



# MICHIGAN BRFSS SURVEILLANCE BRIEF

A NEWSLETTER FROM THE CHRONIC DISEASE EPIDEMIOLOGY UNIT, MDCH

## Secondhand Smoke Exposure among Michigan Adults

Secondhand smoke (SHS) is classified as a known human cancer-causing agent by the U.S. Environmental Protection Agency, the U.S. National Toxicology Program, and the International Agency for Research on Cancer.<sup>1</sup> The 2006 U.S. Surgeon General's report concluded that SHS causes premature death and disease in both children and adults.<sup>2</sup> In the United States, exposure to SHS is known to cause an estimated 46,000 deaths from heart disease and another 3,400 deaths due to lung cancer each year.<sup>3</sup> SHS exposure within the home and in the car are known to be significant sources of SHS.

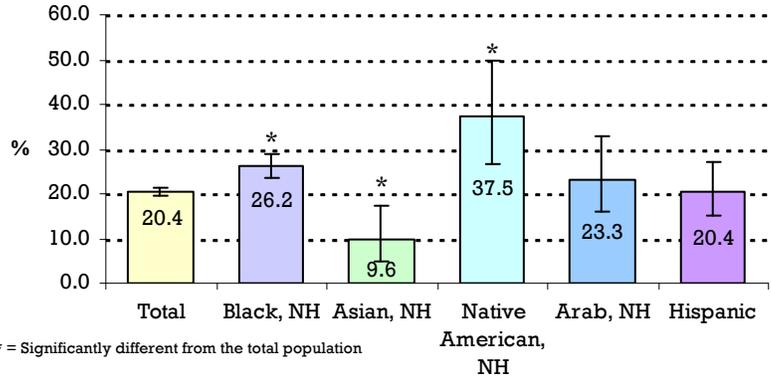
In 2007-2009, questions that focused on SHS exposure within the home and car over the past 7 days were added to the Michigan Behavioral Risk Factor Survey (MiBRFS). These data on Michigan adults were analyzed in order to determine if racial disparities exist within SHS exposure.

Figure 1 shows the prevalence of SHS exposure in the home by race/ethnicity. Both Black, non-Hispanics (26.2%) and Native American, non-Hispanics (37.5%) have significantly greater SHS home exposure compared to the general population (20.4%). On the other hand, Asian, non-Hispanics (9.6%) have a significantly lower SHS home exposure compared to the general population. Furthermore, both Arab, non-Hispanics and Hispanics had SHS home exposure rates comparable to the general population. SHS car exposure rates were comparable to SHS home exposure rates (Figure 2).

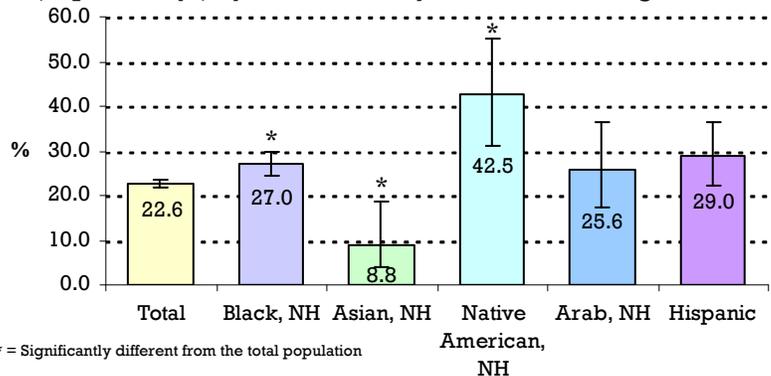
Figure 3 shows the combined SHS exposure for the home and in the car. These data show that 30.9% of the general population were exposed to SHS in the home or car. Native American, non-Hispanics had the highest SHS combined exposure (53.7%) while Asian, non-Hispanics had the lowest (16.2%).

Through the passage of the Michigan Smoke Free Air Law, the State of Michigan has made great strides toward decreasing SHS within the workplace and other public places, but these results clearly show that SHS exposure within the home and car continues to be a problem. Policies to limit SHS exposure in the home and car are needed.

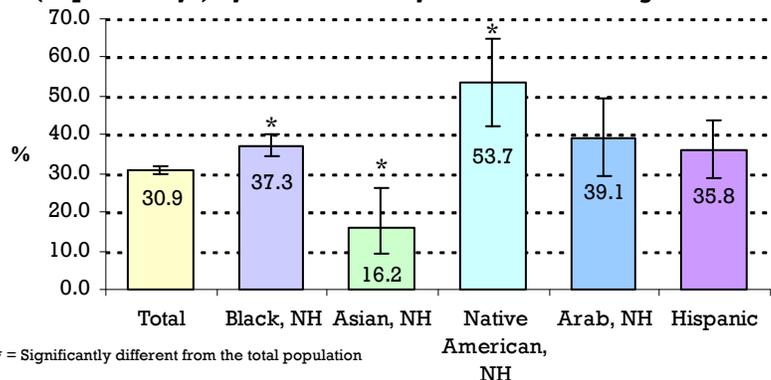
**Figure 1. Secondhand Smoke Exposure Within the Home (in past 7 days) by Race/Ethnicity - 2007-2009 Michigan BRFS**



**Figure 2. Secondhand Smoke Exposure Within the Car (in past 7 days) by Race/Ethnicity - 2007-2009 Michigan BRFS**



**Figure 3. Secondhand Smoke Exposure Within the Home or Car (in past 7 days) by Race/Ethnicity - 2007-2009 Michigan BRFS**



### MiBRFSS News

- The 2009 Michigan BRFS Annual Report has been completed and is currently available on our website ([www.michigan.gov/brfs](http://www.michigan.gov/brfs))
- National-level BRFS information can be found on the CDC BRFS website ([www.cdc.gov/brfs](http://www.cdc.gov/brfs))
- The 28th Annual BRFS Conference will be held in Atlanta, GA on March 19-23rd. ([www.brfs2011conference.com](http://www.brfs2011conference.com))
- Did you miss an issue of *Michigan BRFS Surveillance Brief*? Back issues are also available on our website.

## Health Problems by Secondhand Smoke Exposure Status

**Table 1. Age-adjusted Prevalence of Health Behaviors/Conditions by Secondhand Smoke Exposure Status, 2007-2009 MiBRFS**

Secondhand Smoke Exposure Status	No Health Care Coverage		No Personal Health Care Provider		No Routine Checkup in Past Year	
	%	95% CI	%	95% CI	%	95% CI
Secondhand Smoke Exposure <sup>a</sup>	18.9	(17.5-20.5)	17.3	(15.9-18.9)	35.9	(34.1-37.6)
No Secondhand Smoke Exposure	8.7	(7.9-9.5)	11.0	(10.0-12.1)	31.0	(29.7-32.3)
	Ever Told Diabetes <sup>b</sup>		Ever Told Heart Attack <sup>c</sup>		Ever Told Angina or Coronary Heart Disease <sup>d</sup>	
	%	95% CI	%	95% CI	%	95% CI
Secondhand Smoke Exposure <sup>a</sup>	10.5	(9.6-11.5)	6.3	(5.6-7.1)	5.6	(5.0-6.3)
No Secondhand Smoke Exposure	8.0	(7.5-8.5)	3.7	(3.4-4.0)	4.1	(3.8-4.4)
	Has a Disability <sup>e</sup>		Ever Told High Blood Pressure <sup>f</sup>		Ever Told High Cholesterol <sup>g</sup>	
	%	95% CI	%	95% CI	%	95% CI
Secondhand Smoke Exposure <sup>a</sup>	29.4	(27.8-31.0)	31.5	(29.5-33.6)	37.3	(34.8-39.9)
No Secondhand Smoke Exposure	19.6	(18.7-20.5)	26.4	(25.1-27.7)	32.7	(30.8-34.7)

<sup>a</sup> Individuals who reported being exposed to smoke from cigarettes, cigars, or pipes inside their home or car within the past seven days.  
<sup>b</sup> The proportion who reported that they were ever told by a doctor that they have diabetes. Adults who have been told they have prediabetes and women who had diabetes only during pregnancy were classified as not having been diagnosed.  
<sup>c</sup> The proportion who reported ever being told by a doctor that they had a heart attack or myocardial infarction.  
<sup>d</sup> The proportion who reported ever being told by a doctor that they had angina or coronary heart disease.  
<sup>e</sup> The proportion who reported being limited in any activities because of physical, mental, or emotional problems, or reported that they required the use of special equipment (such as a cane, a wheelchair, a special bed, or a special telephone).  
<sup>f</sup> The proportion who reported that they were ever told by a doctor that they have high blood pressure (HBP). Women who had HBP only during pregnancy and adults who were borderline hypertensive were considered to not have been diagnosed.  
<sup>g</sup> Among adults who had their cholesterol checked, the proportion who reported that a doctor, nurse, or other health professional had told them that their cholesterol was high.

Since the 2006 U.S. Surgeon General's report concluded that SHS causes premature death and disease in both children and adults<sup>2</sup> we used 2007-2009 MiBRFS data to investigate the age-adjusted relationships between specified health behaviors/conditions and SHS exposure status among Michigan adults. The results of this analysis are presented in Table 1.

Table 1 shows that Michigan adults who were exposed to SHS in their homes or cars within the past seven days had higher prevalence rates of all of the health behaviors/conditions analyzed. For example, Michigan adults with SHS exposure were over twice as likely to have no health care coverage when compared to those without SHS exposure. In addition, prevalence rates of having no personal health care provider, ever being told they had a heart attack, and having a disability were 50-70% higher among SHS exposed adults when compared to unexposed adults. Furthermore, prevalence rates of ever being told they had diabetes, coronary heart disease, high blood pressure, high cholesterol, and not having a routine checkup within the past year were 10-30% higher among adults with SHS exposure.

It is obvious from the above results that secondhand smoke exposure can have a devastating impact on the overall health of Michigan residents. Programs and policies that focus on limiting SHS exposure within the home and car are needed within Michigan in order to decrease the harmful effects of secondhand smoke and improve the overall health of Michigan residents.

### References

- <sup>1</sup> American Cancer Society. Secondhand Smoke. November 2010. Accessed at <http://www.cancer.org/cancer/cancercauses/tobaccocancer/secondhand-smoke> on January 27, 2011.
- <sup>2</sup> Centers for Disease Control and Prevention. Department of Health and Human Services. The Health Consequences of Involuntary Exposure to Tobacco Smoke: A Report of the Surgeon General, 2006.
- <sup>3</sup> California Environment Protection Agency. Health Effects of Exposure to Environmental Tobacco Smoke. June 2005. Accessed at [http://www.oehha.ca.gov/air/environmental\\_tobacco/pdf/app3partb2005.pdf](http://www.oehha.ca.gov/air/environmental_tobacco/pdf/app3partb2005.pdf) on January 27, 2011.

## The Michigan Behavioral Risk Factor Surveillance System (MiBRFSS)

The MiBRFSS comprises annual, statewide telephone surveys of Michigan adults aged 18 years and older and is part of the national BRFSS coordinated by the CDC. The annual Michigan Behavioral Risk Factor Surveys (MiBRFS) follow the CDC BRFSS protocol and use the standardized English core questionnaire that focuses on various behaviors, medical conditions, and preventive health care practices related to the leading causes of mortality, morbidity, and disability. Interviews are conducted across each calendar year. Data are weighted to adjust for the probabilities of selection and a poststratification weighting factor that adjusts for the sex, age, and race distribution of the adult Michigan population. All analyses are performed using SAS-callable SUDAAN<sup>®</sup> to account for the complex sampling design.

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