

MARKETING

Marketing Data

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**Meeting of the Tobacco Products Scientific Advisory Committee
July 15-16, 2010**

Discussion Topics

- **Key Points**
 - Industry and Menthol cigarette volume is declining
 - Over the last 30 years, industry and menthol volume has decreased by 49%
 - Lorillard does not market its cigarettes to youth
 - Lorillard markets its cigarettes to all adult smokers

Lorillard Marketing Overview

- **Core Marketing Principles**
- Lorillard's marketing complies with all applicable legal/regulatory requirements and restrictions, including all state settlement agreements
- Lorillard's marketing activities are in response to consumer demand for its cigarettes
 - Newport represents almost 90% of Lorillard's total sales
- Lorillard's marketing activities are carefully targeted to adult smokers
 - Lorillard does not market to nonsmokers or youth

Lorillard Marketing Overview

- **Core Marketing Objectives**
 - Maintain loyalty of Lorillard brand smokers
 - Convert competitive smokers to a Lorillard brand

Advertising & Promotion Activities

- Retail Price Promotions
- Direct Marketing
- Print Advertising
- Retail Point of Sale
- Each of Lorillard's marketing tools is lawful and consistent with marketing activities used by numerous consumer product companies

Retail Price Promotions

- Comprises over 90% of Lorillard's marketing expenditures
- Only legally available to adult smokers
 - Implemented at retail only
 - 18+ required to purchase
- Segmented state-wide based on
 - Newport share development
 - State excise taxes
 - Competitive volume
- Availability and amount of Lorillard's price promotions are not, in any way, based on ethnicity

Direct Marketing

- Lorillard's direct marketing activities are exclusively restricted to
 - Smokers
 - Age verified 21+
 - Who have opted to receive information from Lorillard
- Direct marketing components
 - Direct mail (primarily coupons)
 - Pleasure Scene magazine
 - www.newportpleasure.com
- Smoker ethnicity plays no role in Lorillard's direct marketing strategies
 - Lorillard does not collect ethnicity information for the adult smokers on its direct mail database

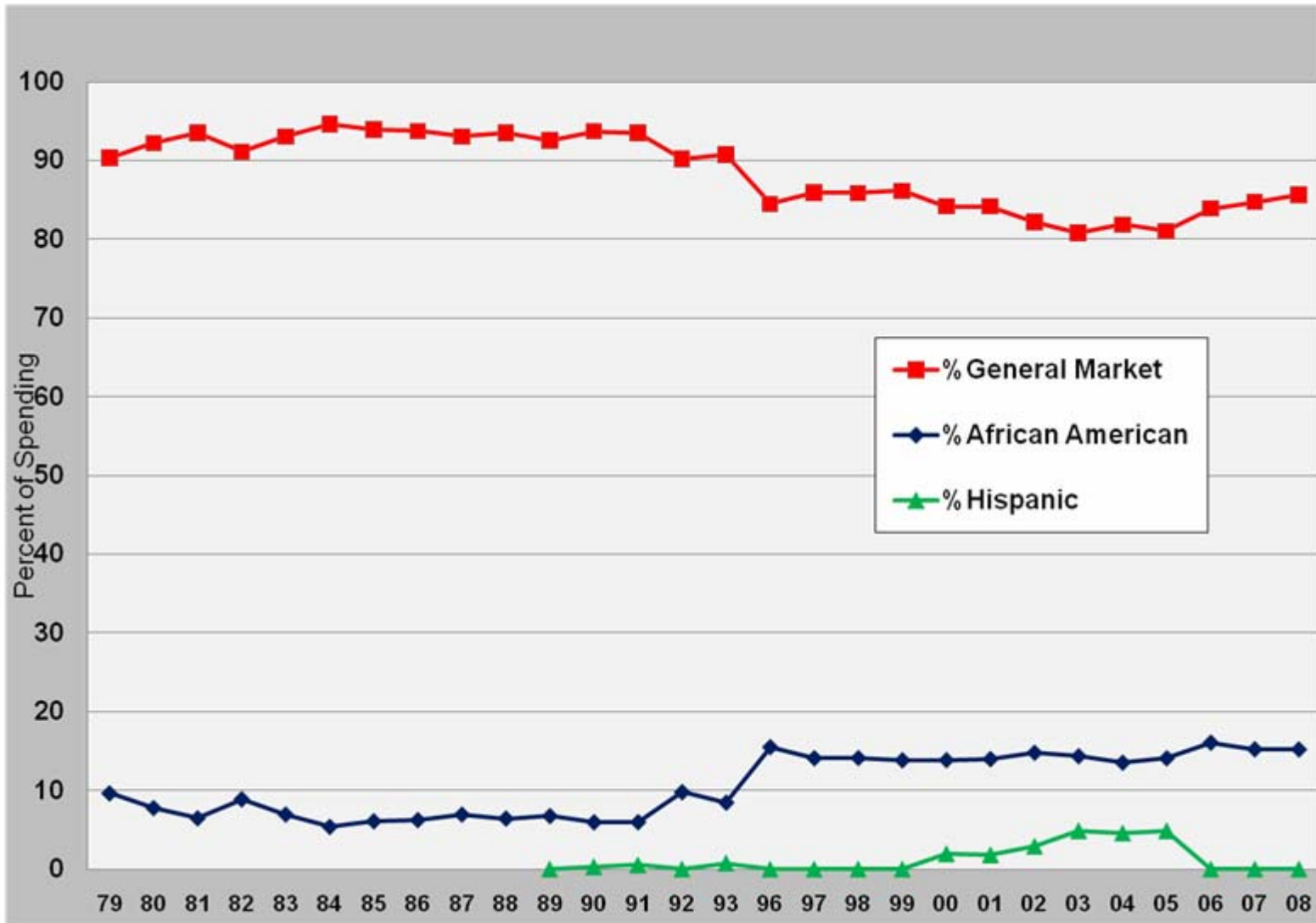
Print Advertising

- Lorillard's print ad spending is near a 40-year low
 - Billboards, transit and stadium ads banned in 1998
 - 2009 magazine spending was less than 1% of Lorillard's marketing budget
- Lorillard's print ads only appear in magazines targeted to adults
 - Less than 15% - 2 million youth readership
 - All magazines are selected to reach menthol smokers (21+) and Newport smokers (21+)

Print Advertising

- Smoker ethnicity does play a role in Lorillard's print advertising
 - Lorillard places ads in both general market and African American magazines that reach adult menthol smokers
 - Newport ads are, and have been, predominately directed to the general market
 - Not disproportionately weighted toward African Americans or any other ethnic group

Newport Magazine Ad Spending



Retail Point of Sale

- Lorillard uses retail point of sale to identify brand availability and price
 - Lorillard uses point of sale in only about 34% of all retail locations that sell cigarettes
 - Since 1998, point of sale spending has been cut more than 60%, from \$22 million to about \$8 million
- Point of sale availability is the same across all stores based on cigarette sales
 - Point of sale is not dependent on geography or demographics
 - Outdoor point of sale is not required by Lorillard



RESEARCH & DEVELOPMENT

Clinical Effects of Menthol

Dr. William R. True

Senior Vice President, Research and Development

Lorillard Tobacco Company

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Lorillard Product Research

- TPSAC asked for information from the industry on several topics related to the “clinical effects of menthol”
- Lorillard has not conducted research in most of the areas in which TPSAC expressed interest
- Lorillard simply seeks a balance between tobacco and menthol taste, and we use our internal expert smokers to design products in response to consumer preferences

Lorillard Product Development

- For traditional cigarettes, the process of identifying opportunities and developing new product concepts is not highly technical
- Cigarette taste is subjective and cannot be precisely engineered
- Lorillard focuses on taste and overall adult consumer acceptability in developing products
- For Lorillard, our unique cigarette taste is defined primarily by special select grades of tobacco

Lorillard Product Development

- Menthol in Lorillard brands is simply intended to complement the tobacco taste signature
- Lorillard's product developers try to maintain a particular balance between tobacco taste and menthol taste for each distinct brand
 - Newport was designed to have the “perfect” balance of premium tobacco taste and menthol taste
- Assertions that Lorillard's use of menthol is intended to create specific and measureable physiological responses in smokers are not correct

Lorillard Product Development

- Developing a new cigarette product or improving an existing product involves an iterative process
- This process often relies on trial and error to achieve the right balance of taste components
- Lorillard uses internal expert smokers with highly sensitive palates to develop and evaluate products
- Product development must balance the various design features to optimize taste

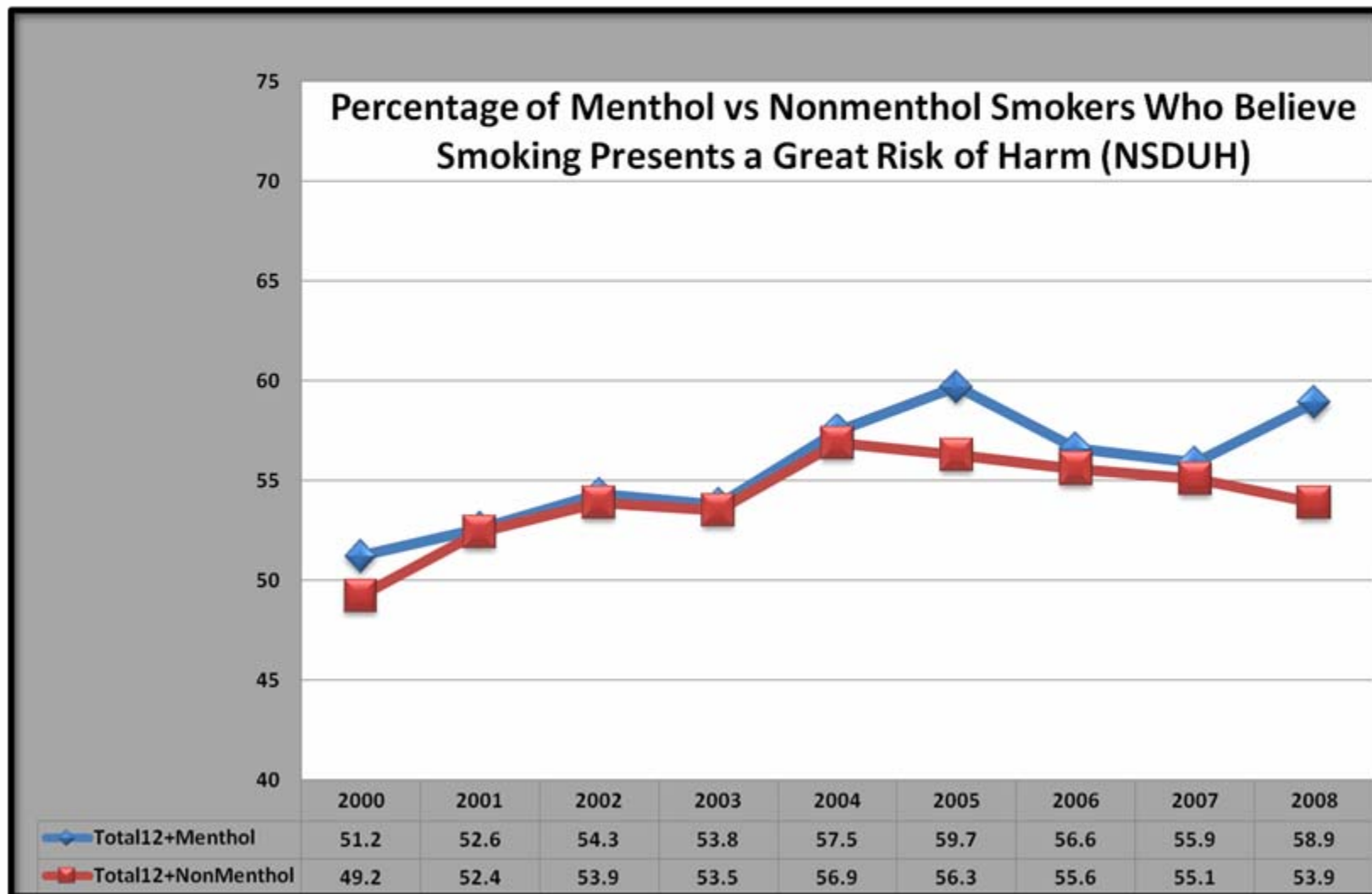
Menthol Product Development

- Lorillard's expert smokers have defined terms to assist them in expressing the taste characteristics of cigarettes being evaluated
- For example, there is a wide spectrum of perceived "harshness" in both menthol and nonmenthol cigarettes
- The primary factors that affect cigarette "harshness" are the tobacco blend, moisture and filter ventilation, not menthol
- Lorillard product developers do not use menthol to decrease or mask the harshness of a cigarette

Lorillard Research

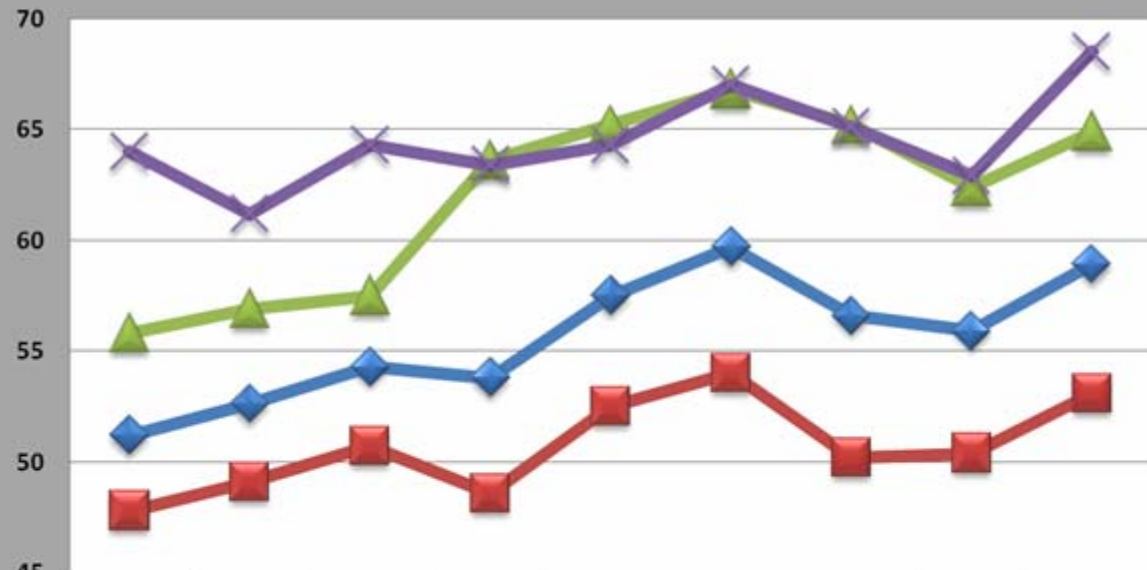
- Recent Lorillard *in vitro* studies investigated
 - Whether menthol inhibits metabolism of nicotine, polycyclic aromatic hydrocarbons and nitrosamines
 - Menthol cytotoxicity and genotoxicity
- Levels of menthol delivered by a typical menthol cigarette affect neither metabolism of nicotine, PAHs or nitrosamines nor cytotoxicity and genotoxicity
- Menthol significantly inhibited an index of double-strand DNA breaks induced by cigarette smoke exposure

Menthol smokers perceive a greater health risk of smoking than nonmenthol smokers (NSDUH 2000-2008)



Hispanic and African-American menthol smokers perceive a greater risk of harm from smoking than White menthol smokers (NSDUH 2000-2008)

Percentage of Menthol Smokers by Race Who Believe Smoking Presents a Great Risk of Harm (NSDUH)



	2000	2001	2002	2003	2004	2005	2006	2007	2008
◆ Total12+Menthol	51.2	52.6	54.3	53.8	57.5	59.7	56.6	55.9	58.9
■ White12+Menthol	47.8	49.1	50.7	48.6	52.5	54	50.2	50.4	53.1
▲ AfrnAmer12+Menthol	55.8	56.9	57.5	63.6	65.2	66.8	65.2	62.4	64.9
✕ Hispanic12+Menthol	64	61.2	64.3	63.4	64.3	67	65.1	62.9	68.5

Consumer Perception of Risk of Menthol Cigarettes

- Smokers do not perceive menthol cigarettes as less hazardous than nonmenthol cigarettes
- Wackowski *et al.* (2010)
 - 30.2% of menthol smokers believed menthol cigarettes were more risky than nonmenthol cigarettes
 - Only 2.4% of menthol smokers thought menthol cigarettes were less risky than nonmenthol cigarettes

Clinical Effects of Menthol - Summary

- Lorillard recognizes the interest of TPSAC in understanding the potential impact of menthol on public health
- These interests are best addressed by appropriate research that seeks to directly measure exposures and effects resulting from smoking
- Biomarker studies of exposure and putative risk provide the most relevant information to inform such risks



RESEARCH & DEVELOPMENT

Characterization of Menthol

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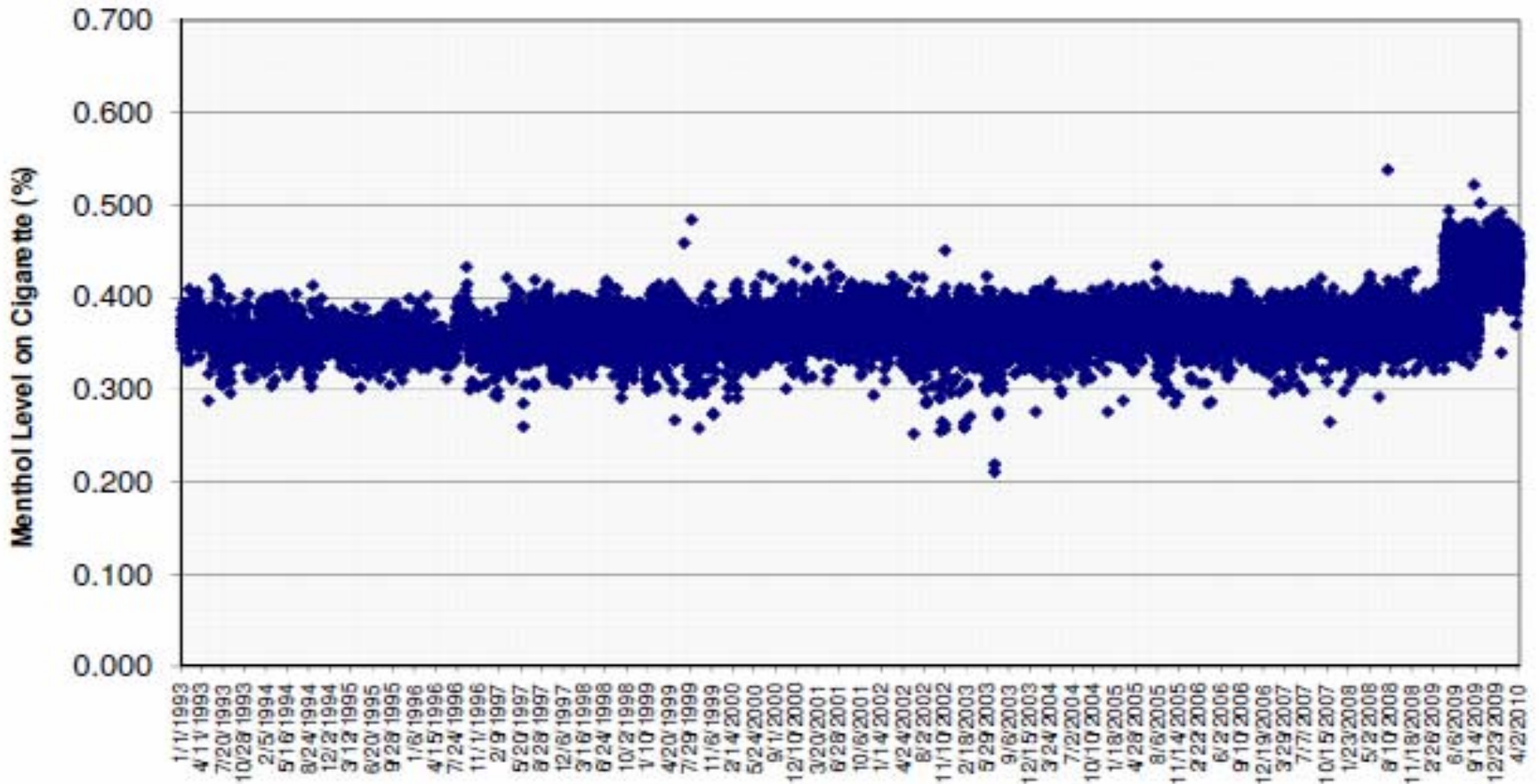
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Newport

- Lorillard has manufactured and sold Newport cigarettes for over 5 decades, since 1957
- Newport was reformulated in 1972 to address declining market share
 - In 1993, Newport became the best selling menthol brand in the U.S.
- After the 1972 reformulation, the amount of menthol in Newport Full Flavor King Box (Lorillard's most popular brand packing) did not change substantially for over thirty five years from 1972 to 2009

Newport Full Flavor 80mm Menthol Level (1993-2010)

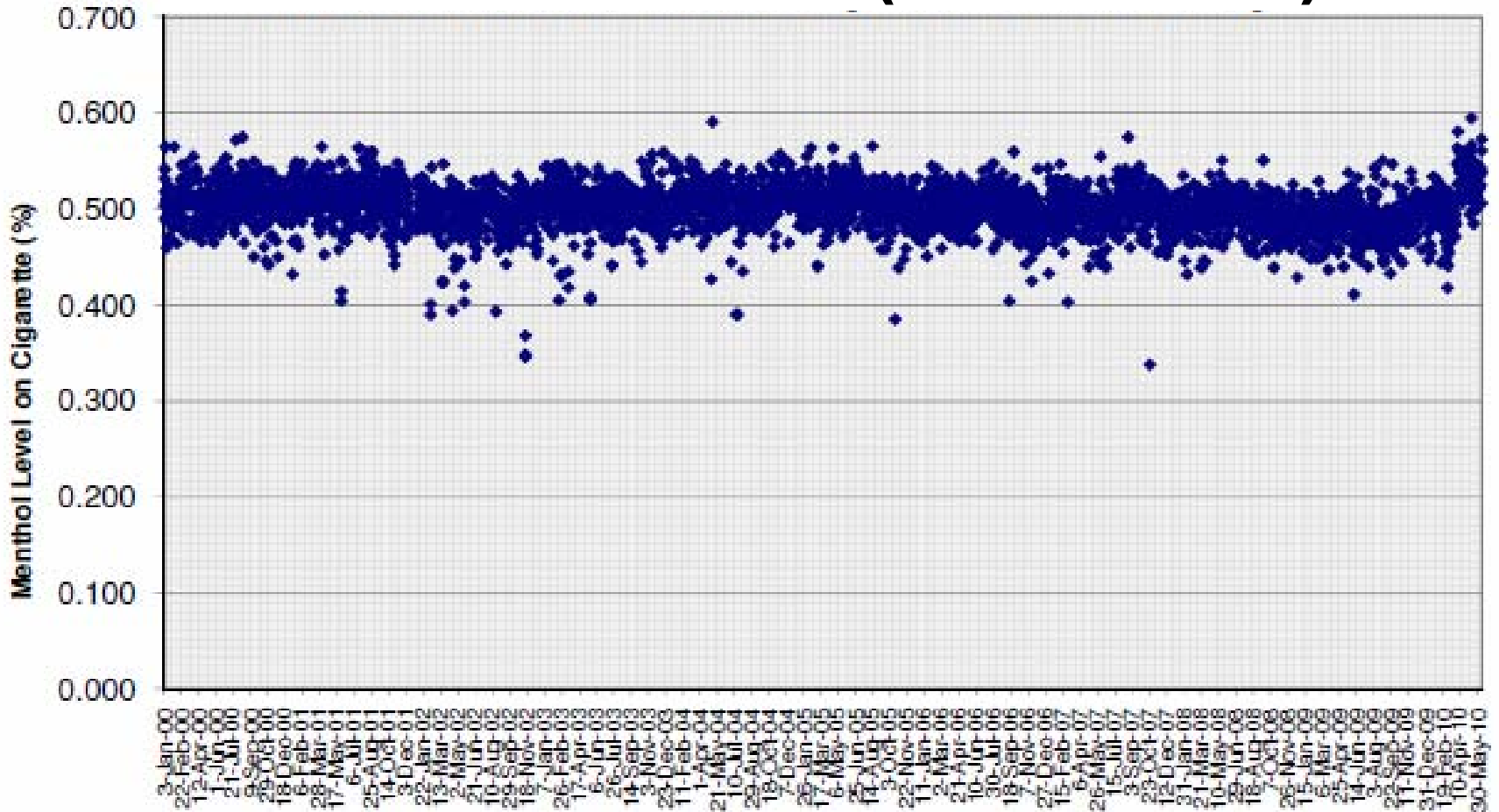


Other Lorillard Menthol Brands

- Lorillard also currently manufactures menthol versions of Kent, Old Gold, Maverick and True
- Over the years, Lorillard has manufactured over 65 menthol brands
- As an example of other Lorillard menthol brands, the amount of pack menthol in Newport Lights* has also remained stable

*Lorillard no longer uses the descriptor “lights” on its cigarettes

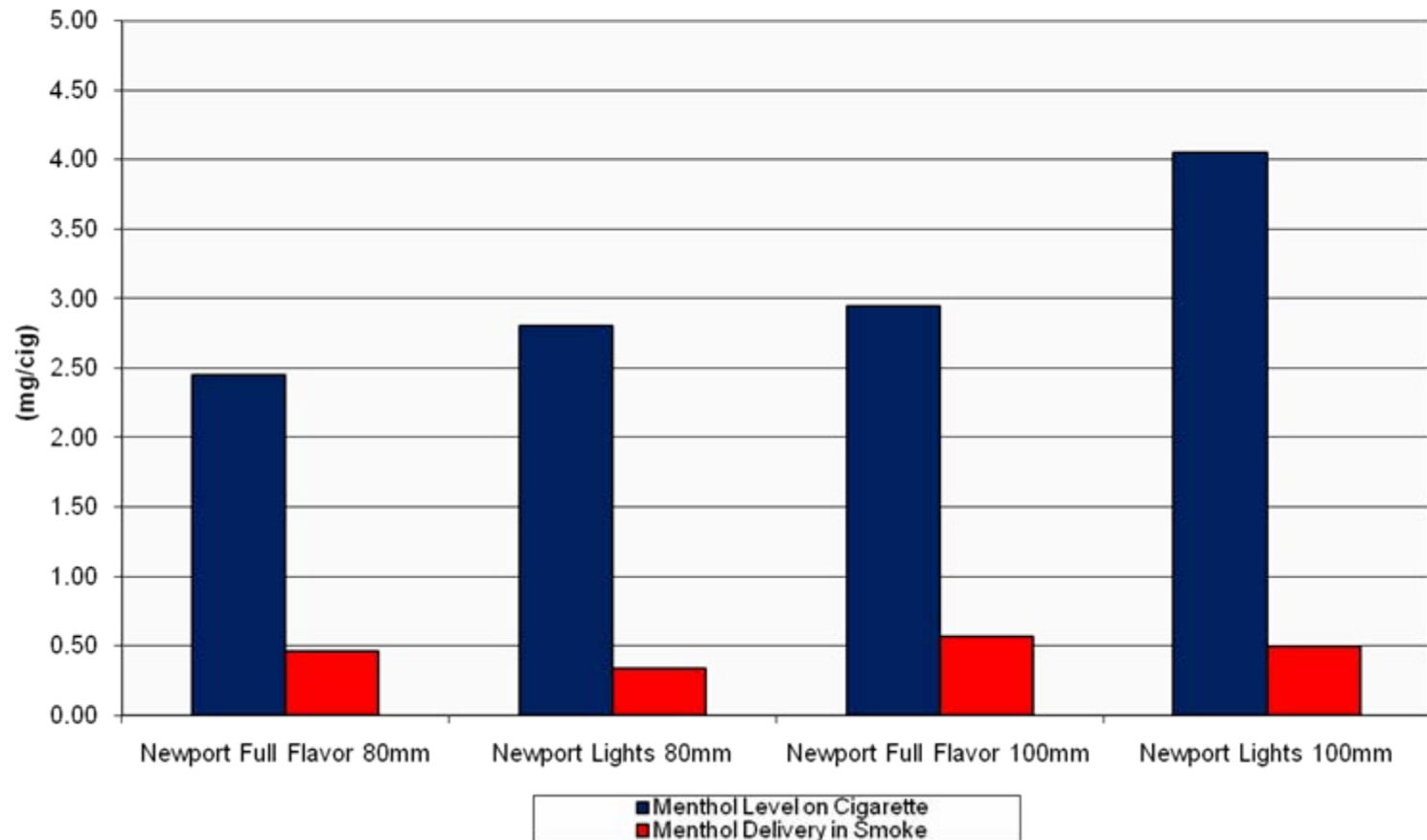
Newport Lights 80mm Menthol Level (2000-2010)



Cigarette Design Variables

- Increased filter efficiency decreases menthol in smoke
- Increased ventilation decreases menthol in smoke
- Menthol is transferred at a similar rate as “tar” and nicotine
- As a result, the pack menthol of Lorillard’s lower “tar” cigarettes, such as Newport Lights, is higher than Newport
- 20% of the menthol in Newport is transferred to smoke
- 12% of the menthol in Newport Lights is transferred to smoke

Menthol Level on Cigarette (mg/cig) & Menthol Delivery in Mainstream Smoke (mg/cig)

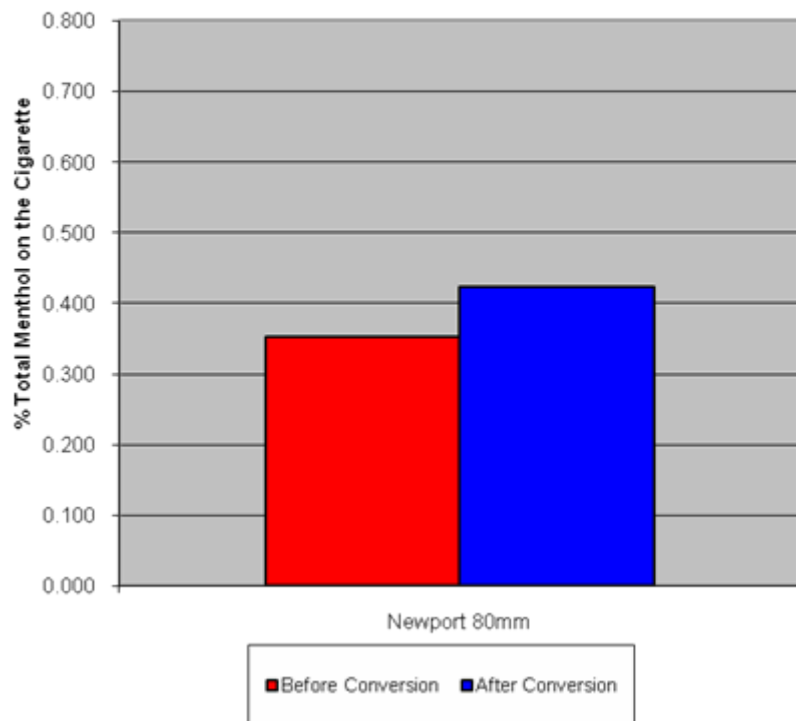


Compliance with Fire Standard

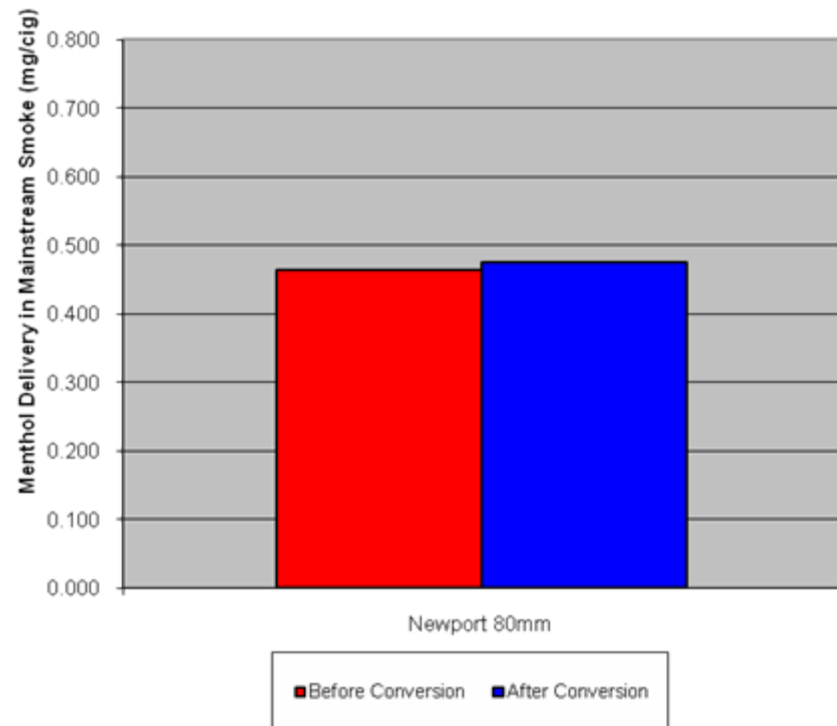
- New cigarette paper caused slightly higher “tar” deliveries
- In 2009, Lorillard initiated an effort to reduce “tar” levels to pre-fire standard compliant levels
- Increased filter efficiency or ventilation to lower “tar” required more menthol to maintain consistent taste
- Despite changes in pack menthol, the smoke menthol of Newport did not change

Newport Smoke Menthol Levels Pre- and Post-Fire Standard

% Total Menthol on the Cigarette Before and After Newport Full Flavor 80mm Product Conversions to Support Fire Standard

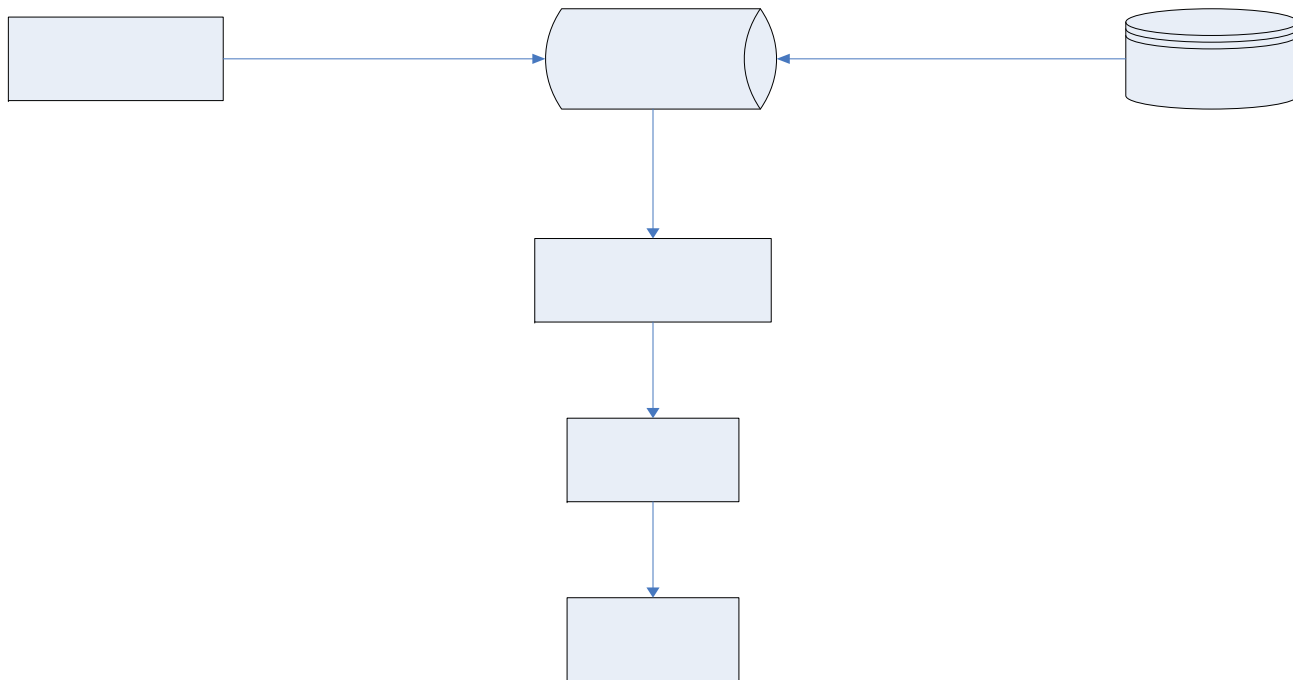


Menthol Delivery in Mainstream Smoke Before and After Newport 80mm Product Conversions to Support Fire Standard



Lorillard Menthol Application

- Menthol in Lorillard brands is applied by spraying the cut tobacco blend with menthol in an ethyl alcohol solution



Synthetic Menthol

- Lorillard uses a mixture of synthetic and natural menthol in most of its menthol cigarettes
- Synthetic menthol has different taste characteristics than natural menthol
- Sources of natural and synthetic menthol may also contribute to different taste characteristics

Menthol Levels

- Lorillard does not use a specific level of menthol to classify cigarettes as menthol cigarettes
- The menthol level in Lorillard menthol cigarettes is readily discernable by consumers
- Lorillard does identify the optimal level of menthol to complement the tobacco taste signature of each of its menthol brands
- The ultimate determination of menthol level is based on consumer preference

Menthol Levels

- Individuals differ considerably (3 orders of magnitude) in their ability to taste, smell and sense the cooling properties of pure menthol (Rosenblatt *et al.* (1989))
- Recent Lorillard research indicates that menthol is generally detectable by consumers at a level of 0.12% menthol in the tobacco blend
- Lorillard's internal expert smokers and some consumers detect menthol at lower levels
- The amount of menthol used as a characterizing flavor in Lorillard's menthol cigarettes is over 3 times this detection level

Menthol Levels

- Menthol at very low levels is sometimes used in nonmenthol brands, along with very low levels of other flavors, as a component of proprietary “top flavors” to slightly augment the key signature of Lorillard products – tobacco taste
 - These levels were established decades ago and have been consistently maintained
 - This use is analogous to the flavor practices employed in other consumer products
- Lorillard reports the use and amount of all of its flavoring ingredients to the FDA

Newport Menthol Levels (2000-2007)

- In 2008, Kreslake *et al.* concluded that Lorillard “decreased menthol concentration by 16%” in Newport between 2000 and 2007 to target “younger smokers”

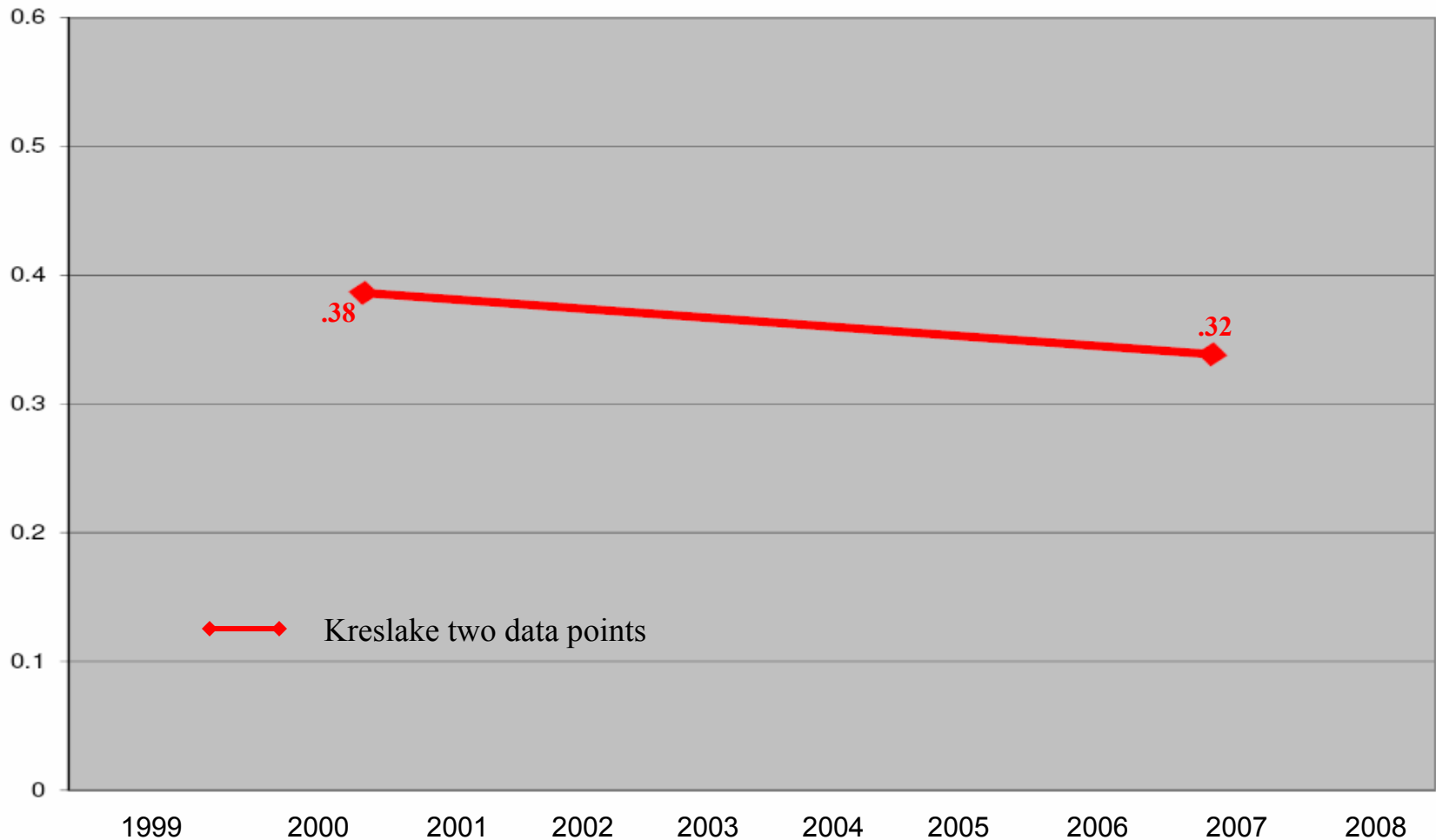
TABLE 1—Menthol Content and Target Groups of Selected Cigarette Brands

Brand	Menthol Content in 2007, ^a %	Changes in Menthol Concentration Since 2000 ^b	Target Groups
Newport ^c	0.32	Decreased menthol concentration by 16% (from 0.38)	Younger smokers ^{19,45-48}

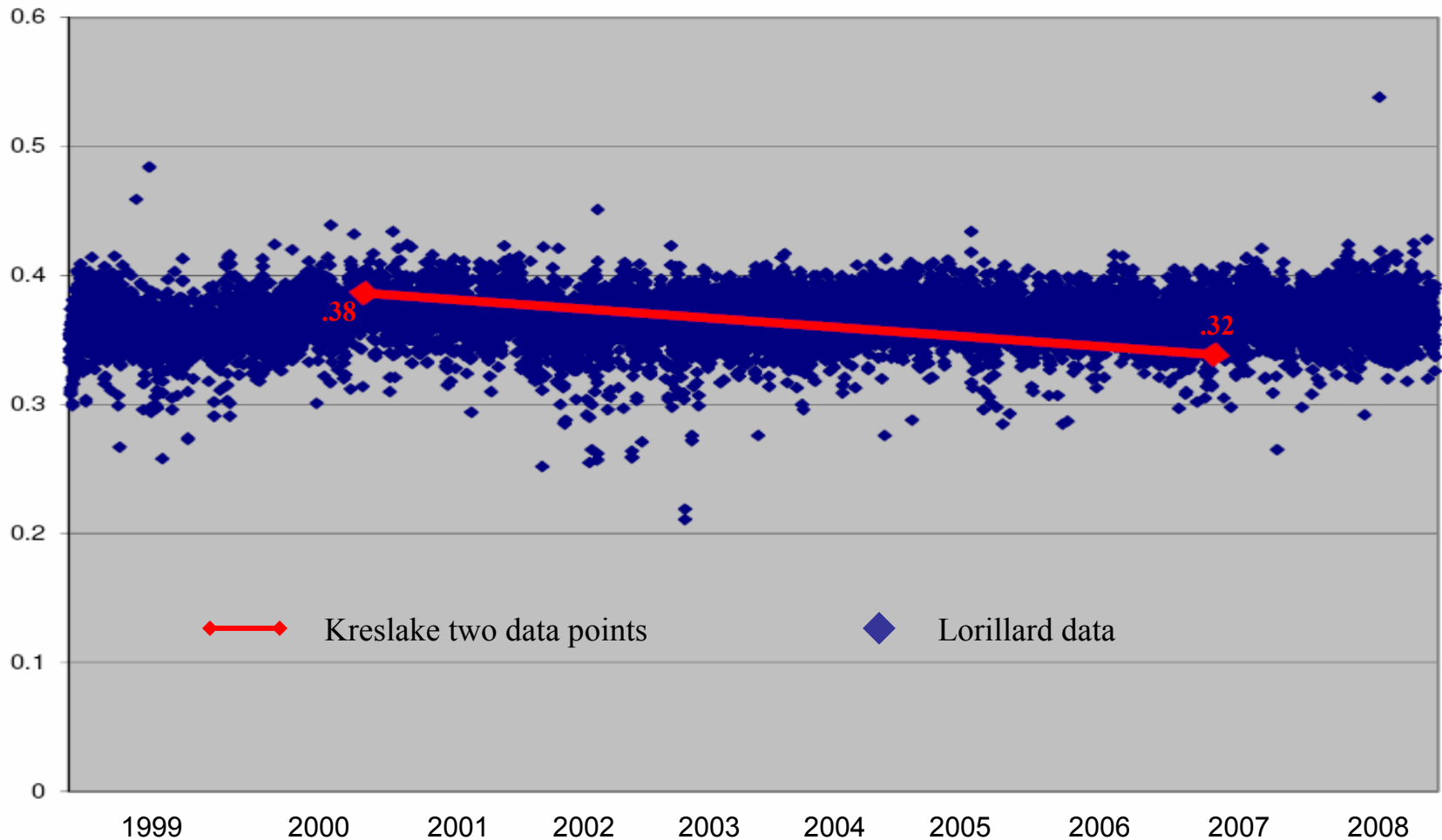
Newport Menthol Levels (2000-2007)

- The study's conclusion regarding Newport is based on a single 2007 analysis compared to a single "baseline" value from a 2000 Lorillard internal document
- Two data points are never sufficient to analyze a trend
- Therefore, the two analytical data points are entirely inadequate to support the conclusion with respect to Newport
- In fact, the actual trend line for menthol in Newport between 2000 and 2007 can only be described as unequivocally flat

Newport Menthol Levels (2000-2007)



Newport Menthol Levels (2000-2007)



Newport Menthol Levels (2000-2007)

- The two Newport menthol values used in the publication represent analyses that
 - Were conducted by different laboratories
 - Used different methods
 - Were presented with no statistical analysis
 - Are within routine production/analytical method variation
- The study design and conclusions also failed to consider the characteristics of cigarette manufacturing, statistical process control, and analytical method variability

Valid Scientific Trend Analysis

- Sound scientific methodology for determining trends in menthol levels requires
 - Documentation of sample identity, age and handling
 - Menthol is volatile and can be impacted by shelf life and conditions
 - Use of standardized, validated methods of analysis
 - Existing menthol analysis methods can produce widely variable results
 - Even the best menthol analytical methods show inherent variability
 - Without a standard, validated method, data generated by different laboratories should not be compared
 - Multiple replicates
 - Analysis of a single sample cannot support any valid conclusion
 - Valid statistical analysis of numerous data points
 - Statistical confidence increases with increasing data points

Characterization of Menthol – Summary

- Despite the inaccurate conclusion and deficient scientific methodology, Kreslake *et al.* continues to be cited as evidence that Lorillard strategically lowered the menthol levels in Newport
- Tens of thousands of data points over a ten year period demonstrate that the levels of menthol in Newport remained consistent
- The perpetuation of scientifically invalid studies to draw conclusions does an injustice to the scientific process

Characterization of Menthol – Summary

- Decisions regarding menthol must be
 - data-driven
 - founded on a rigorous review of all available data
 - based on sound scientific methodology



RESEARCH & DEVELOPMENT

Biomarkers

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Lorillard Research: Clinical Study

- Parallel-arm study comparing menthol and nonmenthol smokers (Heck, 2009)
- 112 subjects, African-American and White, male and female
- Cigarettes matched in tar, nicotine, CO and NNK yields
- Only published study to date that measured actual cigarette yields
- Blood COHb, urinary nicotine + 5 metabolites, urinary NNAL and NNAL-glucuronide
- Menthol and nonmenthol smokers had essentially identical levels of biomarkers of exposure

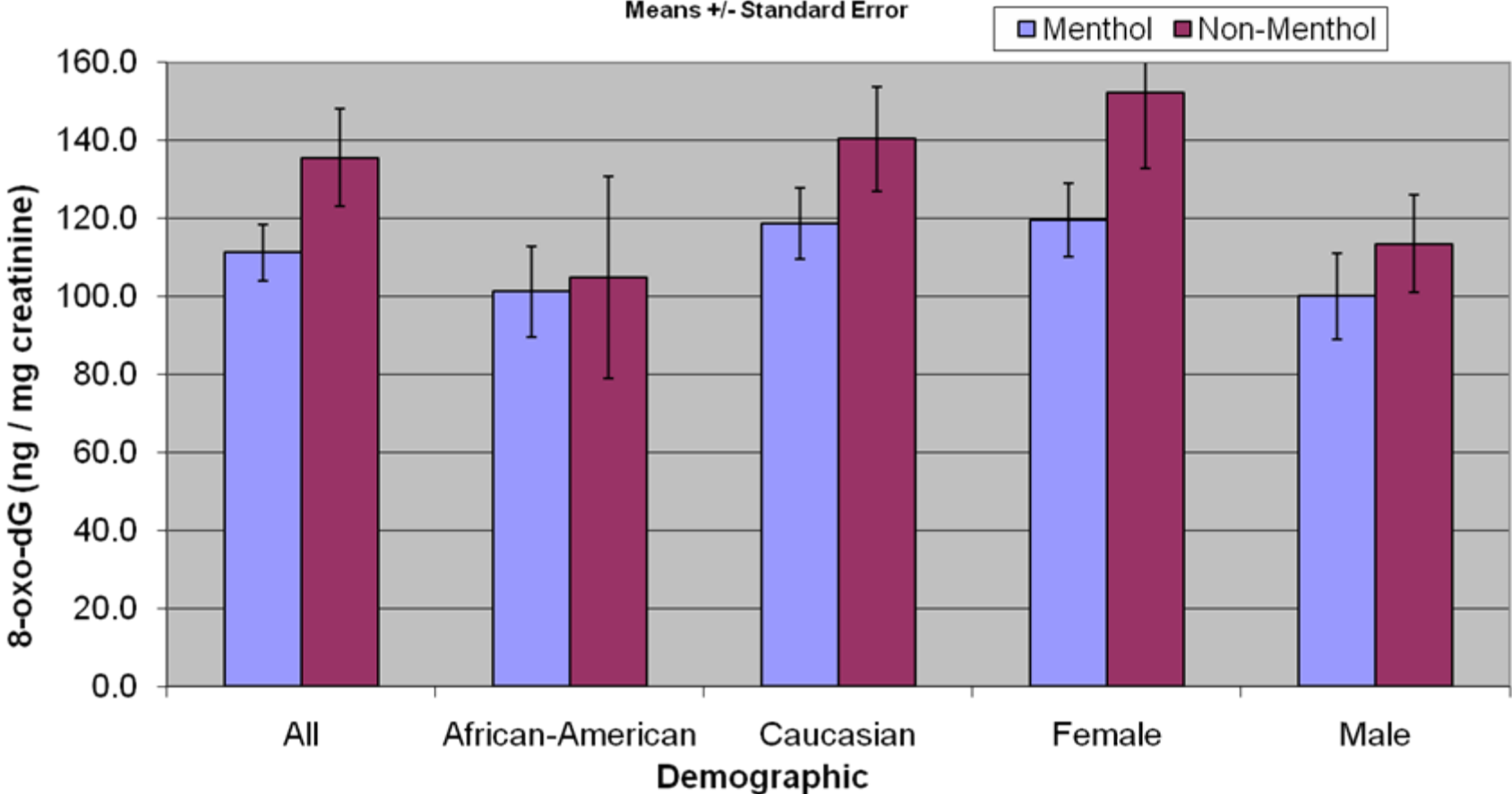
Lorillard Research: Oxidative Stress

- Further analysis of collected urine from Lorillard clinical study (manuscript in preparation)
- 8-oxo-2'-deoxyguanosine (8-oxo-dG) generated by oxidative stress
- **Matched CPD, matched cigarette constituent yields**
- No statistical differences in 8-oxo-dG levels were observed.
 - African-American menthol v. nonmenthol, $p = 0.65$
 - Caucasian menthol v. nonmenthol, $p = 0.30$
 - Male menthol v. nonmenthol, $p = 0.56$
 - Female menthol v. nonmenthol, $p = 0.20$
- Menthol smokers had between 4% to 21% lower level of 8-oxo-dG excreted than nonmenthol smokers (not statistically significant)

Lorillard Research: Oxidative Stress

Menthol and Non-Menthol 8-oxo-dG Comparison

Means +/- Standard Error



Menthol Biomarkers Conclusions

- Biomarkers are highly quantitative and direct measurable outcomes of smoking
- Biomarker studies integrate and reflect the impact of all the diverse elements of complex human smoking behaviors
 - cigarettes smoked per day
 - puffing intensity (puff number, volume, interval and duration),
 - percent of cigarette smoked
 - filter ventilation hole blocking, if any
- Biomarker studies conducted by Lorillard, PM USA and RJRT show no differences in selected biomarkers of exposure between menthol and nonmenthol smokers

Menthol Biomarkers Conclusions

- Based on the largest study of actual smokers (PM TES; ~3,600 total smokers) under normal smoking conditions, menthol does not inhibit the metabolism of nicotine or NNK
- Internal studies do not indicate that menthol cigarettes are smoked any differently or more intensely than are nonmenthol cigarettes
- These studies reinforce the overwhelming weight of epidemiology literature which indicates that menthol and nonmenthol cigarettes convey similar risks of chronic diseases

Population Effects

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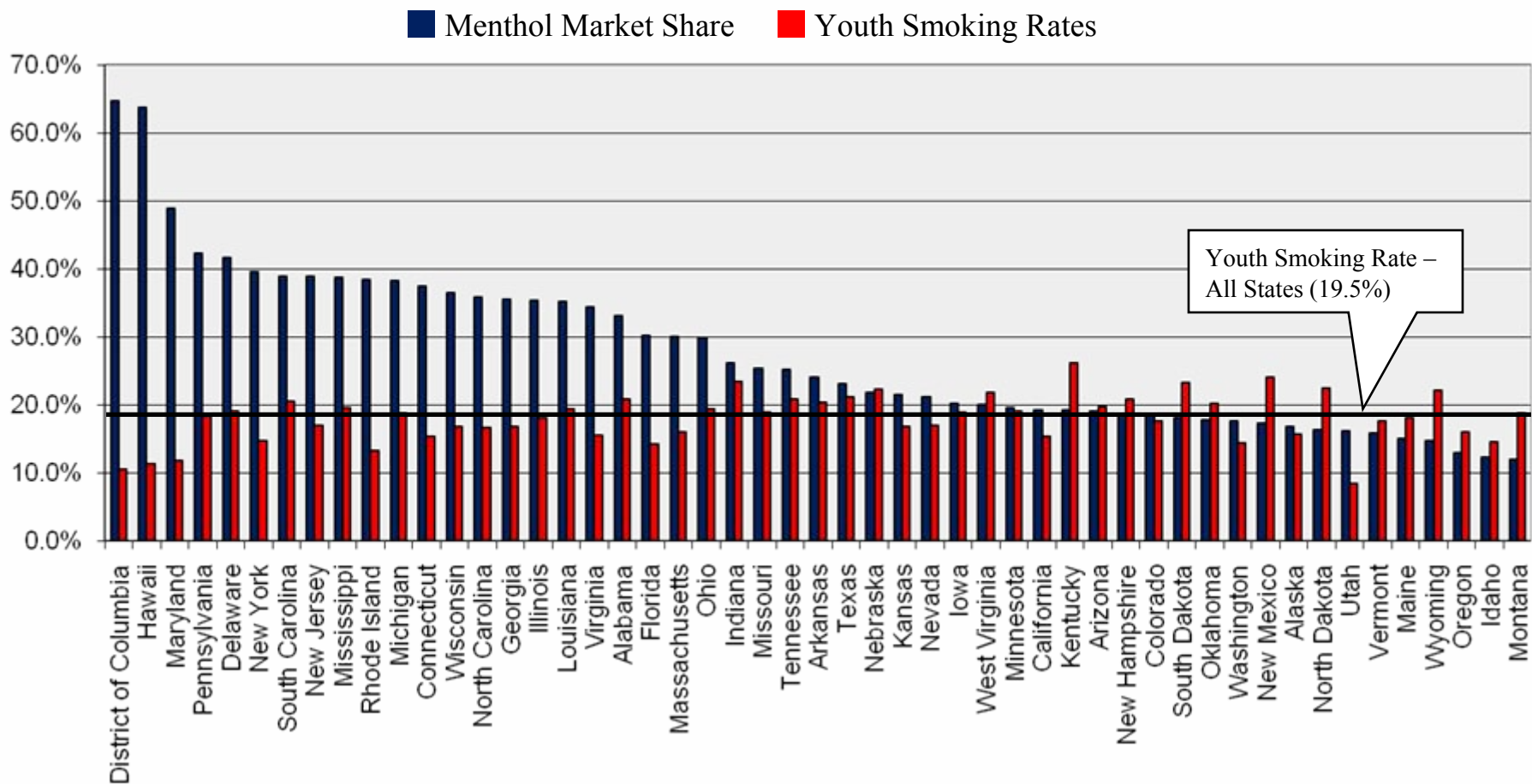
Youth Smoking Surveys

- We have just heard some of the limitations of survey data to address whether menthol in cigarettes affects youth smoking
- For example, in the survey most often cited as support for the theory that menthol contributes to youth smoking (NSDUH (2009)), the ambiguity of the question about menthol smoking fails to account for mixed menthol and nonmenthol smoking

Menthol Share of Market/ Youth Smoking Rates

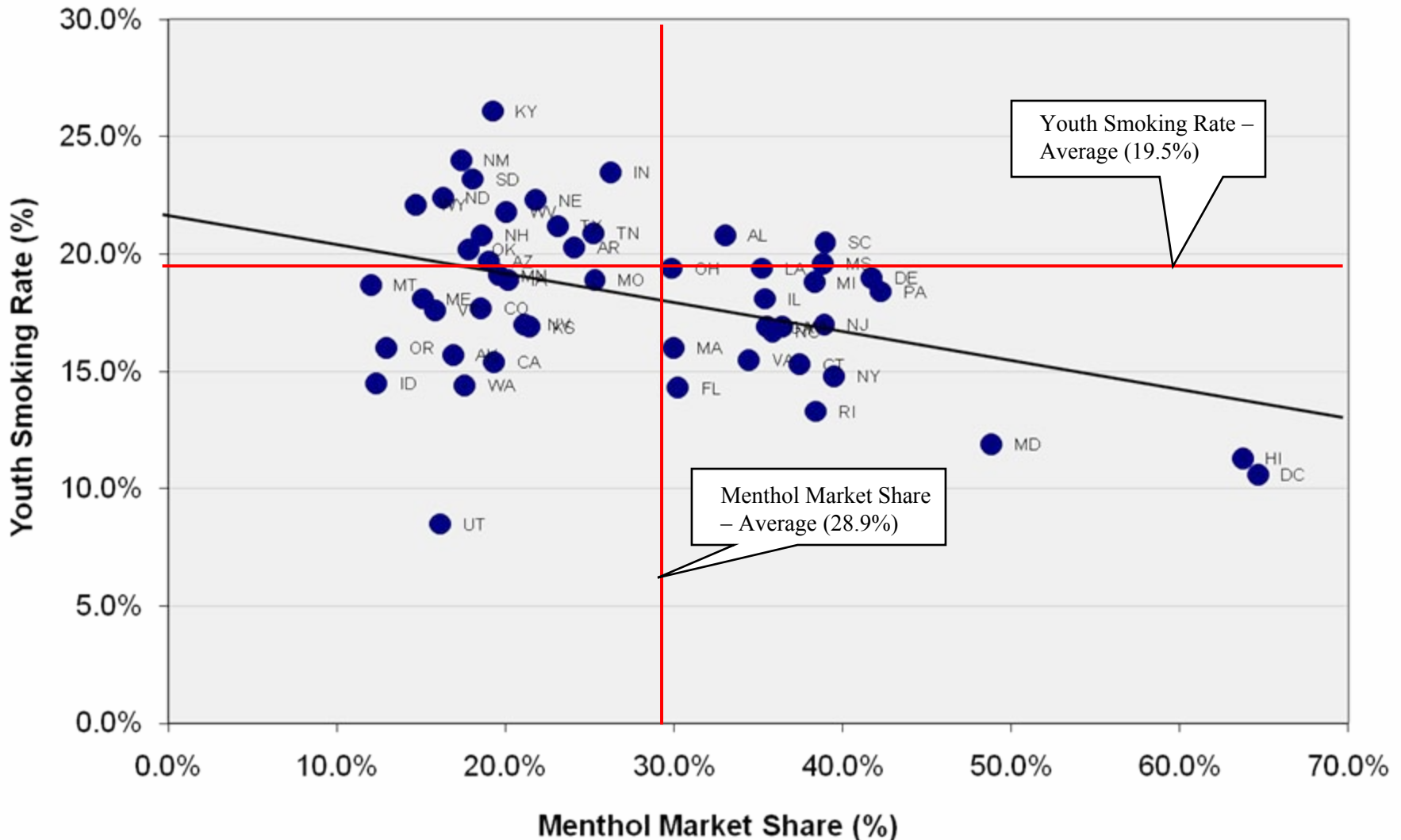
- To determine whether a correlation exists between youth smoking rates and menthol market share, we compared youth smoking rates to menthol smoking rates by state
- Youth smoking rates are generally lower in states with higher menthol market share
- Youth smoking appears to be inversely related to menthol market share

Menthol Market Share Compared To Youth Smoking Rates by State (2009)



Youth Smoking Rates Data Source: Campaign for Tobacco-Free Kids, "Key State-Specific Tobacco-Related Data & Rankings" (updated 6/8/10 using 2009 statistics)

Menthol Market Share Compared To Youth Smoking Rates by State (2009)



Menthol and Lung Cancer: new Lorillard-sponsored meta-analysis

- Peter N. Lee, eminent smoking and health statistician
- Draft manuscript (July 7, 2010) intended for future submission
- The study is a meta-analysis which combines and analyzes the data from the epidemiology studies on the risks of lung cancer between smokers of menthol and nonmenthol cigarettes
 - Eight lung cancer epidemiology studies

Draft Findings: Lee meta-analysis

- Menthol cigarettes RR = 0.93 (0.84-1.02), n=8
 - Males RR = 1.01 (0.84-1.22), n=5
 - Females RR = 0.80 (0.67-0.95), n=5
 - White RR = 0.87 (0.75-1.03), n=4
 - African-Americans RR = 0.96 (0.80-1.15), n=4
 - Current menthol smoking RR = 0.91 (0.81-1.03), n=5
 - Ever menthol smoking RR = 0.91 (0.78-1.07), n=4
 - Long-term menthol smoking RR = 0.92 (0.79-1.08), n=4
-
- According to Lee's calculations, for mentholation to explain the increased lung cancer risk of African-Americans men would require a RR of 1.7-1.8. Their increased lung cancer risk "cannot possibly be explained by the much greater preference of Blacks for mentholated cigarettes"

“Follow the Science”

**“Follow the science wherever it leads and
the rest will fall into place.”**

FDA Commissioner Margaret Hamburg