




# Clean Burning Education

Reducing Wood Smoke to  
Improve Air Quality

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## What EPA Is Doing










- EPA headquarters
  - Developing BurnWise Education Campaign
- Main Messages:
  - Burn the right thing
  - Proper operation
  - Safety checkups each year
  - Save money
  - Less dust, smell, smoke, creosote
  - Smoke triggers heart/lung problems
- How to reach:
  - Radio, Print, Public events, Pamphlets, Web (dedicated site, Twitter, YouTube, Facebook), video, other?





# BURN CLEAN


HOT TIPS FOR A BETTER FIRE

**Did you know that by changing the way you burn wood in your wood stove, you can save money, reduce air pollution and protect your health? Here are a few simple tips to make your fire burn hotter, keep your wallet fatter and keep your local air cleaner and healthier.**

-  **Season all firewood.** All firewood should be split, securely covered or stored, and aged for at least six months. Seasoned wood burns hotter, cuts fuel consumption and reduces the amount of smoke your wood stove produces.
-  **Choose the right firewood.** Hardwoods are the best. Never burn trash or treated wood which can emit toxic air pollutants.
-  **Choose the right size stove.** A stove that is too large for a room will need to be dampened down so it doesn't overheat the stove. This can waste wood, which in turn wastes your money.
-  **Clean ashes from the stove.** Excess ashes can clog a stove's air intake vents, reducing its efficiency. Discard after they are completely extinguished. Do not leave the metal ash container near the house or near any flammable material. This could start a fire!
-  **Begin with a quick hot start.** Open the wood stove draft to maximum, and start the fire with a manufactured firestarter or crumpled paper and kindling. As the kindling burns, add small pieces of firewood followed by larger pieces until the fire is bright and hot.
-  **Always burn small hot fires.** These fires provide the maximum in heat, while cutting fuel consumption and reducing pollution.
-  **Don't let the fire smolder.** Many people think they should let a fire smolder overnight. But reducing the stove's air supply does little for heating and can increase air pollution.
-  **Keep your chimney clean** to provide good draft for your stove and to reduce risk of a chimney fire. Have a certified chimney sweep inspect your chimney once a year. For safety, never leave a fire unattended.
-  **Upgrade to an EPA-certified wood stove or other clean burning technology.** All new stoves are EPA-certified and burn cleaner and more efficiently. A clean-burning stove emits 70 percent less particle pollution than an older, less-efficient stove. They also use 30 percent less wood.

**Fine particle emissions in one hour:**

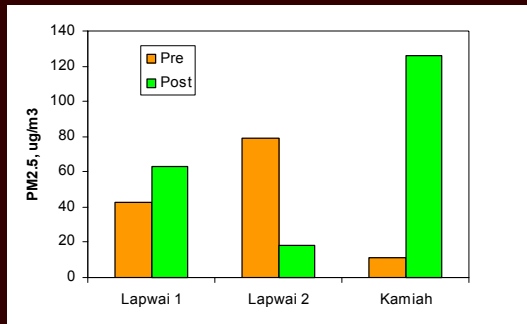
 <p>15-30 grams</p> <p><small>Old, inefficient stove</small></p>	 <p>2.7 grams</p> <p><small>EPA Certified Stove</small></p>
<p><small>Certified stoves are 50% more energy efficient than non-certified stoves</small></p>	

For more information about burning clean, go to [www.epa.gov/woodstoves](http://www.epa.gov/woodstoves) 

## What EPA Is Doing

- EPA Region 10
  - Working with tribes to develop clean burning education materials
  - Work group made up of tribal AQ staff with changeout experience
  - Just getting started – Plan to have first materials by September
  - We are looking at what has worked well for tribal communities and local air agencies

# Importance of Education with Changeouts



Sampling after a second home visit indicates significant improvement – Why? What was different?

## New Woodstove Operation

1. *This is not your old woodstove.* Your new woodstove does not operate the same as your old woodstove.
2. Temperature. Temperature. Temperature is very important. Before you shut down your new woodstove, it must be hot.
3. With proper operation, the glass in the door will stay clear. Burning too cold, the glass will soot up. (If the glass is dirty, you may be shutting your burns down too soon) Also, burning too cold can cause excess creosote buildup in your chimney.
4. Clean the ashes out at least twice a month. You don't want the ash to build up past the front rail.
5. You must use dry, seasoned wood. Smaller pieces burn better and longer. (Wet wood traps moisture in the stove and puts the fire out)

## Burning Tips

1. Starting a fire: Completely open the draft. Push the air control lever all the way to the left. The marking is H (maximum firing rate).
2. Temperature: Get the fire hot. You want the temperature to be between 500 and 600 degrees. May take from 20 to 60 minutes.
3. Shutting down: Once you get the fire hot, gradually begin closing the damper. Eventually, you want the lever all the way to the right on L, because the stove works the best on "Low" (provided that the fire got up to between 500-600 degrees).
4. Reloading: completely open the draft. Move the lever to H (the lever all the way to the left). Get the temperature back up to between 500 and 600 degrees. Then, gradually begin closing the damper. See step 3 above.
5. Always keep the door closed when burning. This heater is not designed for open door burning.

## Changeout Lessons Learned

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### ■ Personal Contact & Follow Up

- Mandatory meeting for changeout, list of steps, follow up home visits, tribal member certified wood burning specialist

*(Johna Boulafentis, Nez Perce Tribe)*

- Survey mailers & actions if dissatisfied

*(Lisa Woodard, Spokane Clean Air Agency)*

- One-on-one contact: meetings, volunteers placing door hangers, home visits, involve local citizens

*(Sally Marcos, Lane Regional Air Protection Agency)*

## Changeout Lessons Learned

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### ■ Behavior Change

- Wood bank for seasoned wood

*(Tony Basdabe, Swinomish Tribe)*

- Focus on the family

*(Johna Boulafentis, Nez Perce Tribe)*

- Focus initially on reducing fuel costs

*(EPA survey)*

- Motivators – efficiency, heat quality, use 1/3 less wood. Air quality is not a reason!

*(BC Canada Survey)*

- Be careful not to paint wood burning in negative light – if burning wood, do it as efficiently as possible

*(EPA, Spokane Clean Air, BC Canada Survey)*

# Changeout Lessons Learned

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## ■ Perceptions

- Difficult to overcome perception that air quality is not a problem  
*(Sally Marcos, LRAPA, & Johna Boulafentis, Nez Perce )*
- Reasons for heating with wood – cost, abundance of wood, dry heat  
*(BC Canada Survey )*
- Disadvantages of heating with wood – mess, work involved  
*(BC Canada Survey )*

# Example from State Agency

## Alaska Department of Environmental Conservation

- Brochures
- Website
- TV PSAs
  - Spring – reminder to allow wood to dry
  - Fall – clean burning practices
  - PM source message – Health focus

# Example from Local Agency

## Spokane Clean Air Agency

- Ongoing since 1990s
- Welcome to the neighborhood packets
- TV PSAs
- Partner with retailers & other agencies
  - retailers provide effective education for new stoves
  - Recently developed 4 min. DVD w/EPA grant, and other partners

[www.airwatchnorthwest.org](http://www.airwatchnorthwest.org)