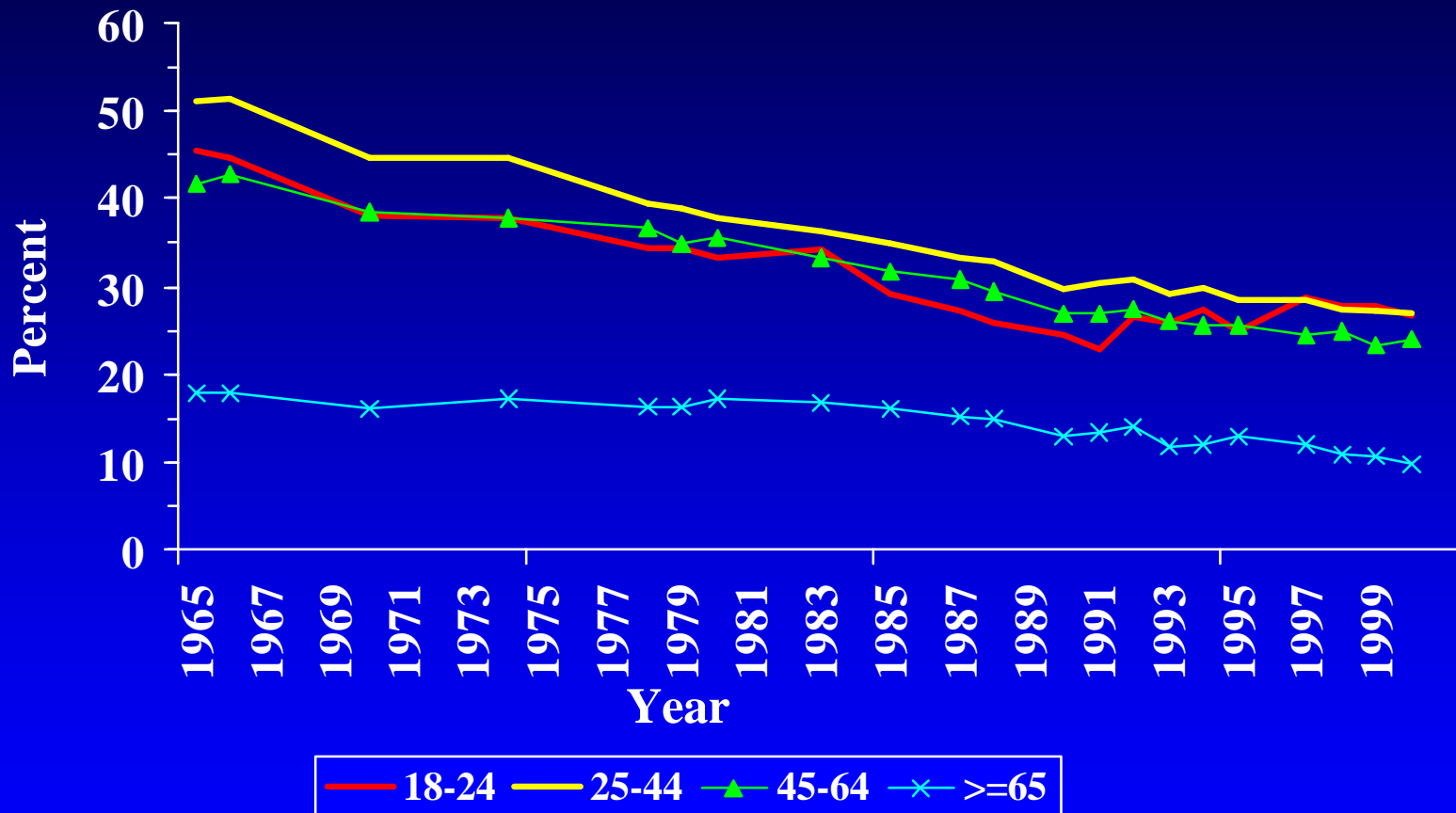
Source: 1955 Current Population Survey; 1965-2000 National Health Interview Survey.

# Trends in the Percentage of Current Cigarette Smoking by Race/Ethnicity, Overall—United States, Ages 18+, 1978-1998



Source: National Health Interview Surveys, 1978-1998, selected years, aggregate data

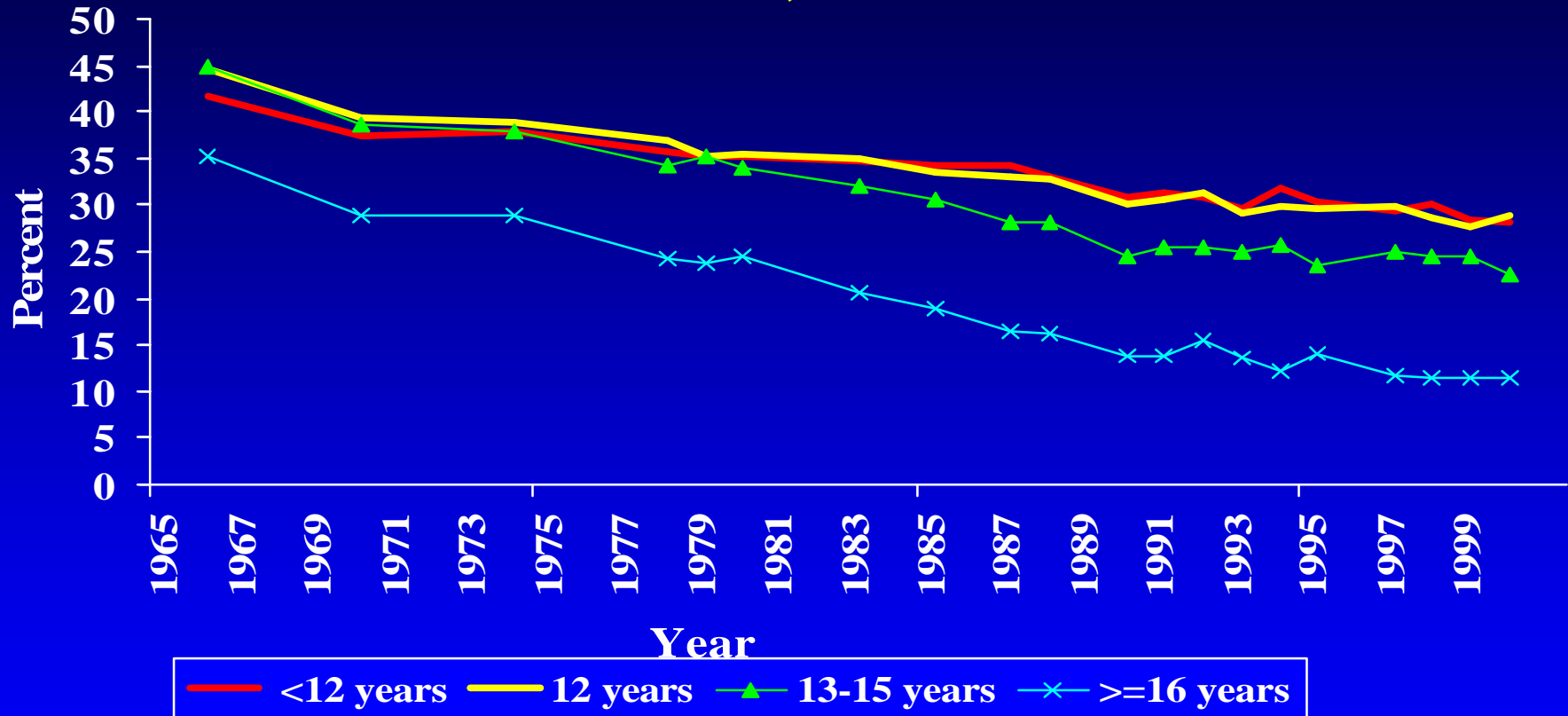
# Trends in cigarette smoking\* by age - United States, 1965-2000



\*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

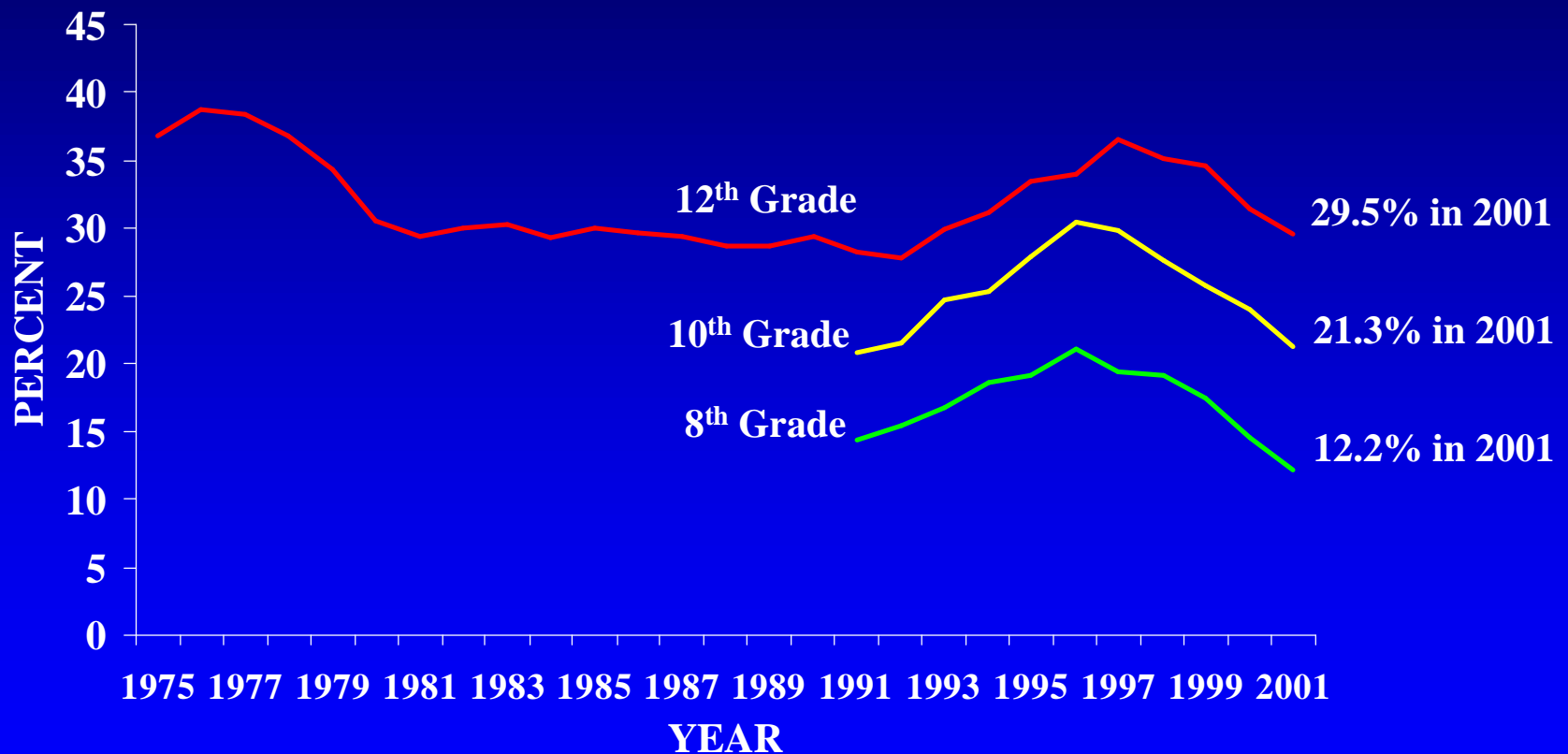
# Trends in cigarette smoking\* among adults aged $\geq 25$ years, by education- United States, 1965-2000



\*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.

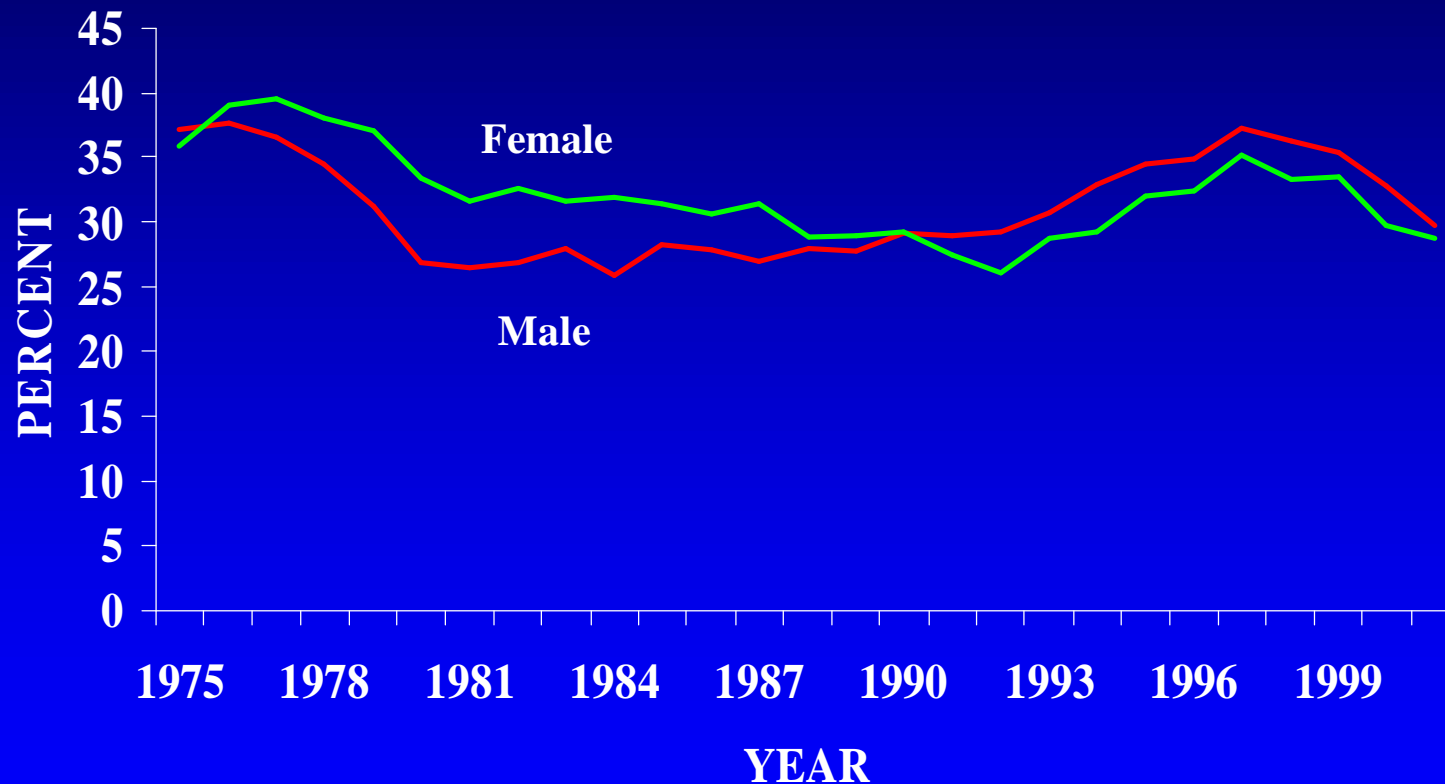
§Source: various National Health Interview Surveys from 1965 - 2000, National Center for Health Statistics

# 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

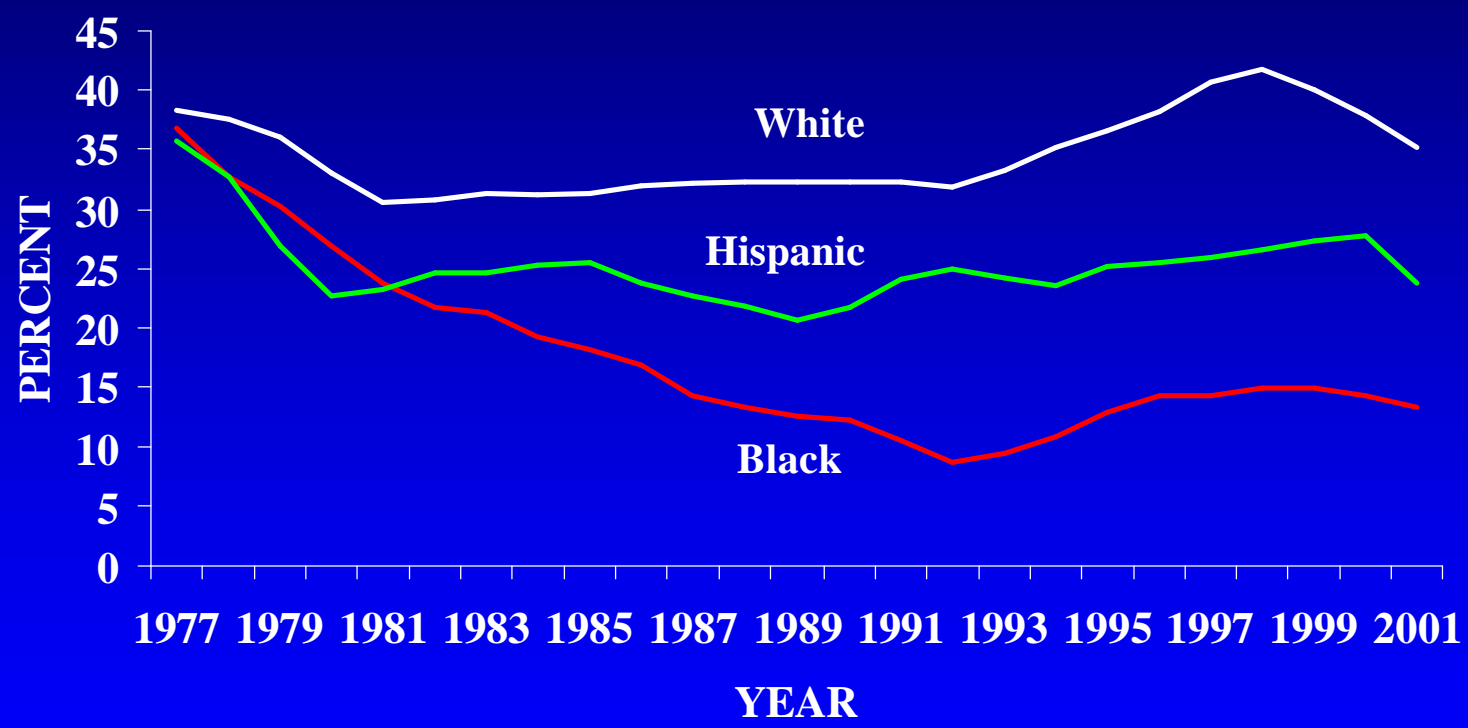
# Trends in Prevalence of Past Month Cigarette Smoking Among High School Seniors by Gender – United States, 1975-2001



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

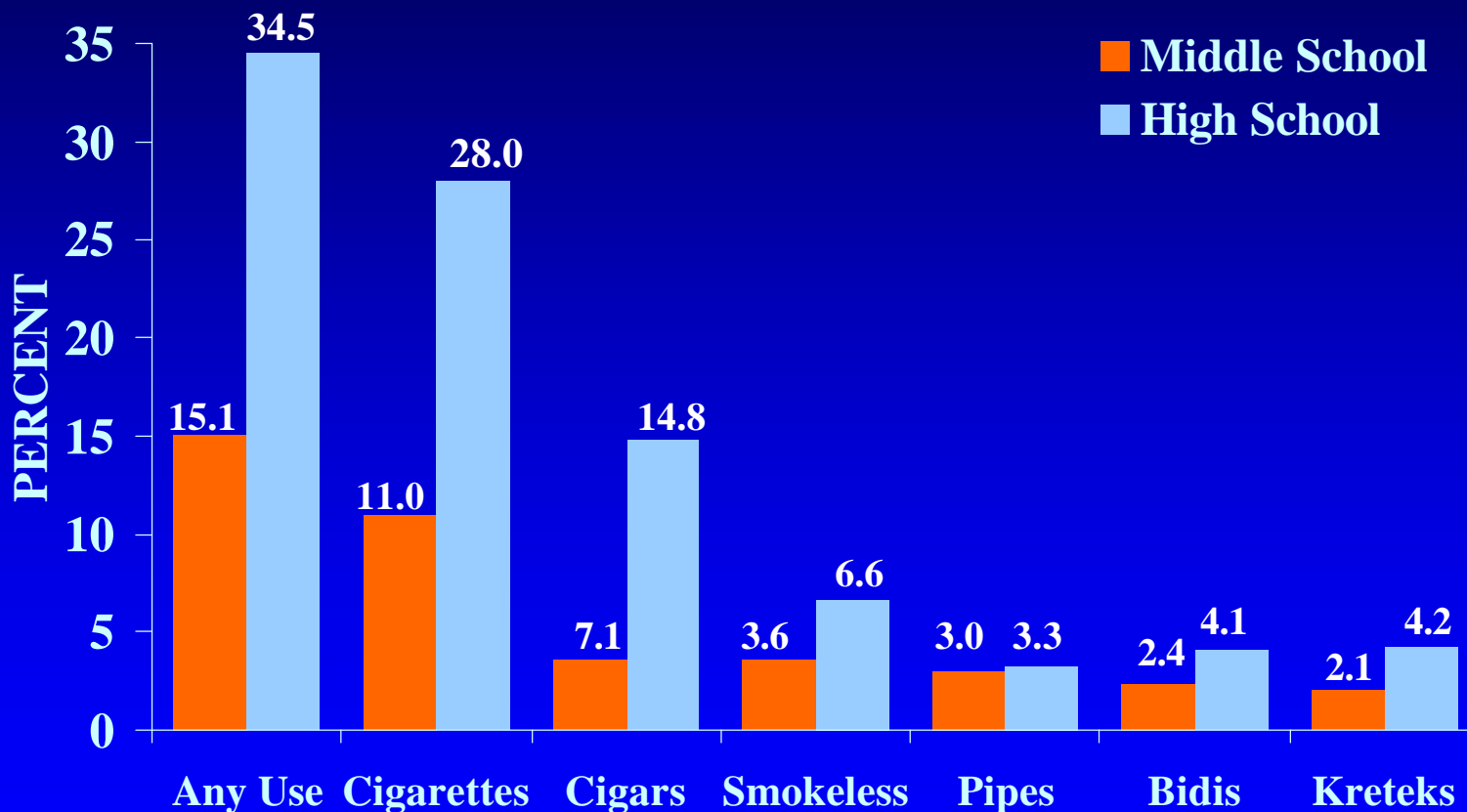


# Trends in Prevalence of Past Month Cigarette Smoking Among High School Seniors by Race – United States, 1977-2001



Source: Institute for Social Research, University of Michigan, Monitoring the Future Surveys; for racial subgroups, data for the current year and the previous year are combined

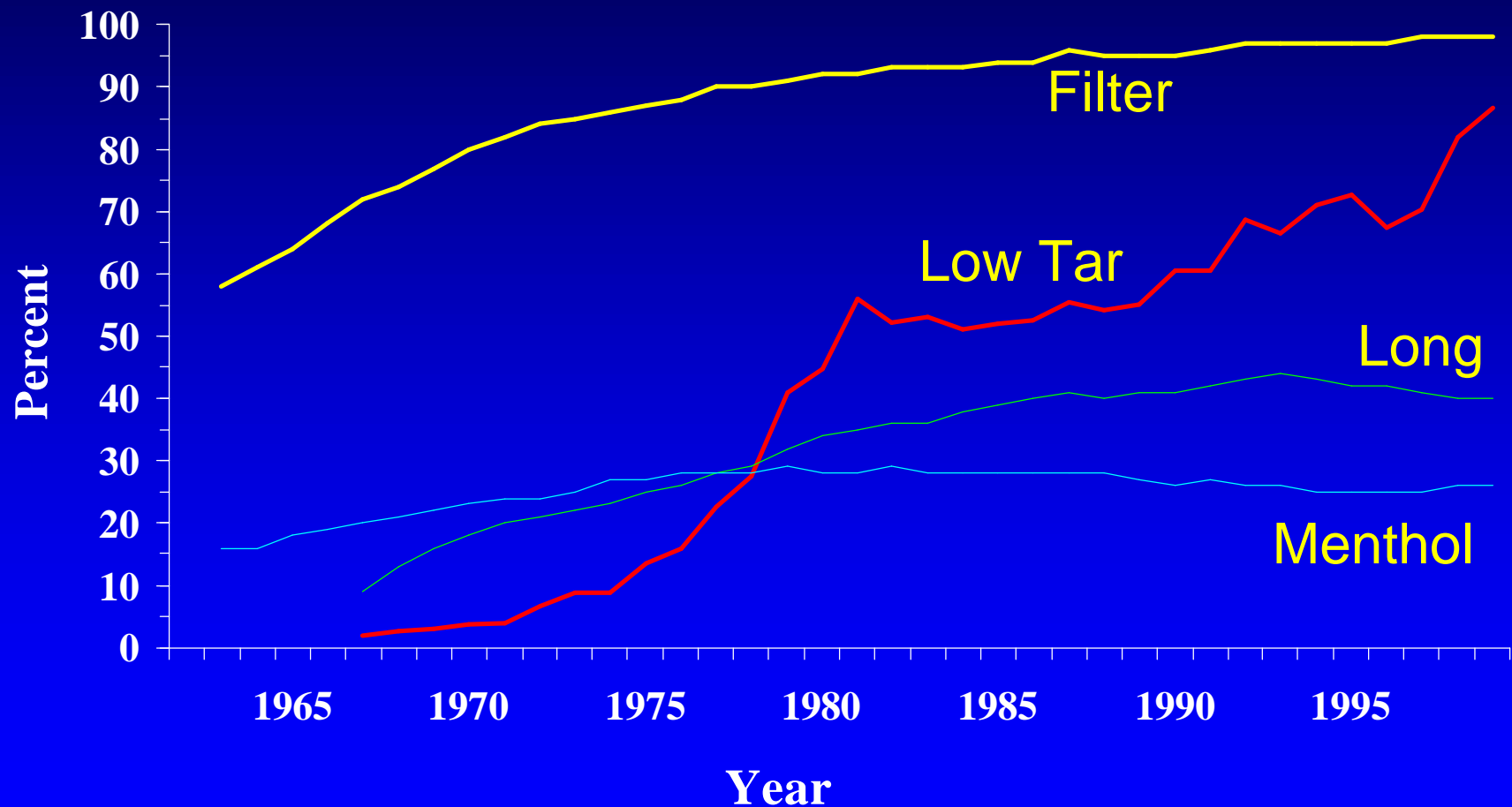
# Current Use Among Middle and High School Students by Type of Tobacco Product – National Youth Tobacco Survey, 2000



Note: Used tobacco on <sup>3</sup> 1 of the 30 days preceding the survey

Source: American Legacy Foundation, National Youth Tobacco Survey

# Domestic Market Share of Cigarettes by Tar Yield, Filter Status, Length, and Menthol Status: United States, 1963 - 1999



Source: Federal Trade Commission, 2001; Low Tar = tar yield  $\leq 15$  mg.; Long =  $\geq 94$  mm.

# Substantial Menthol Market Shares Internationally

## Africa:

Tunisia: 5%  
Kenya: 9%  
Tanzania: 10%  
Nigeria: 10%-15%  
Zimbabwe: 14%

## Europe:

Denmark: 5+%  
Poland: 10+%  
Sweden: 12%  
Finland 16%

## Australia/Asia:

Japan: 6%  
Malaysia: 9+%  
Australia: 9%-10%  
New Zealand: 10%-14%  
Thailand: 19+%  
Hong Kong: 26%  
Singapore: 25+%  
Philippines: 66%

## Americas:

United States: 26%

Source: *The World Cigarette Market*, 1999 Survey Volumes I-IV.

# Leading Menthol Brands

**United States (retail market share in the menthol category) (Source: The Carolina Group):**

**Newport: 29.7%**

**Kool: 10.8%**

**Marlboro Menthol: 10.5%**

**Salem: 10.3%**

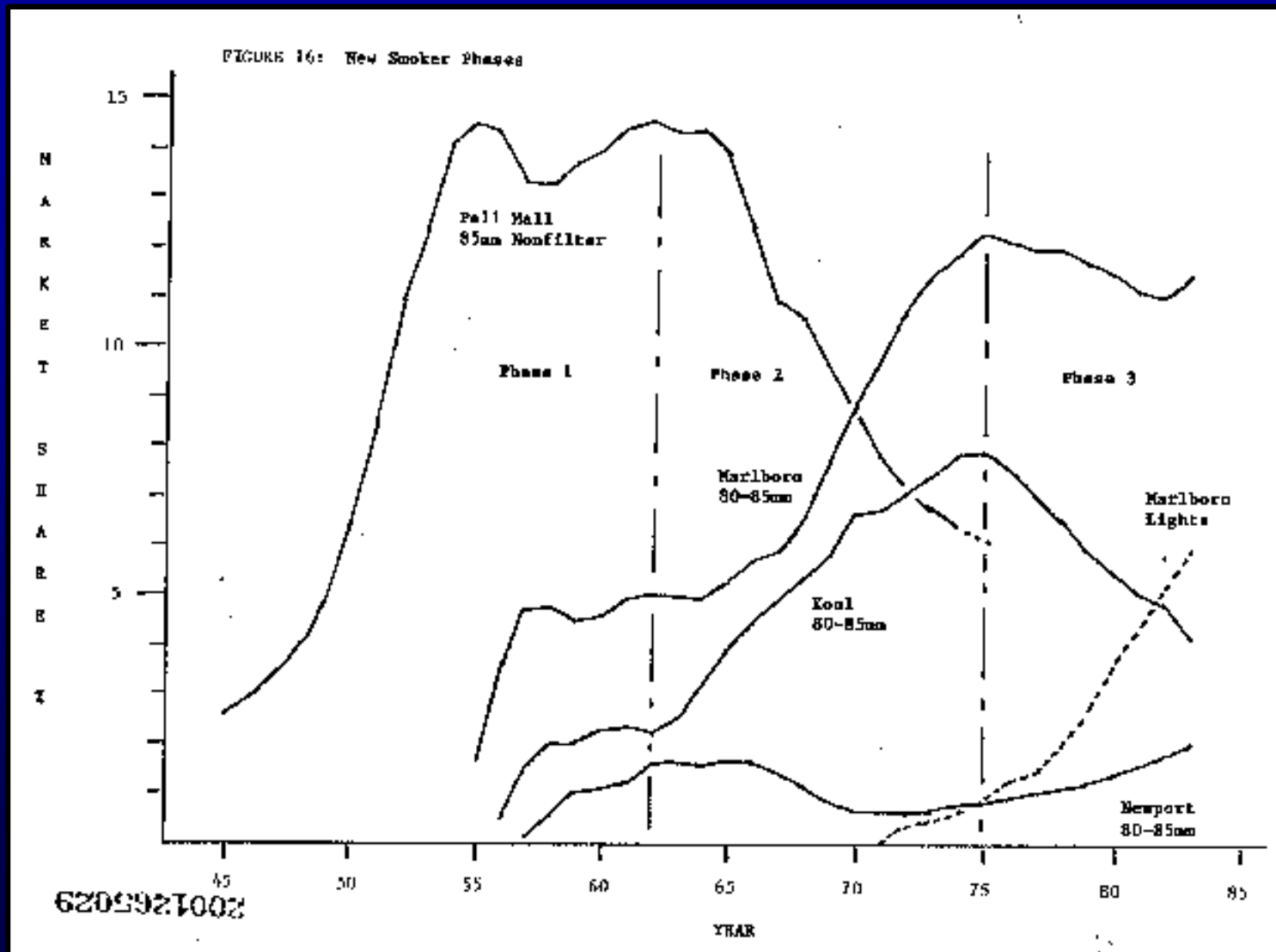
**Internationally (Source: *The World Cigarette Market*):**

**Sweet Menthol: Kenya, Tanzania**

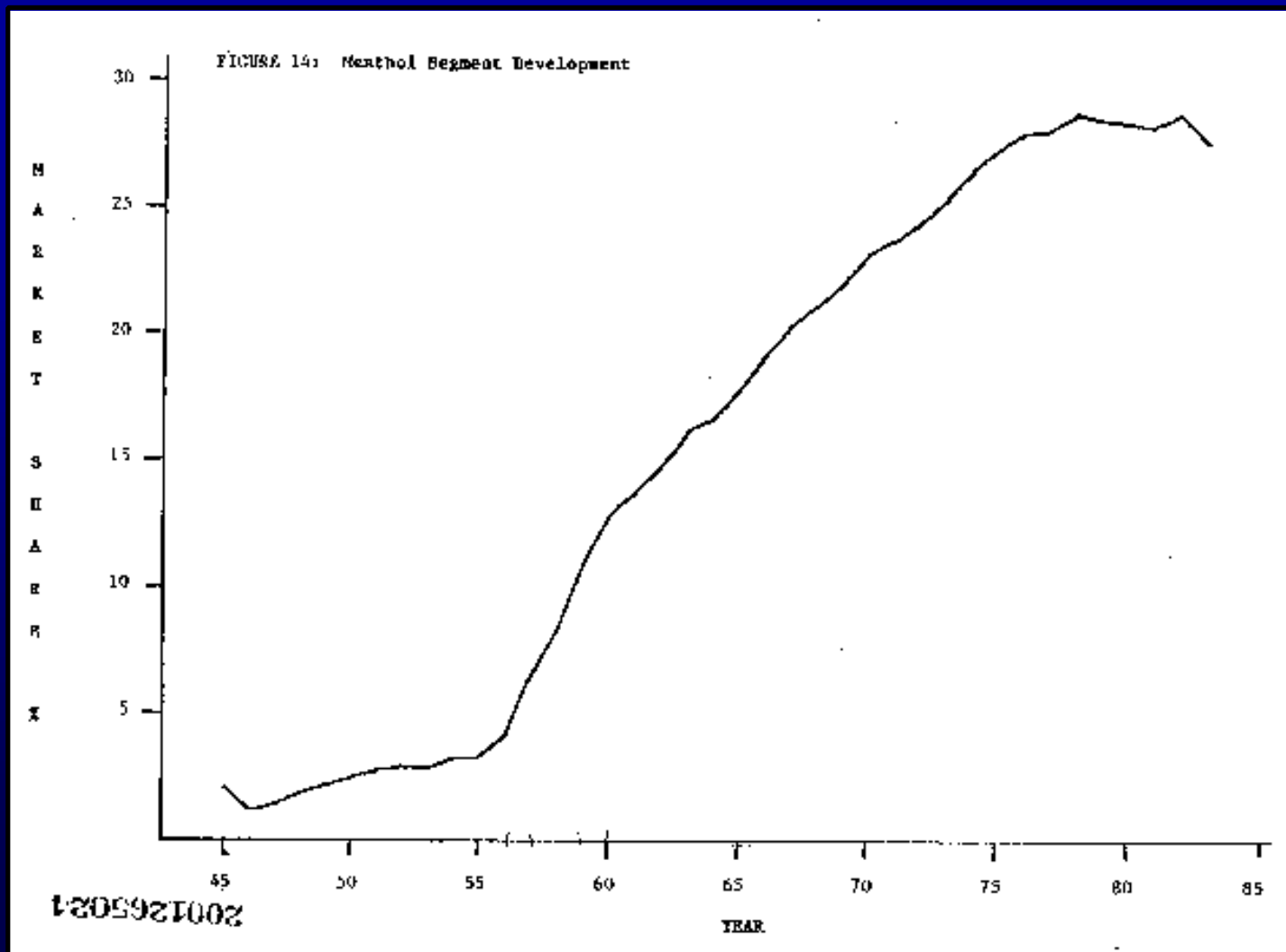
**Salem: Hong Kong, Malaysia, Singapore**

**Marlboro Menthol: Hong Kong, Japan**

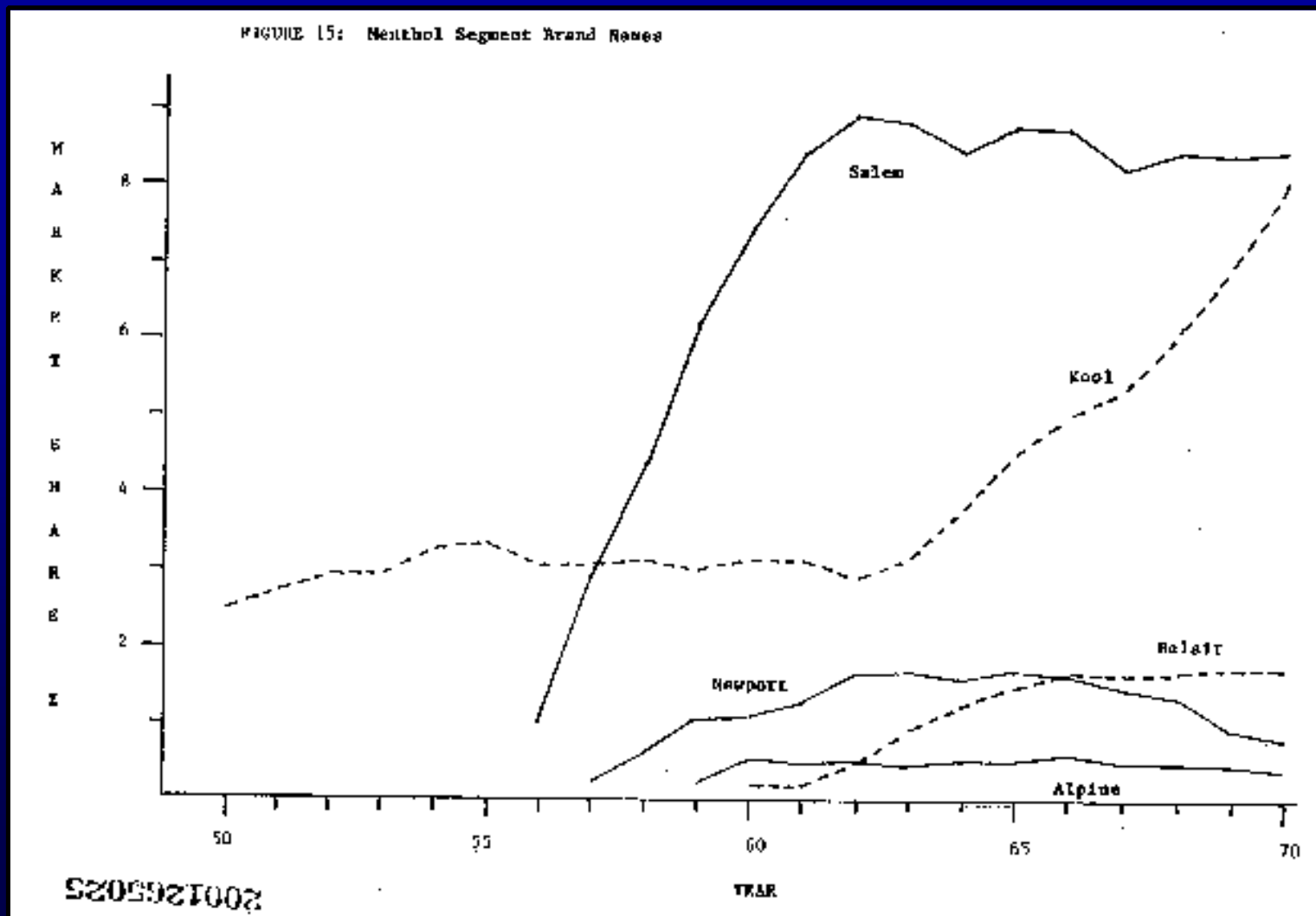
**Falling Rain: Thailand**



PM, Philip Morris; Levy, C.J.; Tindall, J. "Cigarette Market History and Interpretation". 12 Dec 1984. Bates: 2001265000-2001265045. View on TDO: [pm/2001265000-5045](https://www.industrydocuments.ucsf.edu/docs/pm/2001265000-5045).



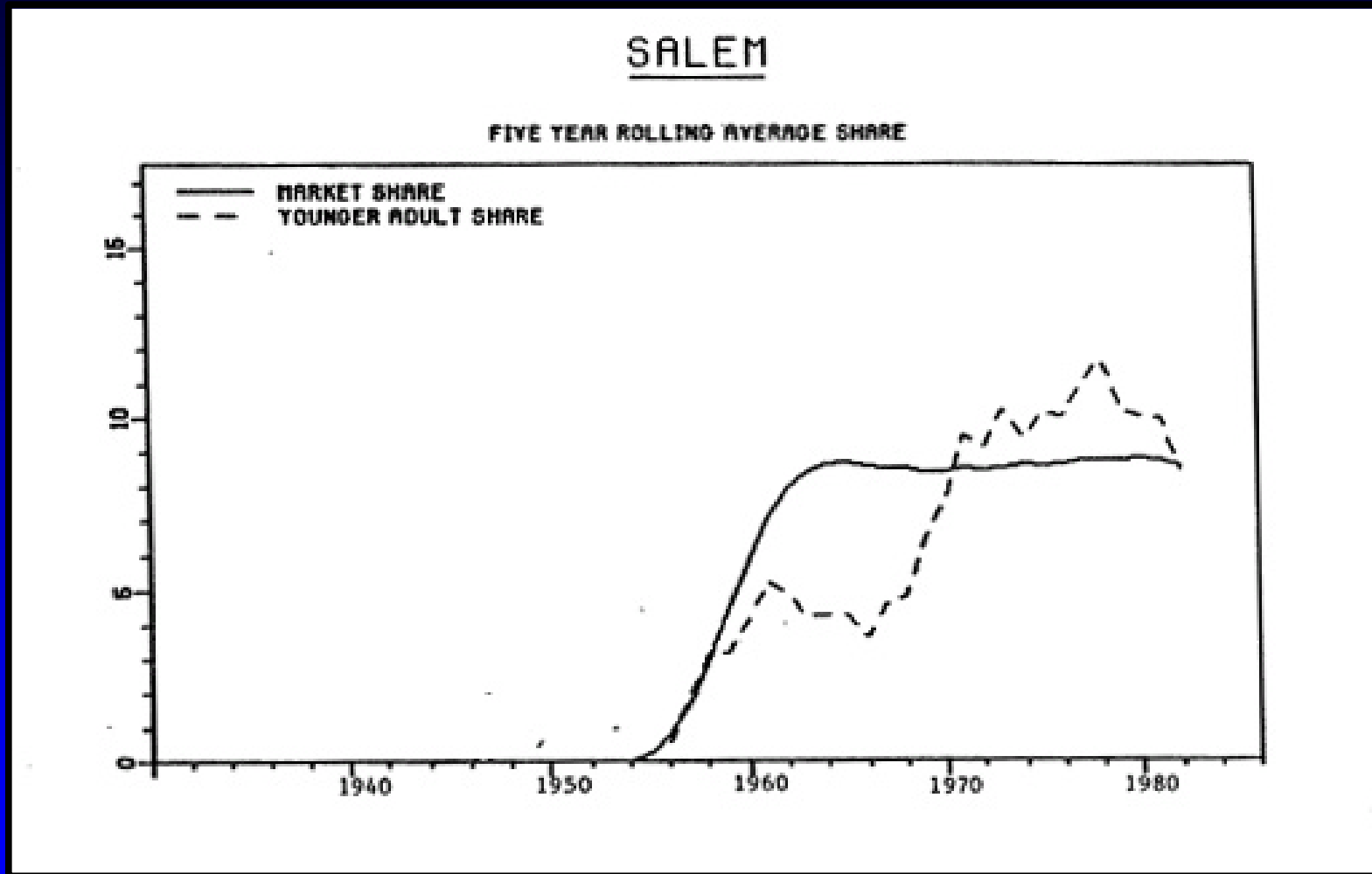
PM, Philip Morris; Levy, C.J.; Tindall, J. "Cigarette Market History and Interpretation". 12 Dec 1984. Bates: 2001265000-2001265045. View on TDO: [pm/2001265000-5045](https://www.industrydocuments.ucsf.edu/docs/pm/2001265000-5045).



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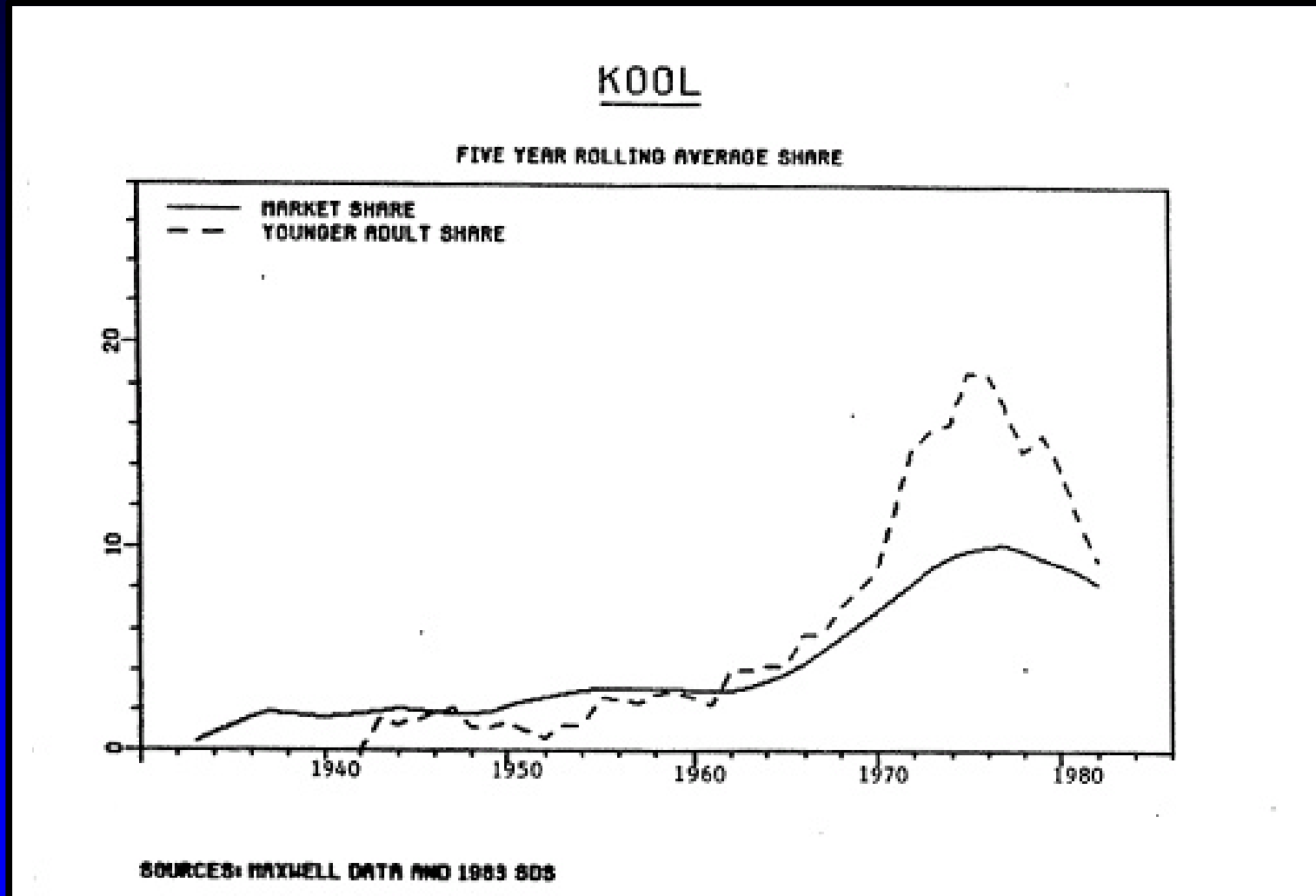


# Maxwell Data and 1983 Shares



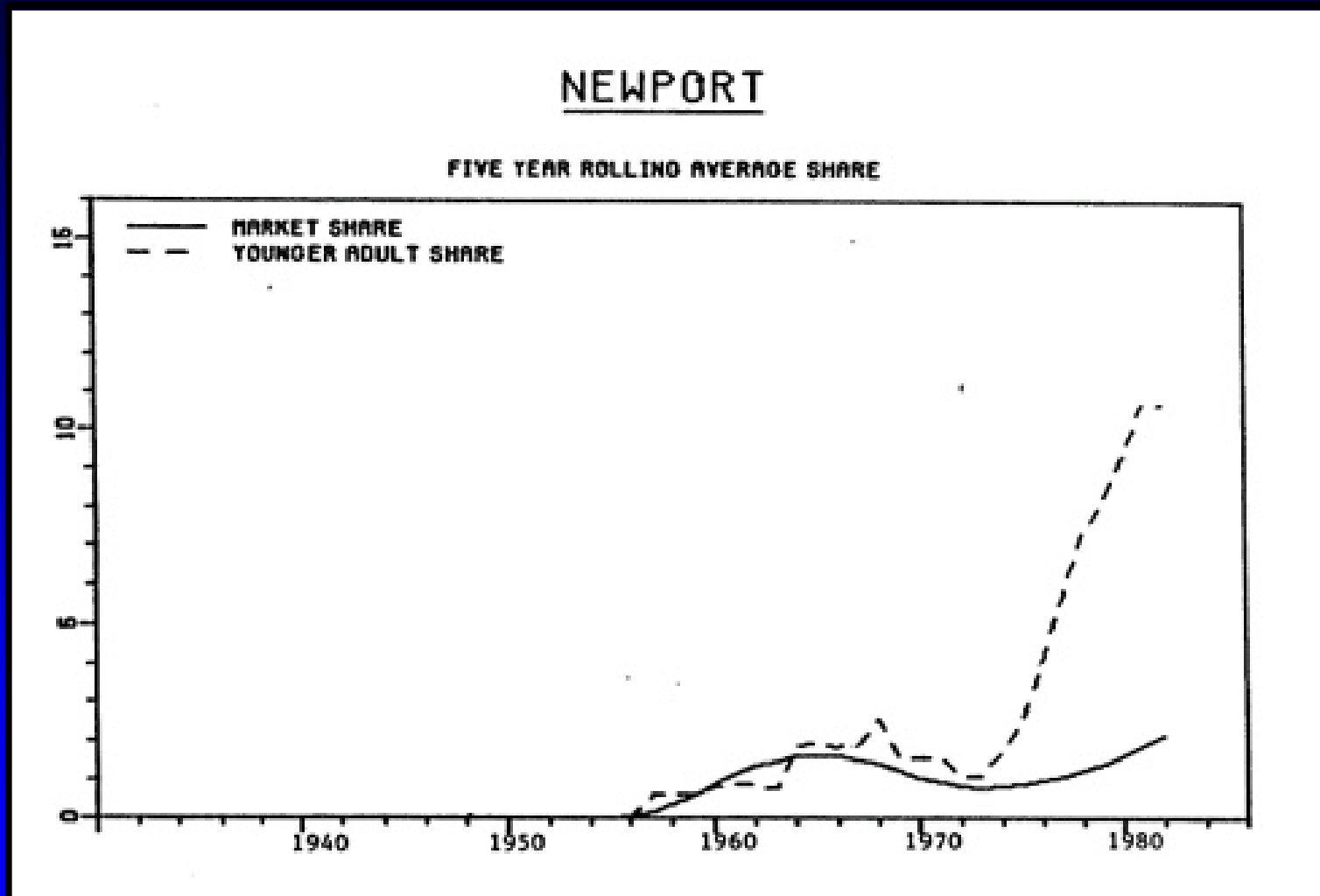
Camel. Five Year Rolling Average Share.". 10 Sep 1985. Bates:  
504446752-504446762. View on TDO: [rjr/504446752-6762](https://www.industrydocuments.ucsf.edu/docs/rjr/504446752-6762).

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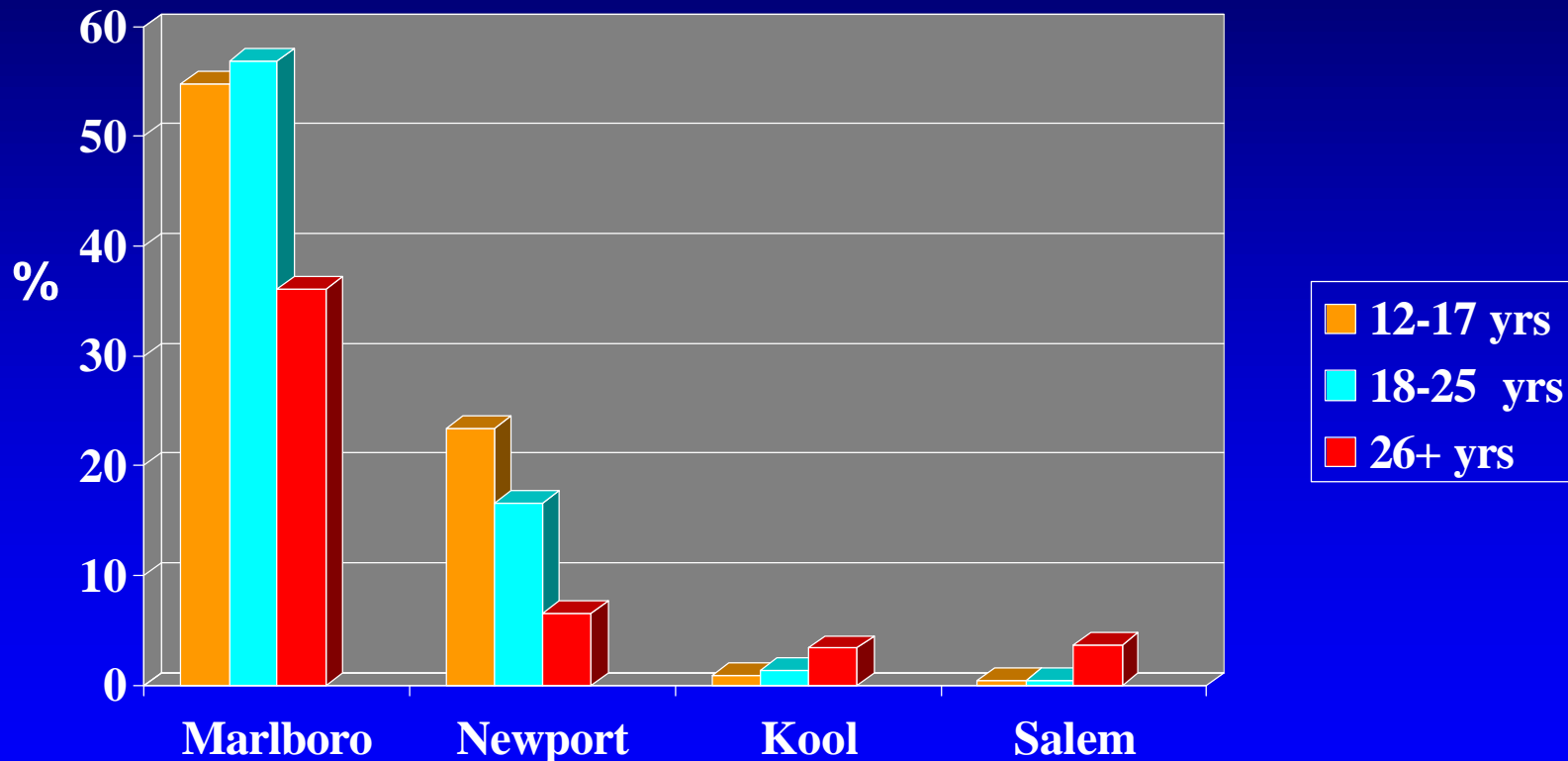


Camel. Five Year Rolling Average Share.". 10 Sep 1985. Bates:  
504446752-504446762. View on TDO: [rjr/504446752-6762](https://www.industrydocuments.ucsf.edu/docs/rjr/504446752-6762).

# National Household Survey on Drug Abuse

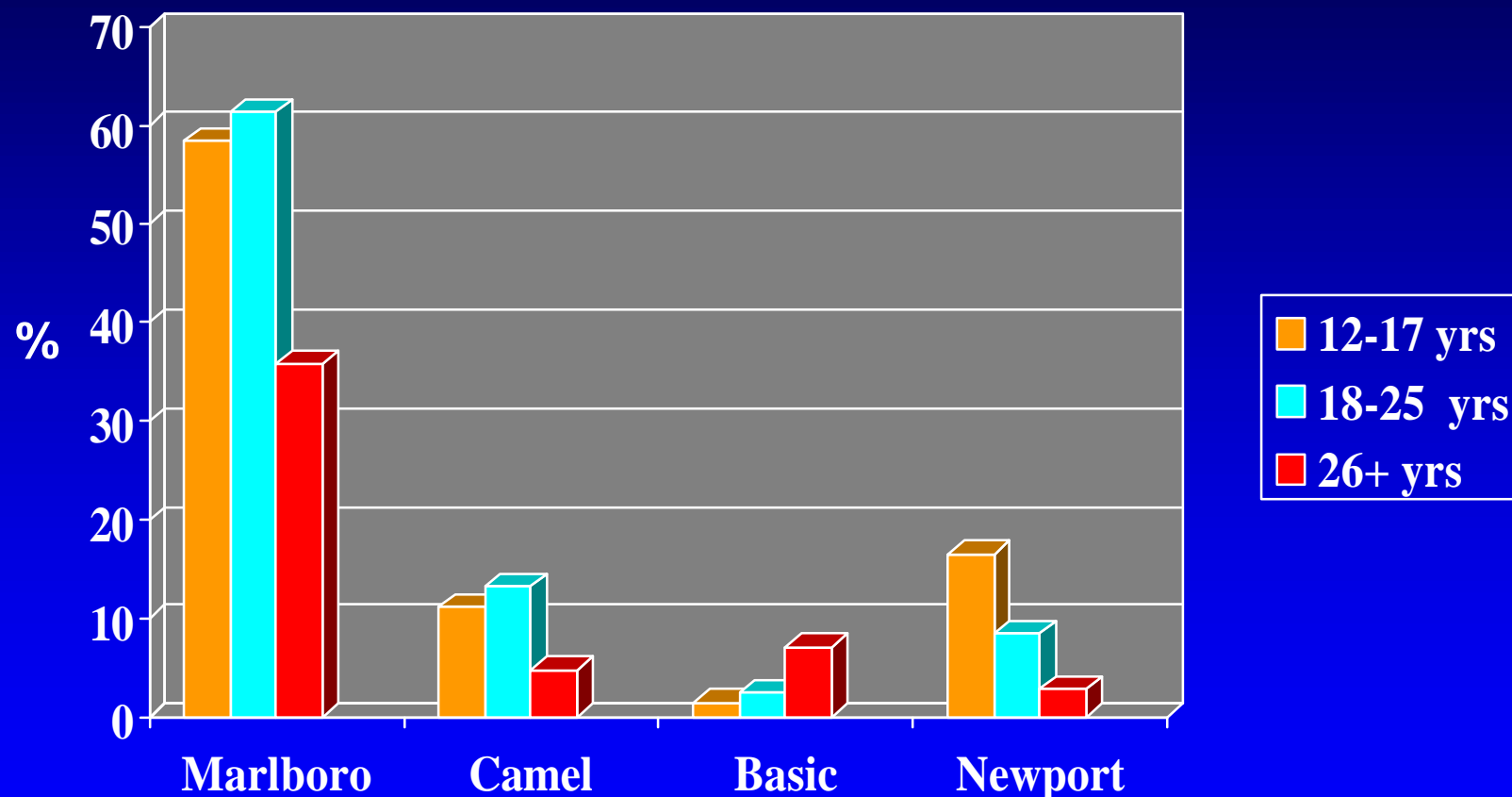
- **Sponsored by SAMHSA; conducted by RTI**
- **Collects information from residents of households, noninstitutional group quarters, and civilians living on military bases**
- **Redesigned in 1999**
- **50-state design (independent, multi-stage area probability sampling for each state and D.C.)**
- **Computer assisted interviews (CAI): CAPI and ACASI**
- **66,706 respondents in 1999; 71,764 respondents in 2000**
- **“During the past 30 days have you smoked part or all of a cigarette?”**
- **“During the past 30 days, what brand of cigarette did you smoke most often?”**
- **“During the past 30 days, did you smoke (brand) menthol or regular cigarettes most often?”**

# Percentage of Current Cigarette Smokers Who Smoke Marlboro, Newport, Kool, or Salem, by Age - United States, 2000



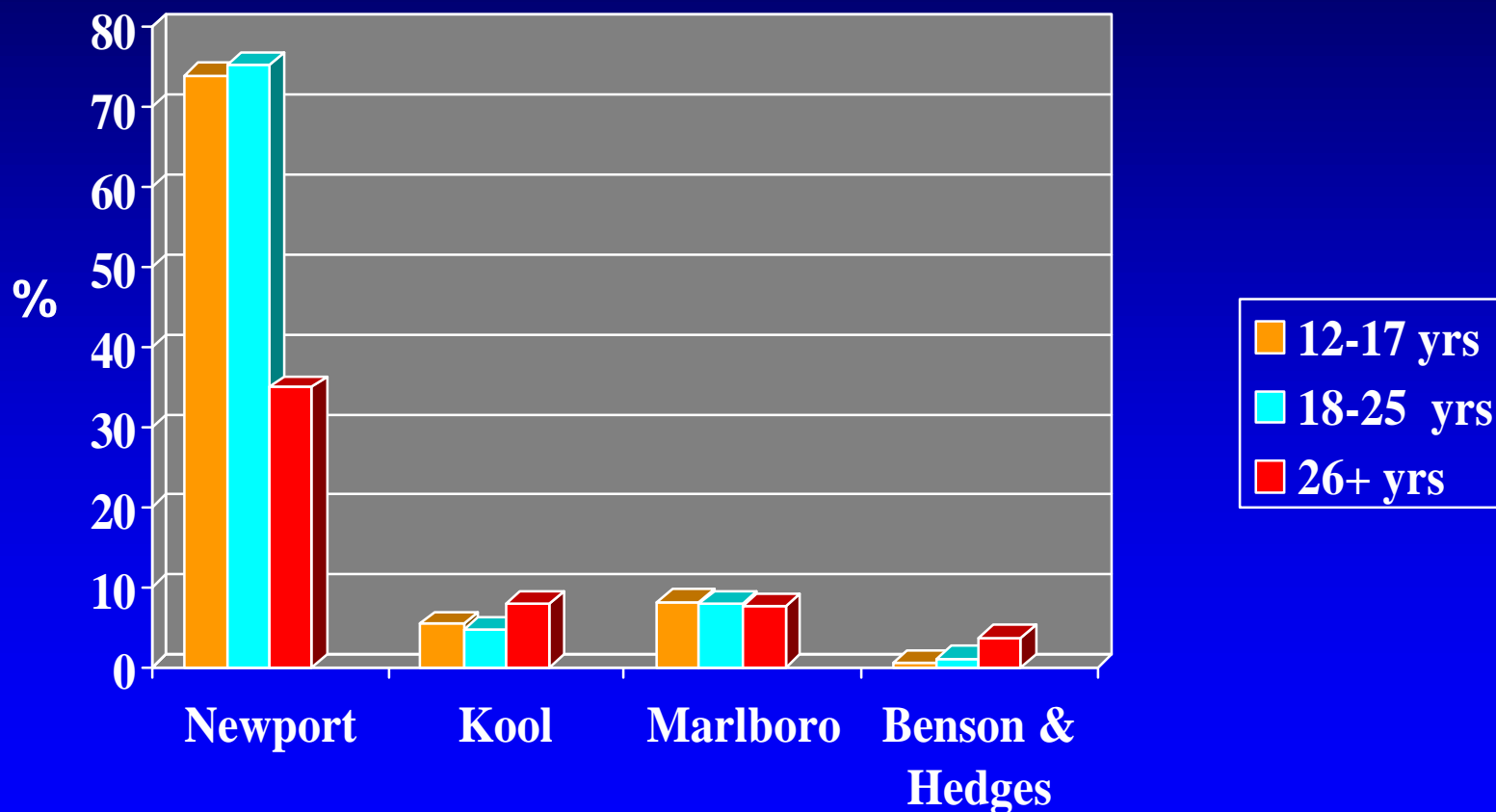
Source: SAMHSA; National Household Survey on Drug Abuse

# Four Leading Cigarette Brands Among White Smokers, by Age - United States, 1999



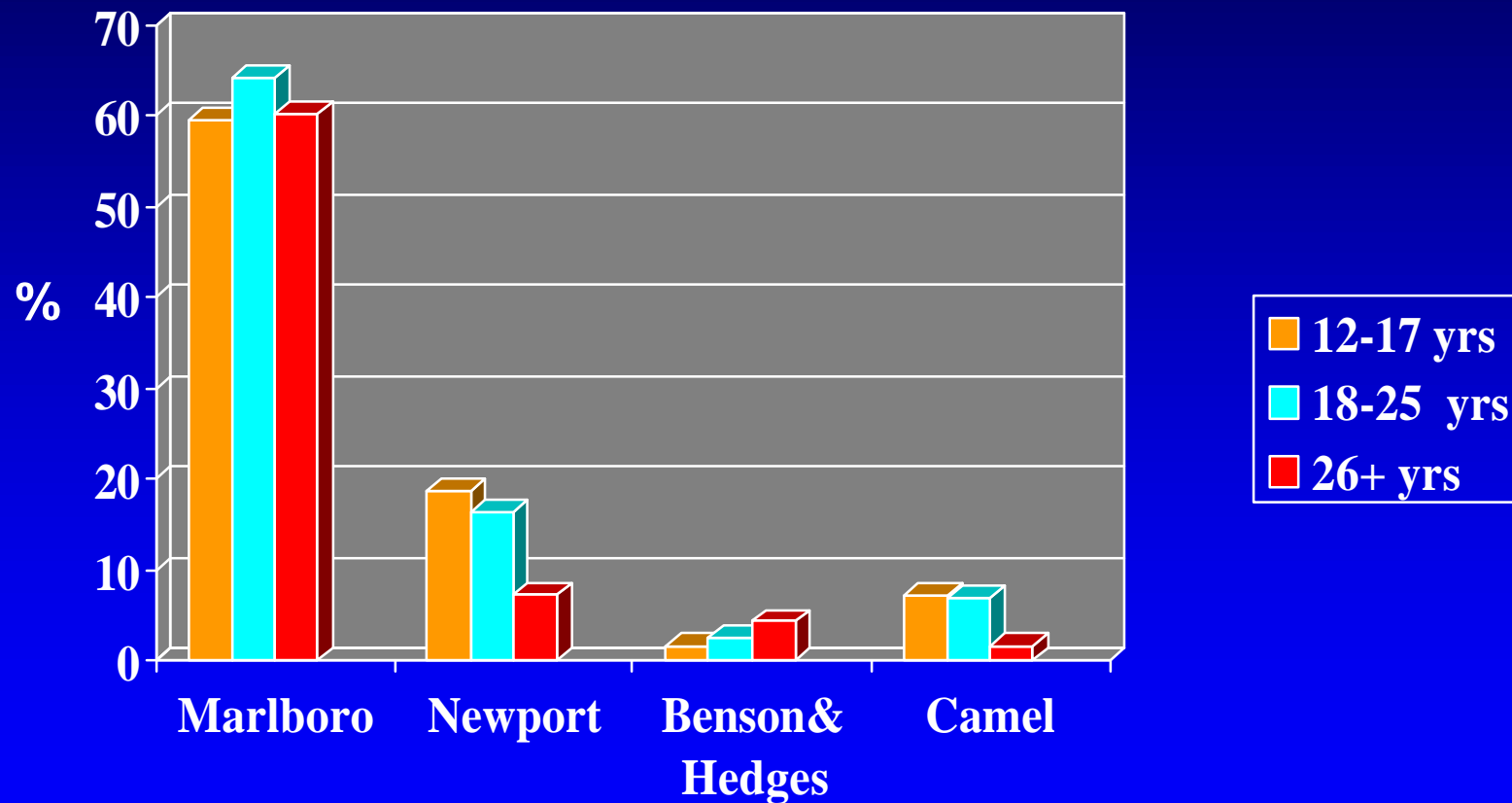
Source: SAMHSA; National Household Survey on Drug Abuse

# Four Leading Cigarette Brands Among African American Smokers, by Age - United States, 1999



Source: SAMHSA; National Household Survey on Drug Abuse

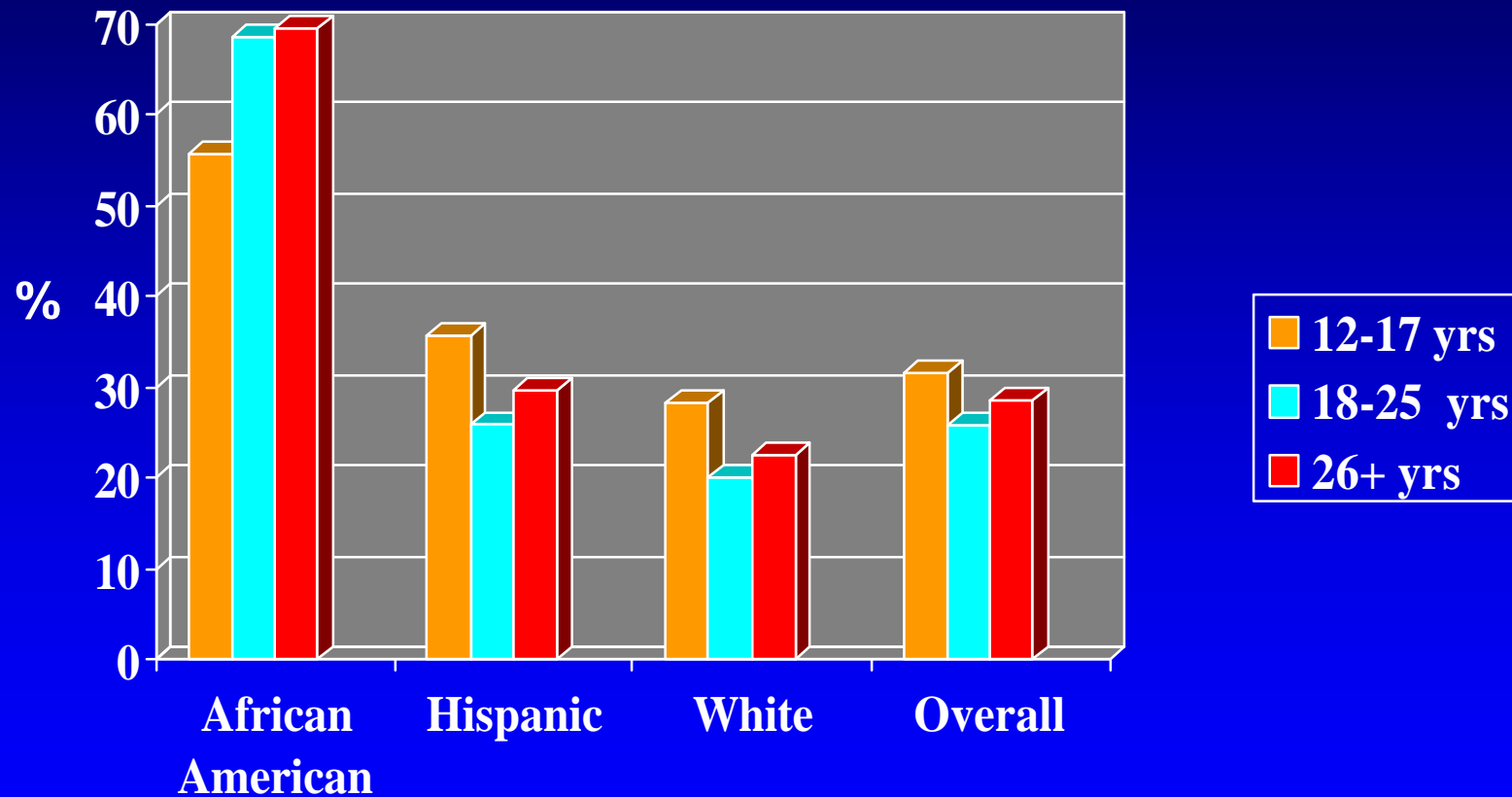
# Four Leading Cigarette Brands Among Hispanic Smokers, by Age - United States, 1999



Source: SAMHSA; National Household Survey on Drug Abuse

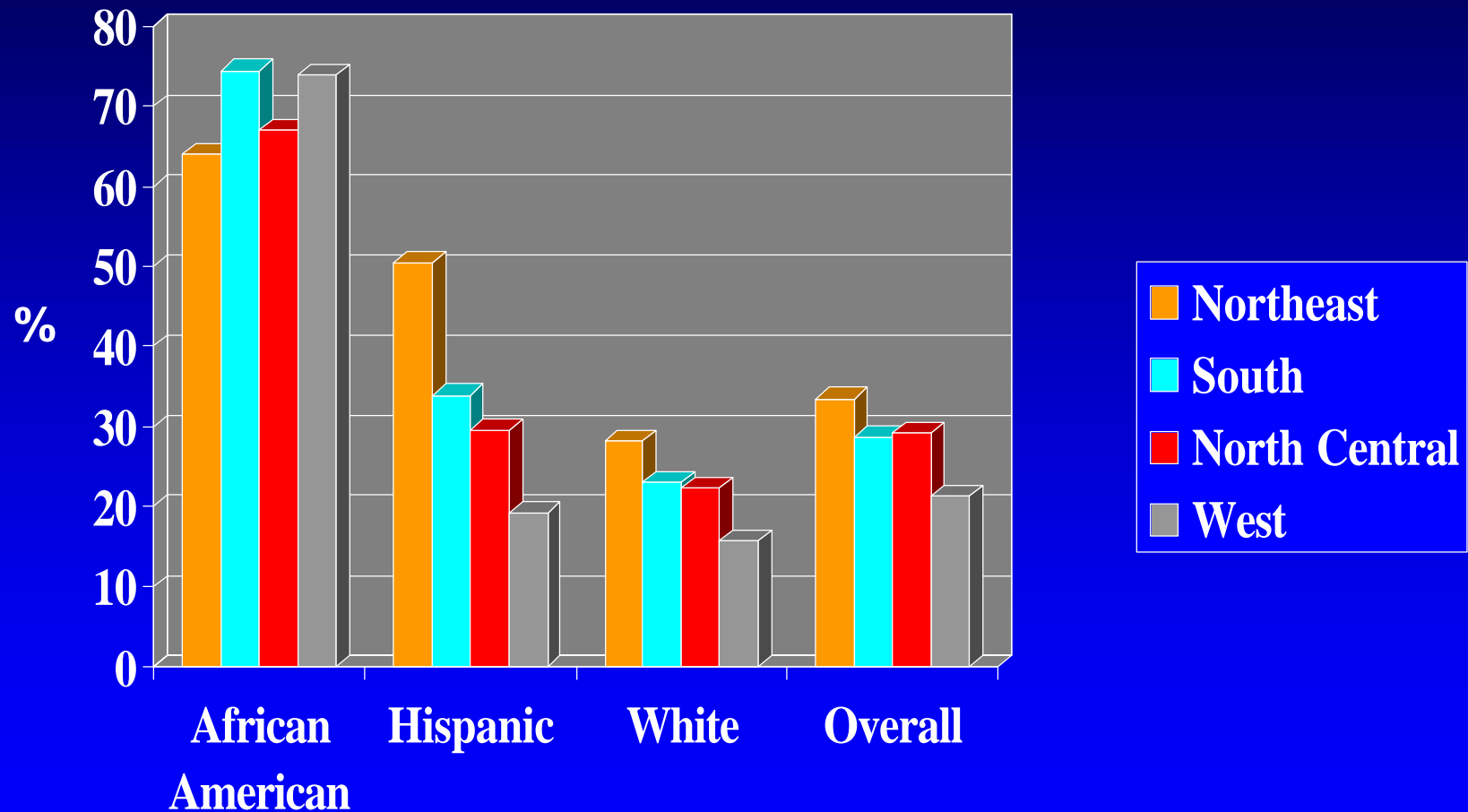


# Percentages of Current Smokers Who Smoked Menthol Cigarettes Most Often, by Age and Race/Ethnicity -- United States, 2000



Source: SAMHSA; National Household Survey on Drug Abuse

# Percentages of Current Smokers Who Usually Smoked Menthol Cigarettes, by Region and Race/Ethnicity -- United States, 2000



Source: SAMHSA; National Household Survey on Drug Abuse

# Results of 2000 NHSDA Multivariate Analyses

## **Menthol (vs. Non-Menthol) Smokers are More Likely to:**

- Smoke Cigars (in ages 12-17 and 18-25 years only)
- Use Blunts/Blobs (only assessed in 12-17 year olds)

## **Menthol (vs. Non-Menthol) Smokers are Less Likely to:**

- Believe their parents would disapprove of their smoking 1+ packs/day (assessed only in 12-17 year olds)

Analyses control statistically for: age, sex, race/ethnicity, number of days smoked/month, and number of cigarettes smoked/day

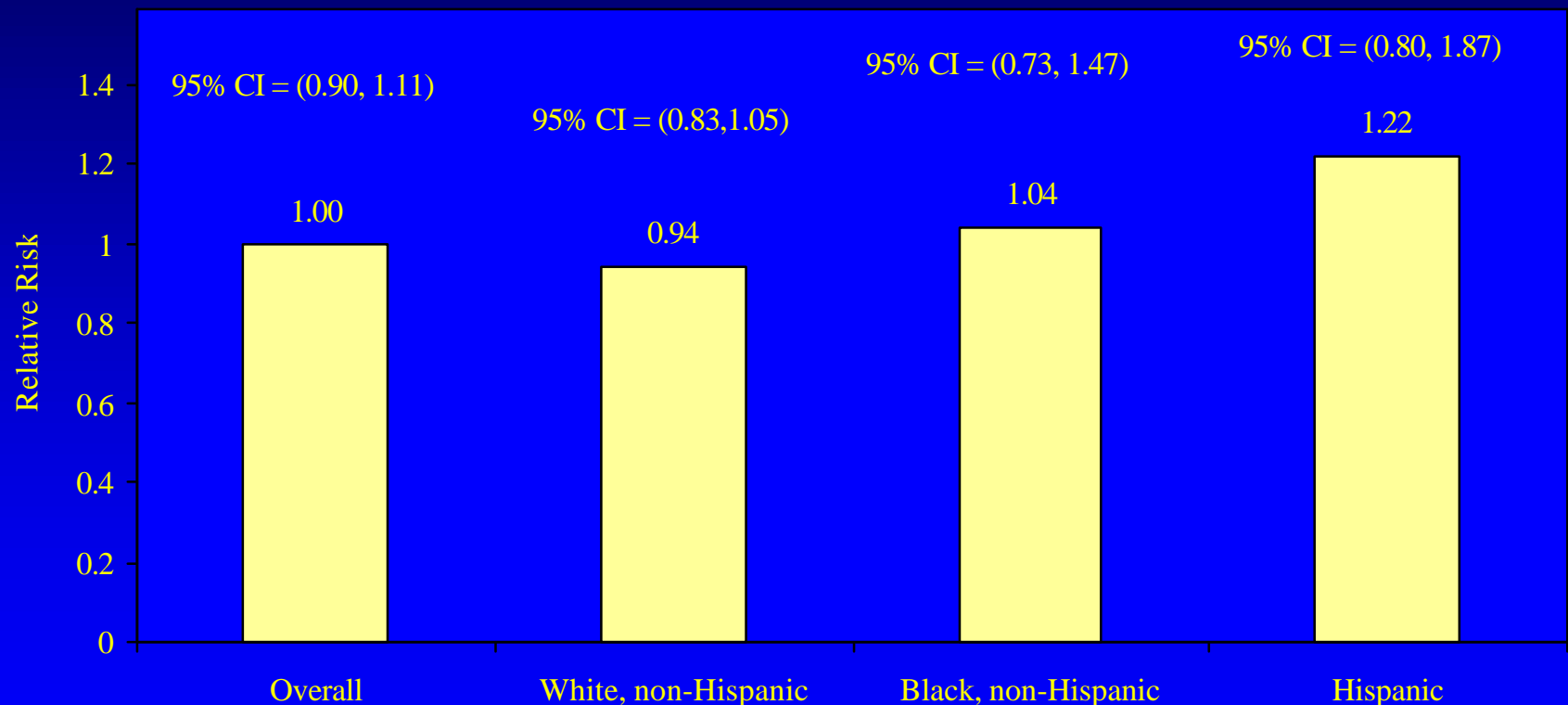
# Results of 2000 NHSDA Multivariate Analyses

## No Menthol vs. Non-Menthol Differences Observed In:

- Current smokeless tobacco use
- Current cigar use (ages 25+ only)
- Current marijuana use
- Current use of any other illicit drug
- 4+ withdrawal symptoms following a recent quit attempt
- Continuing to smoke despite having physical problems
- Recency of initiation (ages 12-17 and 18-25 years only)
- Disapproval of adult smoking (assessed in persons aged 18+ years only)
- Disapproval of adolescent smoking (assessed in persons aged 12-17 years only)

Analyses control statistically for: age, sex, race/ethnicity, number of days smoked/month, and number of cigarettes smoked/day

# Relative Risks for Menthol Use (1988) on Quitting (1993), by Race. From the COMMIT Cohort, N = 13,268.

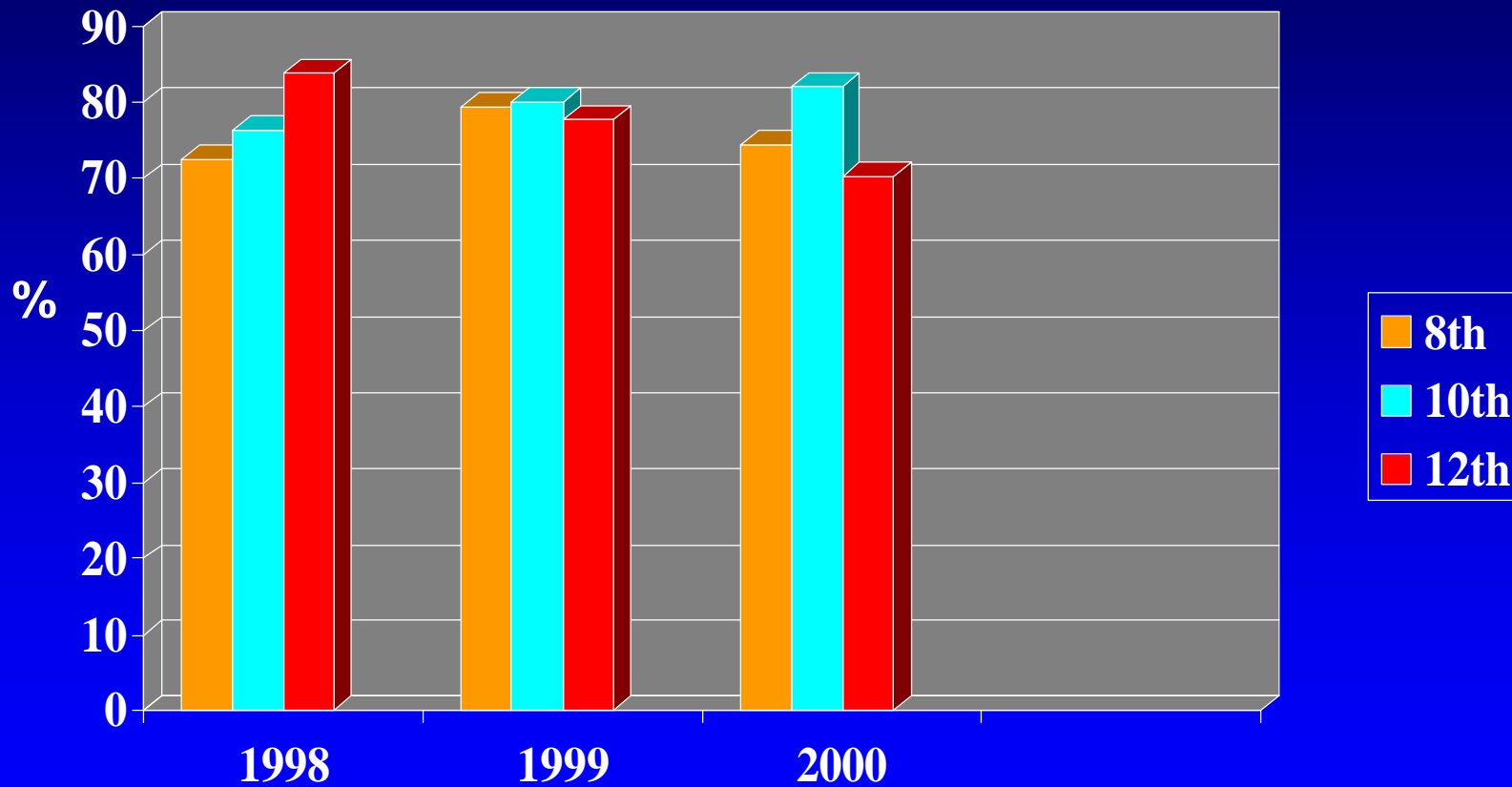


Source: Hyland, Garten, Giovino, Cummings. Mentholated Cigarettes and Smoking Cessation: Findings from COMMIT. *Tobacco Control* (In Press). NOTE: Analyses control for gender, age, race/ethnicity (in Overall model only), education, cigarettes smoked per day, time to first cigarette in the morning, history of past serious quit attempts, age started smoking, desire to stop smoking, frequency of alcohol consumption, use a non-cigarette tobacco product, pricing tier of cigarette smoked, and the presence of another smoker in the household.

# Monitoring the Future Surveys

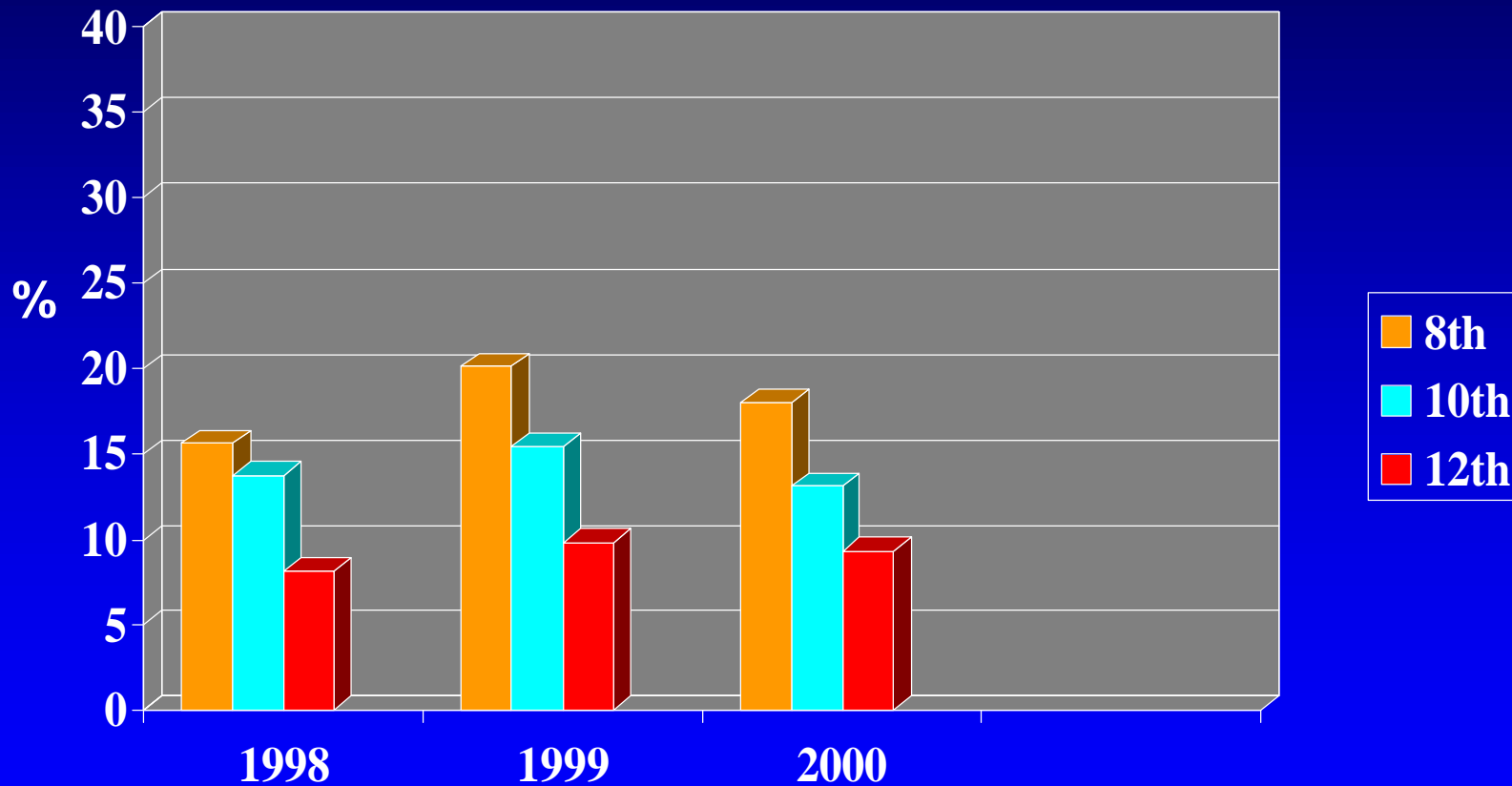
- Annual school-based surveys of 12<sup>th</sup> grade students since 1975; 8<sup>th</sup> and 10<sup>th</sup> grade students since 1991
- Conducted by the Institute for Social Research, University of Michigan; funded by a NIDA grants
- sample sizes in the 1990s range from 12,800 to 18,600 for each survey
- Brand question added in 1998 of persons who smoked at all during the previous 30 days: “What brand of cigarettes do you usually smoke?”
- 23 top brands listed, along with “Other” and “No usual brand”

# Percentage of African American Cigarette Smokers Who Smoked Newport, Kool, or Salem, by Grade - United States, 1998-2000



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

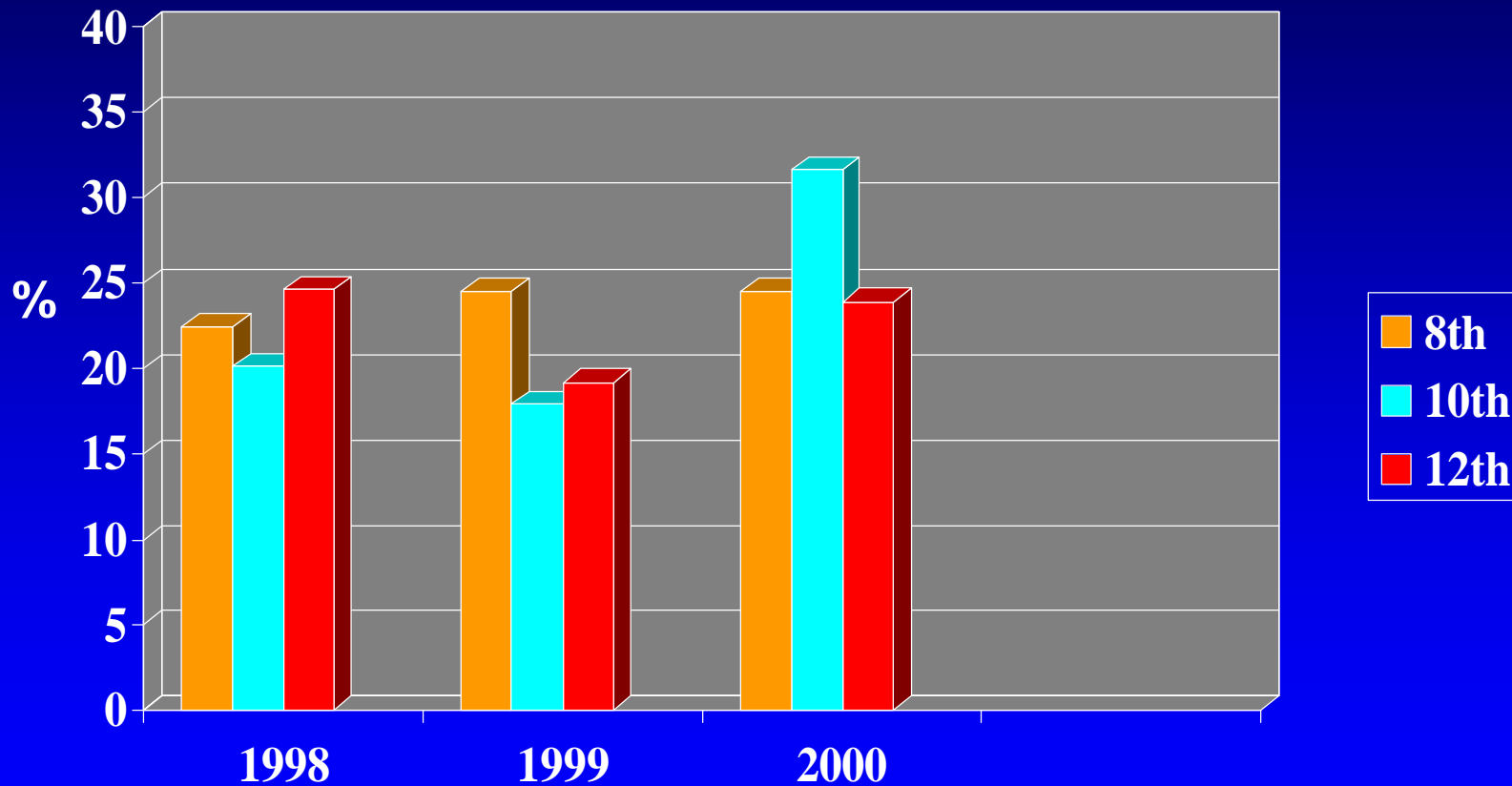
# Percentage of White Cigarette Smokers Who Smoked Newport, Kool, or Salem, by Grade - United States, 1998-2000



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



# Percentage of Hispanic Cigarette Smokers Who Smoked Newport, Kool, or Salem, by Grade - United States, 1998-2000



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

# **Results of 1998 – 2000 MTF Analyses of 12<sup>th</sup> Grade Students**

## **White Menthol (vs. Non-Menthol) Smokers are More Likely to:**

- Acknowledge smoking risks (70% of menthol smokers vs. 61% of non-menthol smokers acknowledge that smoking 1+ packs/day poses great risk to harm)**
- Have tried to stop smoking (38% of menthol smokers vs. 27% of non-menthol smokers have tried to stop)**
- Have ever tried an illicit drug (88% of menthol smokers vs. 77% of non-menthol smokers have ever tried an illicit drug)**

# **Results of 1998 – 2000 MTF Analyses of 12<sup>th</sup> Grade Students**

**No menthol vs. non-menthol differences (for either  
Whites or African Americans) were observed**

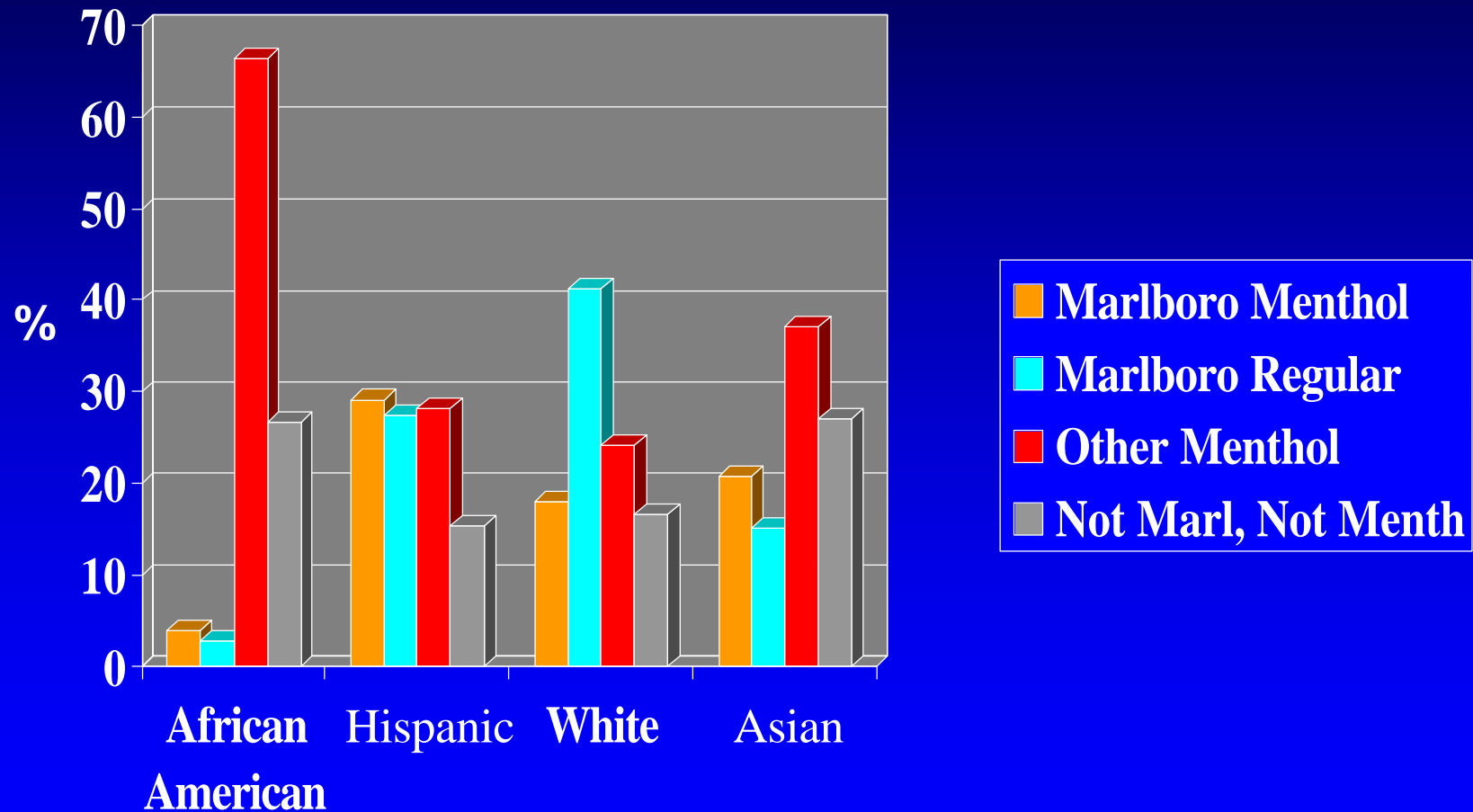
**in:**

- Current marijuana use**
- Current use of illicit drugs**

# National Youth Tobacco Surveys

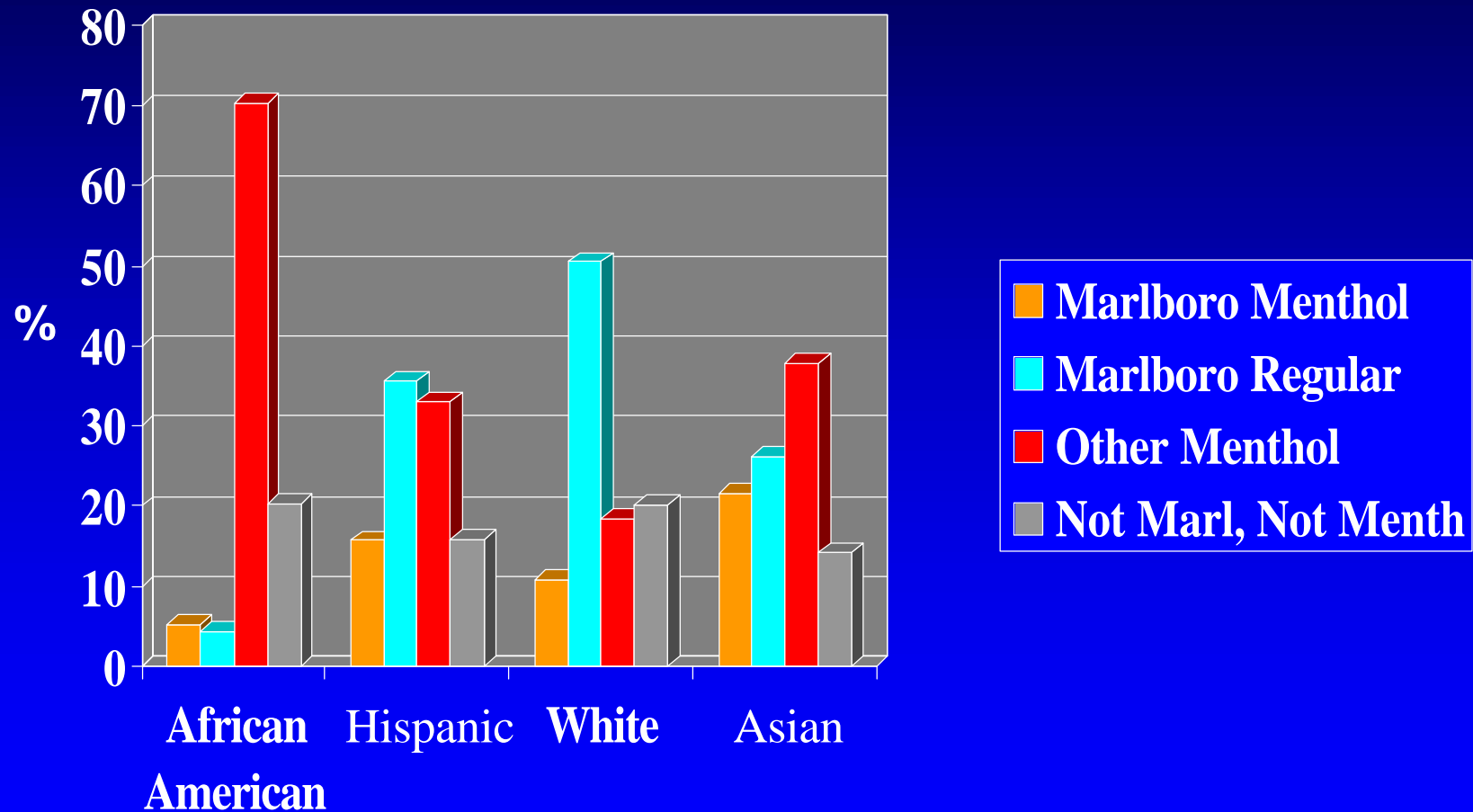
- **Focuses on tobacco-related beliefs, attitudes, and behaviors of youth**
- **Sponsored by the American Legacy Foundation; conducted by MACRO**
- **Three-stage cluster sample; 360 middle and high schools across the country**
- **35,828 students responded in 2000**
- **“During the past 30 days, on how many days did you smoke cigarettes?”**
- **“During the past 30 days, what brand of cigarettes did you usually smoke?”**
- **“Is the brand of cigarettes that you usually smoked during the past 30 days mentholated?”**

# Percentages of Current Middle School Smokers by Menthol/Marlboro Status and Race/Ethnicity – United States, 2000



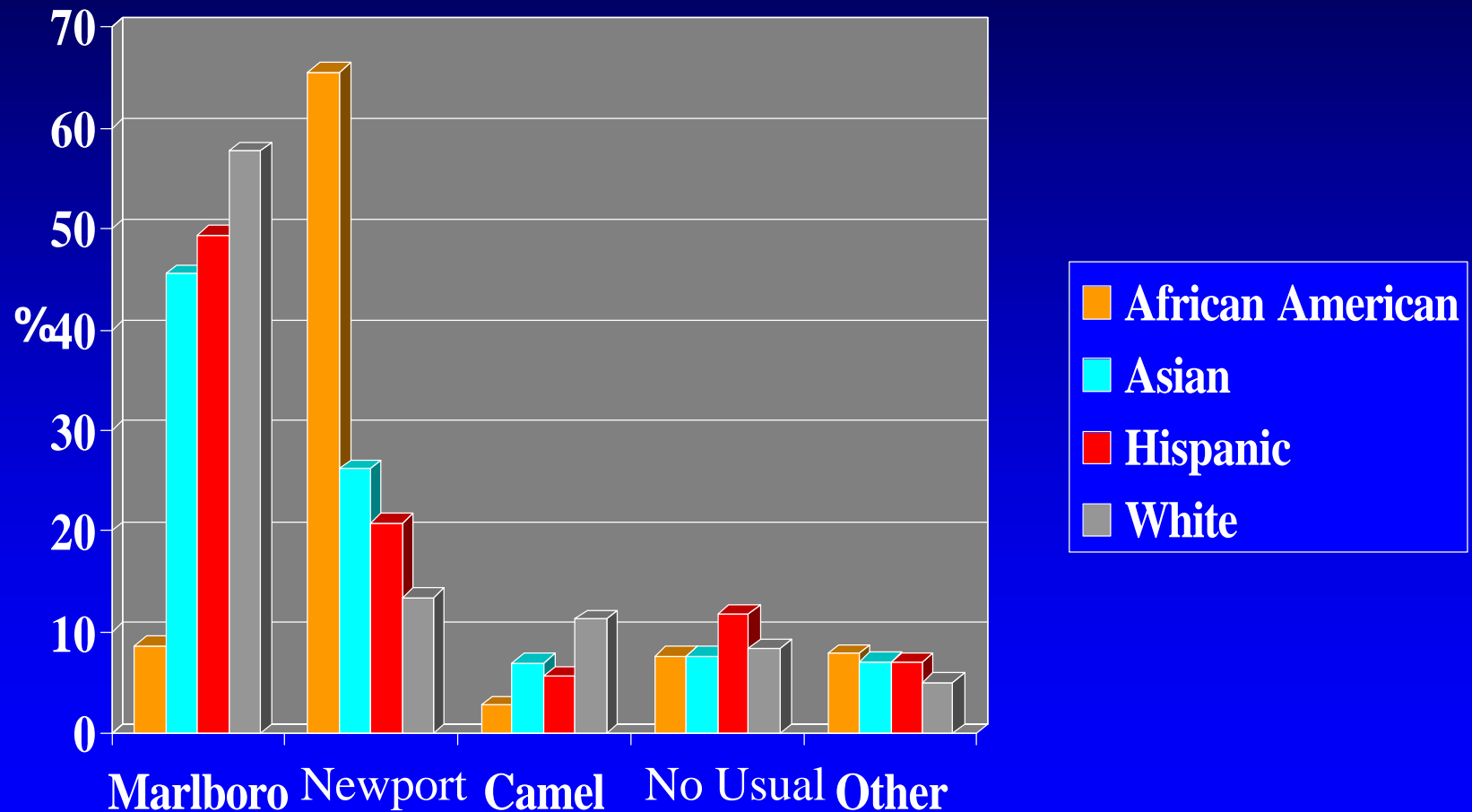
Source: American Legacy Foundation; National Youth Tobacco Survey

# Percentages of Current High School Smokers by Menthol/Marlboro Status and Race/Ethnicity – United States, 2000



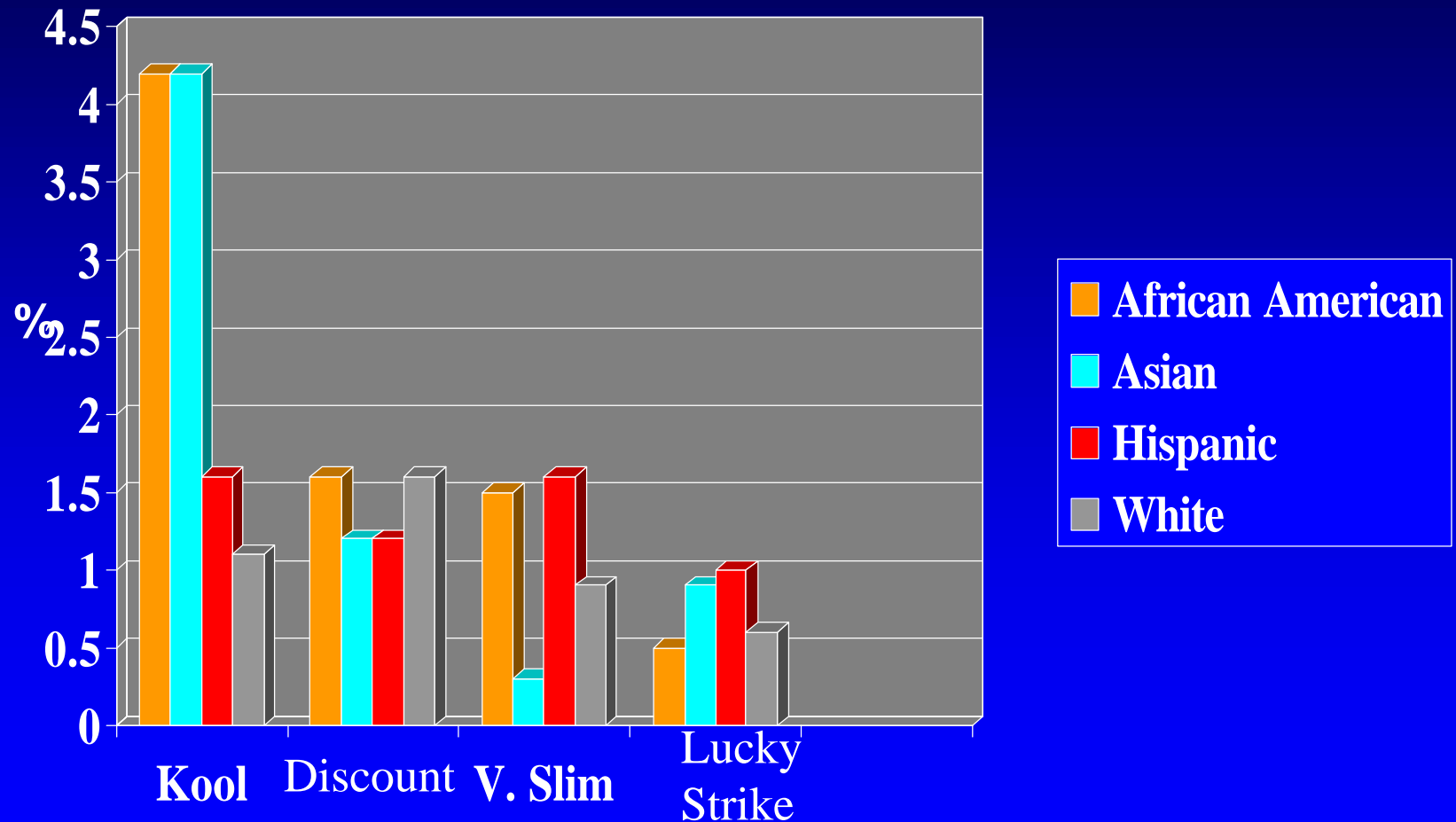
Source: American Legacy Foundation; National Youth Tobacco Survey

# Percentages of Current Middle and High School Smokers by Brand and Race/Ethnicity - United States, 2000



Source: American Legacy Foundation; National Youth Tobacco Survey

# Percentages of Current Middle and High School Smokers by Brand and Race/Ethnicity (Continued) -- United States, 2000



Source: American Legacy Foundation; National Youth Tobacco Survey; Discount = GPC/Basic/Doral



# Summary/Conclusions

- **Menthol use increased slowly from 1963 to 1976 and declined slightly from 1988-1999. In 1999, mentholated cigarettes accounted for about one-fourth of cigarette market share. Other product innovations have become more common.**
- **First Salem, the Kool, then Newport have had substantial market shares. Marlboro Menthol appears to be emerging.**

# Summary/Conclusions

- **In at least 18 countries, menthol brands account for  $\geq 5\%$  of market share. Menthol use is most common among smokers in the Philippines.**
- **In the United States, menthol use is most common among African American smokers of all ages. Newport dominates market share.**
- **Menthol use is more common in the Northeast and least common in the West.**

# Summary/Conclusions

- **Adolescent menthol (vs. non-menthol) smokers were more likely to smoke cigars and blunts/blobs. Young adult menthol smokers were more likely to smoke cigars.**
- **12<sup>th</sup> grade menthol (vs. non-menthol) smokers were more likely to perceive smoking as risky, have tried to stop, and have ever tried illicit drugs.**
- **However, menthol smokers were not more likely than non-menthol smokers to currently use illicit drugs or smokeless tobacco.**

# Summary/Conclusions

- **Menthol smokers were not more likely to report indicators of dependence following a recent quit attempt. Nor were they less likely to quit smoking in a recent cohort study.**
- **Adolescent menthol smokers were less likely to believe their parents would disapprove of their smoking.**

# Summary/Conclusions

- **Surveillance and research on product formulation and marketing would better inform patterns of use and potentially identify prevention/cessation strategies.**
- **Research on individual beliefs about menthol cigarettes would assess the extent and nature of any misperceptions about these products.**