

Heart Attack Admissions in Rural Mississippi Counties Following Smoke-Free Ordinances

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- Secondhand smoke (SHS) exposure is a significant source of morbidity
 - Increased risk and severity of RSV bronchiolitis
 - 1.3 greater odds of hospitalization
 - 1.6 times greater risk of otitis media
 - 1.8 times greater risk of asthma
 - Twice the risk of developing inflammatory bowel disease
 - 4.7 times the risk of developing metabolic syndrome
- Even very low levels of exposure have been associated with harmful effects in children:
 - Decreased serum antioxidant levels
 - Decreased cognitive abilities

Tobacco Smoke Health Effects in Adults

- Cancers
- Respiratory Problems
- Heart Disease
- 30,000 to 60,000 cardiovascular disease related deaths/year among nonsmokers
- 2006 Surgeon General Report

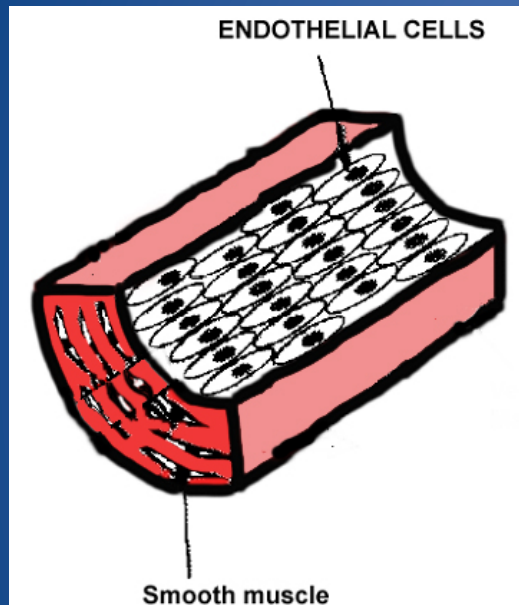
What Accounts for These Harms?

Not nicotine mediated

- SHS exposure – less than 1% of nicotine of active smoker to 20 cigs/day
- Yet – 1.25 risk of CVD
- Blood levels of nicotine & CO are low in SHS exposed non smokers

Most likely cause- oxidant gas exposure

The Endothelium and Endothelial Cells



Provide non-adherent, non-thrombotic surface for blood flow

Endothelial cells maintain vascular tone & hemostasis

Vasodilation & constriction modulated by small molecules (nitric oxide, prostacyclin and endothelin)

Endothelial dysfunction implicated in adult conditions ---hypertension, obesity, inflammation, diabetes, active & passive smoking ----leading to atherosclerosis

Evidence that SHS exposure is related to endothelial dysfunction

- Healthy SHS exposed non-smokers ages 18-35
 - Impaired endothelial function measured by brachial artery dilation in response to occlusion
 - nitric oxide (NO) mediated
 - Impairment similar to that seen among smokers

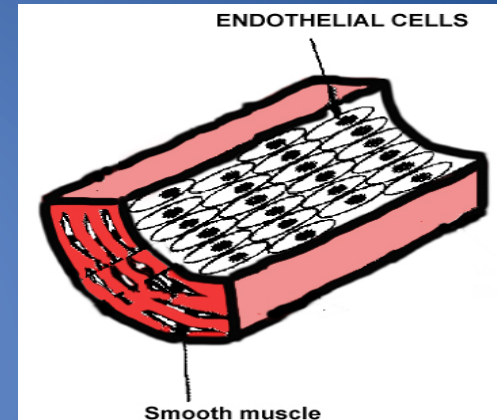
How does this happen with SHS exposure?



Combustion products –
Oxidizing gas



Oxidant pathways
Direct toxicity



Cell damage/stress
Inflammation
Endothelial dysfunction

In summary,

- Effect of SHS exposure on CV system is not nicotine-mediated
- Believed to be due to oxidative stress leading to inflammation with subsequent CVD

IOM Report: Pathophysiology of Tobacco Smoke

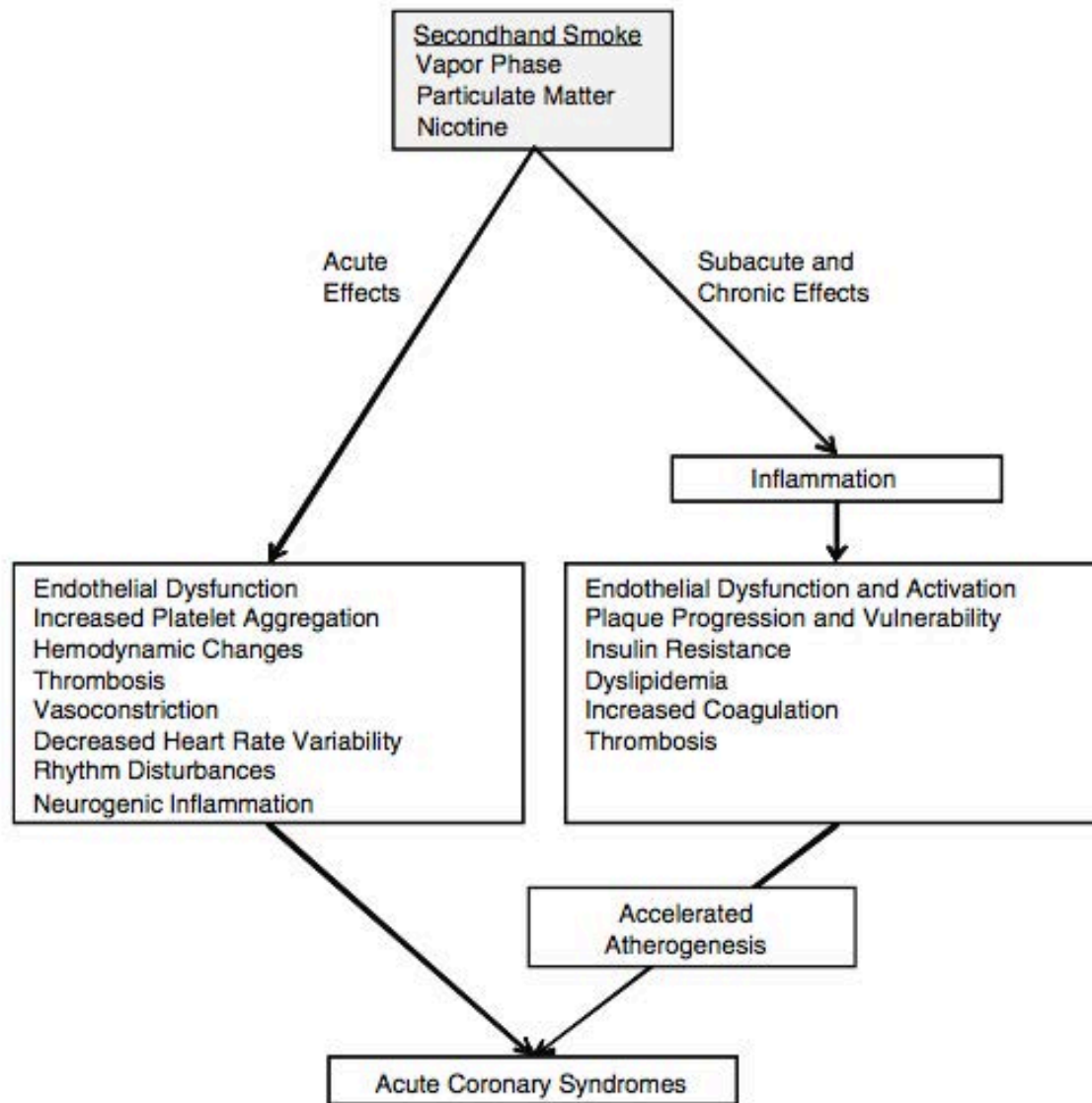


FIGURE 3-1 Potential mode of action of secondhand smoke.

NOTE: Schematic showing cardiovascular effects of secondhand smoke and how they might lead to acute myocardial infarction.

Bans on smoking in restaurants, bars and other indoor public places reduce the risk of heart attacks

Examples from the Scientific Literature:

- Helena, MT
- Pueblo, CO (2 studies)
- Italy (3 studies)
- Bowling Green, OH
- New York State
- Scotland
- Saskatoon, Saskatchewan
- England
- Massachusetts

Institute of Medicine Report:

Bans on smoking in restaurants, bars and other indoor public places reduce the risk of heart attacks

Study results consistently indicate that exposure to secondhand smoke increases the risk of coronary heart disease by 25 to 30 percent.

Remarkably, all of the publications show a decrease in the rate of heart attacks after a smoking ban was implemented. Those decreases ranged from six percent to 47 percent, depending on the study and form of analysis.

Data consistently demonstrates that secondhand- smoke exposure increases the risk of coronary heart disease and heart attacks and that smoking bans reduce heart attacks.

100% Smoke-free
COMMUNITIES
in Mississippi
 UPDATED | APRIL 2012

There are **53**
smoke-free
COMMUNITIES
in Mississippi

Partial Smoke-free
COMMUNITIES
in Mississippi

- December 6, 1996 | West
- October 2007 | Greenville
- November 15, 2007 | McComb
- May 1, 2008 | Gulfport
- August 1, 2008 | Walls
- June 26, 2009 | Picayune
- January 6, 2010 | Columbus
- May 4, 2010 | Brandon
- Goodman
- Summit
- April 12, 2011 | Senatobia
- June 2011 | Olive Branch



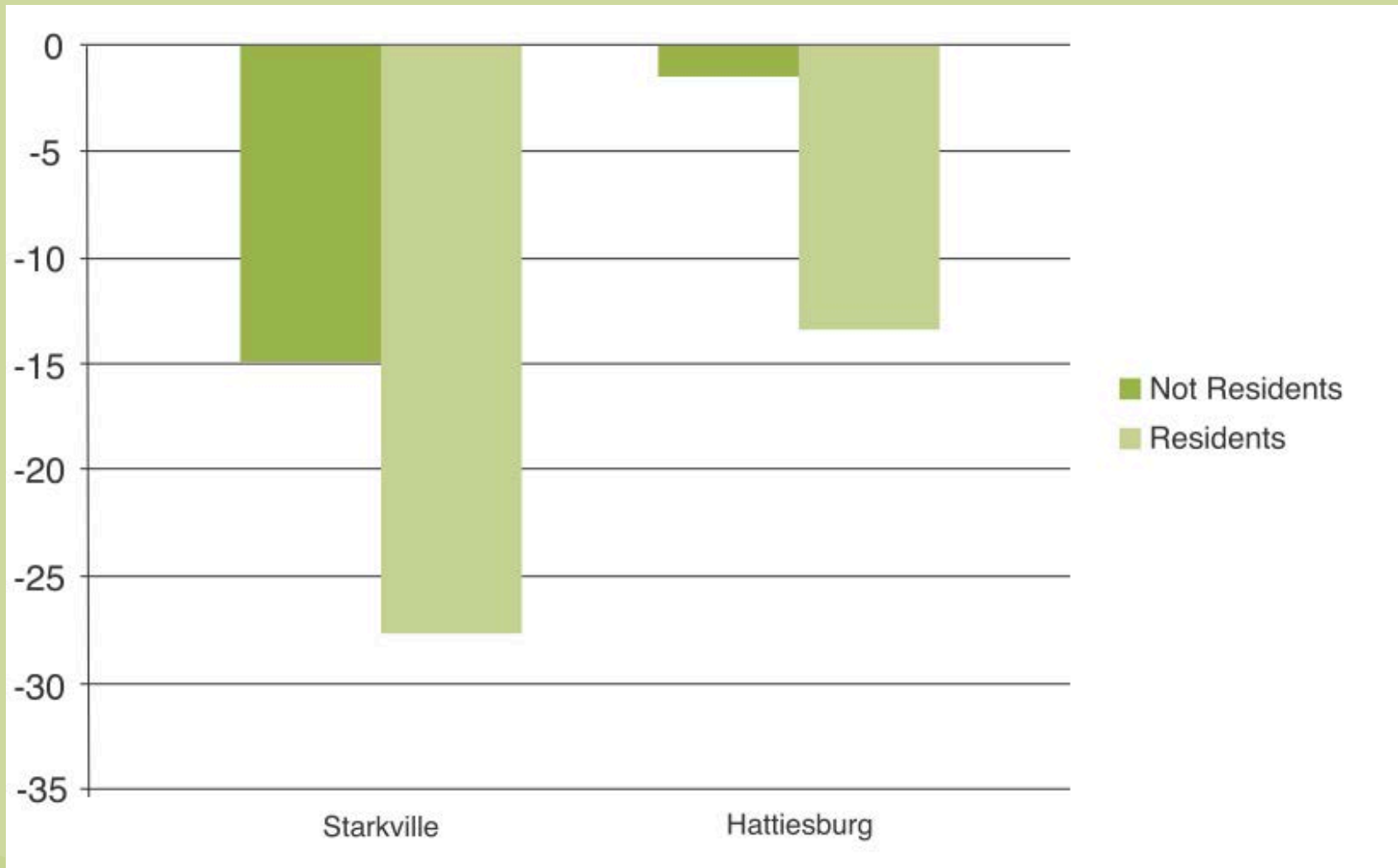
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MISSISSIPPI
Tobacco Data

Methods

- Two applied a controlled observational studies
- Examined hospital admissions for heart attacks
 - Starkville
 - Oktibbeha County Hospital
 - Hattiesburg
 - Forrest General Hospital
 - Wesley Medical Center

Heart Attack Admissions



Summary

- Starkville residents experienced a 27.7% reduction in heart attack admissions compared to the 14.8% reduction observed among those who did not live in Starkville
 - Cost savings of \$215,233
- Hattiesburg residents experienced a 13.4% reduction in heart attack admissions compared to the 3.8% reduction observed among those who did not live in Hattiesburg
 - Costs saving of \$2,367,909

For More Information

- Visit mstobacodata.org