

# 2011 ATCEM Burn Session: The Effects of Burning on IAQ and Your Health

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# Bottom Line, Up Front

- Alaska Natives carry a high burden of respiratory disease.
- Poor indoor air quality can contribute to respiratory disease.
- Improving indoor air quality can have positive impacts on respiratory health.

# Overview

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- **Sources of Indoor Air Pollution from Burning**
- **Indoor Air Pollution Health Effects**
- **Methods to Improve Indoor Air Quality**

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- **Sources of Indoor Air Pollution from Burning**
- Health Effects of Indoor Air Pollution
- Methods to Improve Indoor Air Quality

# Candles & Fragrances



[www.orthodoxcandles.com](http://www.orthodoxcandles.com)



[www.cpsc.gov/cpscpub/prerel/prhtml02/02144a.jpg](http://www.cpsc.gov/cpscpub/prerel/prhtml02/02144a.jpg)



<http://weloveincense.com/wp-content/uploads/2011/10/1913333.jpg>

# Wood Stoves???





# Wood Smoke

- Wood smoke can be a harmful indoor air pollutant.
- What you burn matters.



# Burning in a Wood Stove

## WHAT TO BURN

- Dry Wood
  - Wood split and dried for 6-12 months
- Kindling
  - Wood scraps and occasionally small bits of newspaper

## WHAT *NOT* TO BURN

- Wet Wood
- Garbage
- Treated Lumber
- Saltwater Driftwood
- Glossy Paper
- Cardboard or Paper Wastes w/ Adhesives



# Stove Condition Matters



- Older stoves may not burn efficiently.
- Leaky stoves can cause higher levels of indoor air pollution.

# Stack Condition Matters

- Creosote can build up in a stove pipe.
- Results in
  - Fire hazard
  - Shorter stove life
  - Inefficient burn



# What Causes Creosote Build Up?



- Restricted air supply
- Burning unseasoned wood
- Cooler chimney temperatures

# Tobacco Smoke

- One of the most common sources of indoor air pollution.
- One of the most deadly indoor air pollutants.



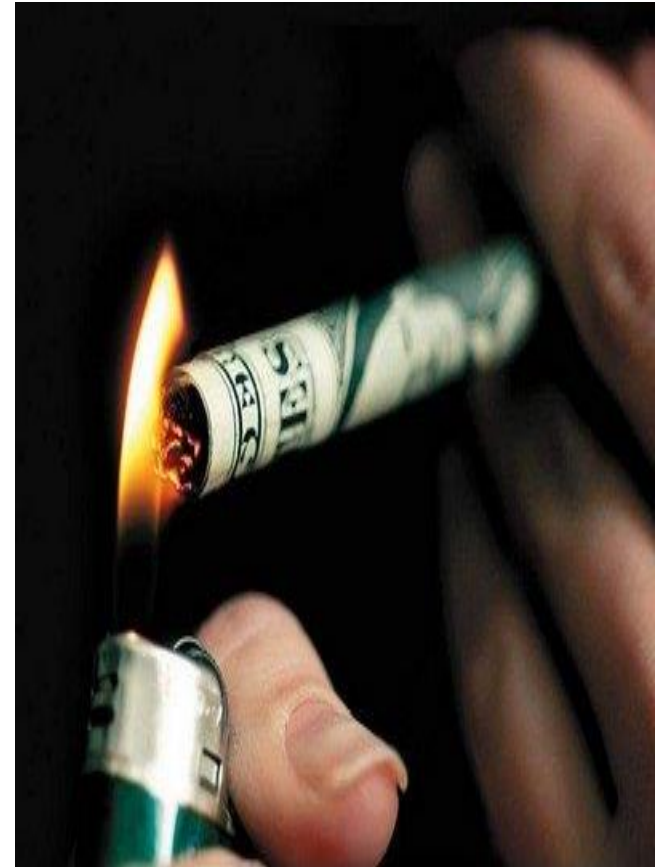
# Tobacco Smoke

- Single greatest avoidable cause of disease and death
- ~1 in 5 deaths is related to tobacco smoke
- > \$193 billion/yr (\$10 billion from SHS)
- U.S. consumers spent an estimated \$90 billion in 2006 on tobacco products

*Source: [http://www.cdc.gov/tobacco/data\\_statistics/fact\\_sheets](http://www.cdc.gov/tobacco/data_statistics/fact_sheets)*

# Money up in smoke...

- Savings based on one to two packs a day:
  - 1 Day: \$8 - \$16
  - 1 Week: \$56 - \$112
  - 1 Month: \$240 - \$480
  - 1 Year: \$2,920 - \$5,840





# Who smokes???

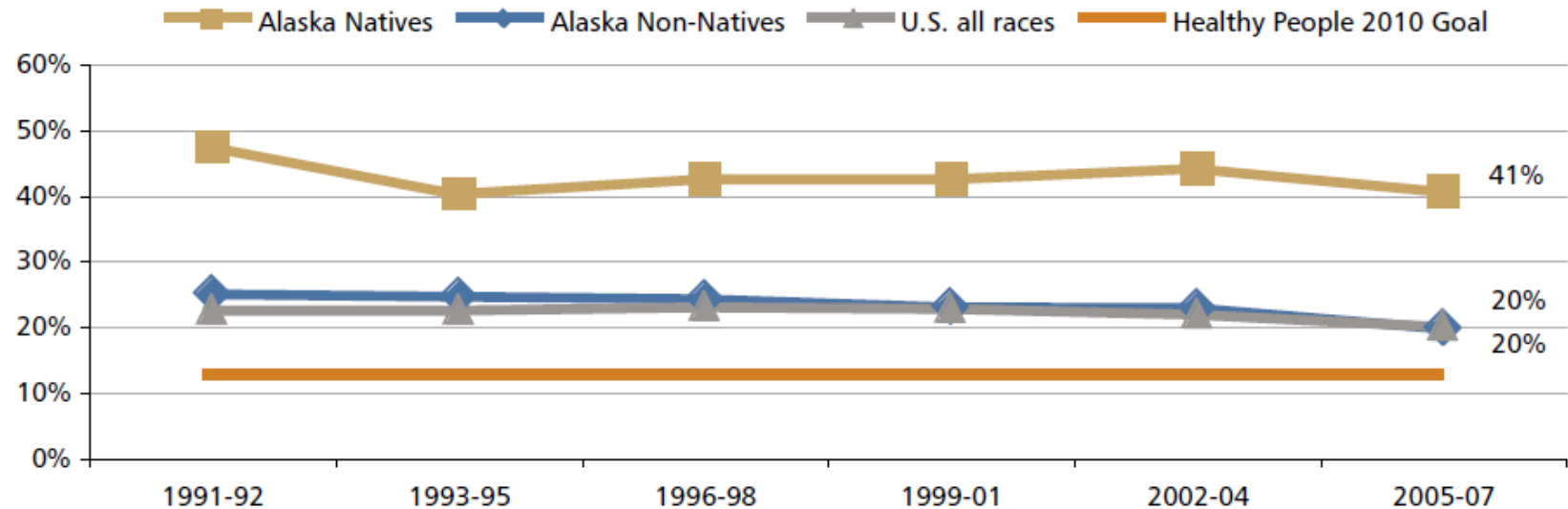


# Who smokes???

## Current Smokers, Alaska Natives, Alaska Non-Natives and U.S. all races, 1991-2007

Data Source: Alaska BRFSS

US Data Source: CDC BRFSS

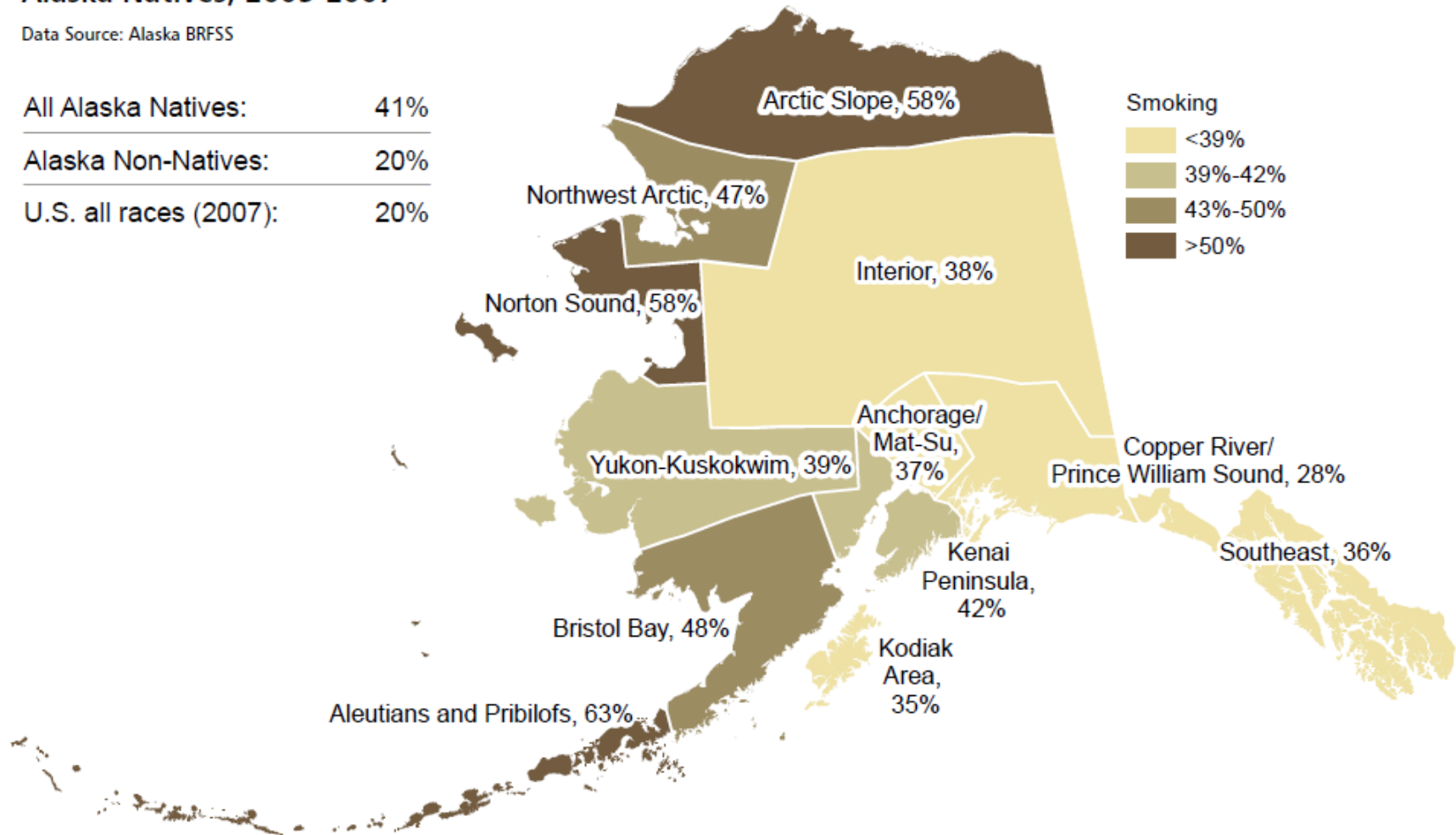


# Tobacco Use – Smoking

## Smoking Rates by Region, Alaska Natives, 2005-2007

Data Source: Alaska BRFSS

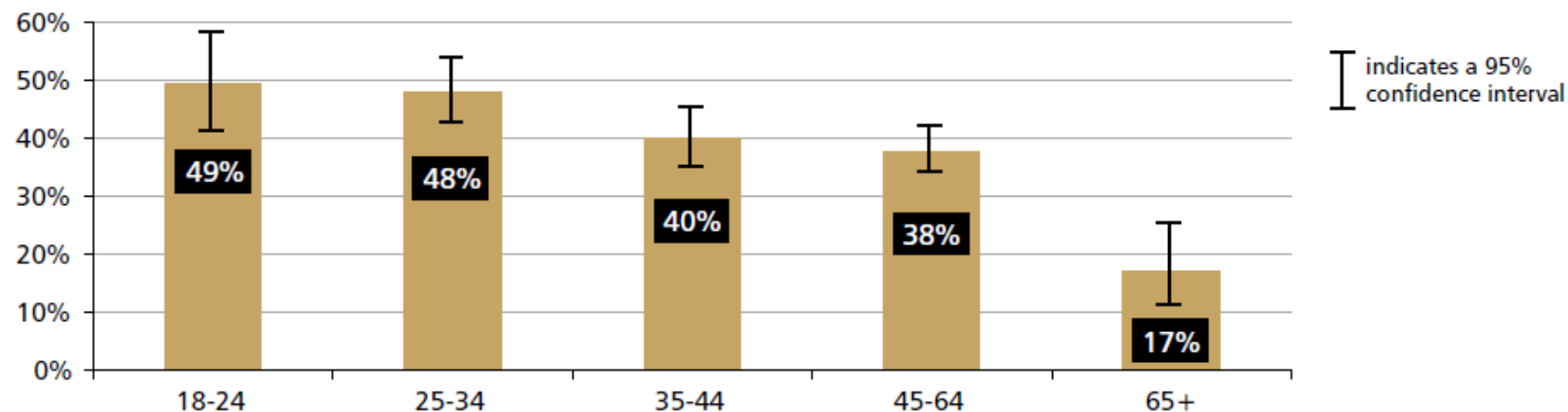
All Alaska Natives:	41%
Alaska Non-Natives:	20%
U.S. all races (2007):	20%



**Definition:** Current smokers are adults who have smoked at least 100 cigarettes in their lifetime and currently smoke every day or some days.

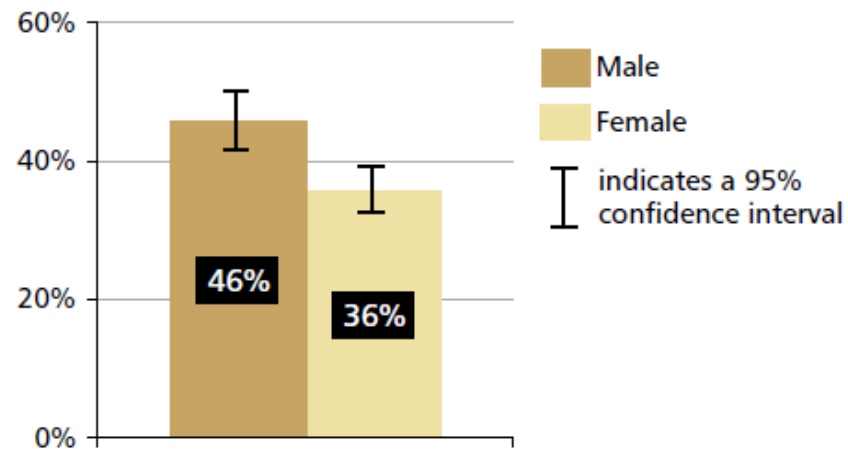
## Current Smokers by Age Group, Alaska Natives, 2005-2007

Data Source: Alaska BRFSS



## Current Smokers by Gender, Alaska Natives, 2005-2007

Data Source: Alaska BRFSS



# Tobacco Smoke



<http://snus-news.blogspot.com/2011/03/paper-danger-pregnant-women-exposed-to.html>

- Tobacco smoke is one of the most harmful indoor air pollutants.
- Exposure to tobacco smoke is preventable.

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# Who is affected?

- Everyone, but especially children and elders.



[anthctoday.org](http://anthctoday.org)



[alaskansquare.jpg](http://alaskansquare.jpg)

# Health Effects from IAP

- Indoor air pollution has been associated with...
  - Decreased lung function
  - Cardiovascular disease
  - Asthma
  - Cancer



# Health Effects from Tobacco

- **Secondhand smoke is known to cause...**
  - **Coronary heart disease**
  - **Increased risk of heart attack**
  - **Lung cancer**
  - **Increased risk of Sudden Infant Death Syndrome**
  - **Wheezing**
  - **Coughing**
  - **Pneumonia**
  - **Asthma**
  - **Bronchitis**
  - **Ear Infection**



# Why Is This Important???

- Cancer is the leading cause of death for Alaska Natives (1 out of every 5 deaths).
- Heart disease is the second leading cause of death for Alaska Native people.
- Limiting exposures to indoor air pollution can improve respiratory health for Alaska Natives.

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# Methods for Improvement...

- **Limit burning**
- **Candles & Fragrances:**
  - Limit use of candles and fragrances in the home
  - When using candles & fragrances increase home ventilation

# Wood Stoves

- Upgrade to an EPA certified wood stove
  - Burns more efficiently
  - Creates less smoke
  - Uses less wood
- If you can't, BurnWise...



# How to Burnwise...

## Season (dry) wood before Use...

1. Split – Split the wood down the middle
2. Stack – Keep the wood off the ground
3. Cover – Cover the wood from the elements
4. Store – Store the wood for at least 6 months



# Wood Stoves



<http://www.chimney-sweep-seattle.com/chimney-service.html>

- Properly maintain stoves.
- Clean chimney stack at least once each year to prevent creosote buildup.

# Tobacco Smoke

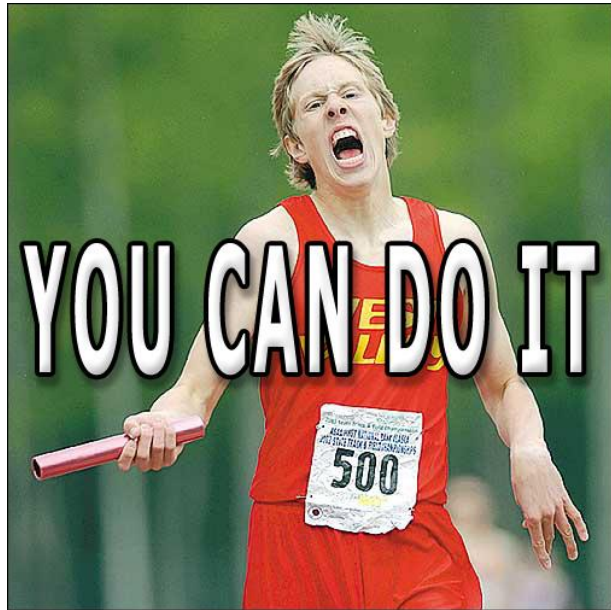
- **Promote quit programs and help people to quit smoking.**
- **Advocate for tobacco policies in your communities.**



[howtoquitsmokingprogram.com](http://howtoquitsmokingprogram.com)



# It Starts With You



<http://casmayaenterprise.wordpress.com/2011/01/>

- Advocate for the change you want to see in your communities.
- Use outreach, education and promotion techniques to encourage healthy behavior.
- Utilize resources (you are not alone!)

# Resources

- ANTHC mini-grants for air quality projects.
- USDA grants for wood stove change-outs.
- BurnWise educational and promotional outreach materials. ([www.epa.gov](http://www.epa.gov))
- Regional health organizations, clinics, schools, etc.

# In Conclusion...

- Alaska Natives carry a high burden of respiratory disease.
- Poor indoor air quality can contribute to respiratory disease.
- Improving indoor air quality can have positive impacts on respiratory health.

# Questions???

