Filters in Our Lives, Decreasing Our Exposure to Wildland Smoke

Clean Air Spaces: Indoor Air Filtration to Protect Public Health During Wildland Fire Smoke Episodes - What are the Knowns and Unknowns

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Confederated Tribes of the Colville Reservation

1.4 Million Acres
12 Tribes
7,587 residents
3.5 people per square mile
Major employers - Tribal, County, State and Federal governments
Lands in both fee (20%) and trust (80%)
Concentrations Over 985 μg/m³
## Indoor Air Quality

Measurements From the Morning of August 25 and 26, 2015

<table>
<thead>
<tr>
<th>Location</th>
<th>Concentration</th>
<th>Health Status</th>
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</thead>
<tbody>
<tr>
<td>My Office</td>
<td>405 μg/m³</td>
<td>Hazardous</td>
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<tr>
<td>Head Start</td>
<td>633</td>
<td>Hazardous</td>
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<tr>
<td>Administration Building</td>
<td>798</td>
<td>Hazardous</td>
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<tr>
<td>IHS Clinic Lobby</td>
<td>166</td>
<td>Very Unhealthy</td>
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<tr>
<td>Emergency Command</td>
<td>1415</td>
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<td>Food Distribution</td>
<td>1403</td>
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<tr>
<td>Outside Concentration</td>
<td>980 to 2000</td>
<td>Catastrophic</td>
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</tbody>
</table>
What’s Your Smoke Exposure

2018 A Year of Smoke, Omak Monitor 24 Hour Averages
WAQA
<table>
<thead>
<tr>
<th>Source of Smoke</th>
<th>June</th>
<th>July</th>
<th>August</th>
<th>September</th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>January</th>
<th>February</th>
<th>March</th>
<th>April</th>
<th>May</th>
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<tbody>
<tr>
<td>Residential wood Stoves</td>
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<td>Residential Wood Debris</td>
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<td>Prescribed Fire</td>
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</table>
Air Filters Needed in Our Lives

Smoke will be in our lives
Our building will have smoke intrusion
We spend many hours indoors
Health messaging emphasizes staying indoors

Air Filters are the best investment to protect your health
Good

Better

Best
Box Fan / Filters

• Large rooms take up to 2 hours to clean the air, 25 minutes for a medium room and 15 for a small room*

• Fans on high speed twice as fast as low, 15 vs 35 minutes*

• Two filters in a V twice as fast a single, 20 vs 40 minutes*

• Faster than manufacture home filters on medium and high speed*

• Any filter restricts air flow

• Consider cooling options

*Graeme Carvlin 2018
Manufactured Air Filters

• Use in small rooms
• Continuous operation
• Maintain filters
• Cost of replacement filters
• Ozone generators
• Multiple units in home
# Whole Home Options

<table>
<thead>
<tr>
<th>Duct AC Systems</th>
<th>Ductless AC Systems</th>
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</thead>
<tbody>
<tr>
<td>Central location/outside compressor</td>
<td>Wall mounted/outside compressor</td>
</tr>
<tr>
<td>Entire home</td>
<td>Small areas or rooms</td>
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<tr>
<td>Variable outside air</td>
<td>No outside air</td>
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<tr>
<td>Filters easily changed</td>
<td>Filter maintenance</td>
</tr>
<tr>
<td>May not filter smoke</td>
<td>May not filter smoke</td>
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May not filter smoke
Cooling is Essential

• High ambient temperatures
• Managing widows and shades
• Cleaner air in the afternoon
Vehicle Filters

- Always use recirculate option
- 75% reduction while parked in 15
- Less reduction when driving
- Replace filters between 25,000 and 35,000 miles
N-95 Masks

- Many people ask for them and few wear them
- Styles
- Works with beards
- Needs to become acceptable to wear
Next Steps

• Increase our knowledge of indoor smoke intrusion
  – Compile a checklist for evaluation of building
  – Develop technical guidance to evaluate building for intrusions

• Convene a two day workshop on Smoke Ready Communities to define and outline guidance
Conclusion

Protect your health by taking step to minimize your exposure to smoke during wildfire season and all year.

We have not reached the new normal
Learn how you and your community can become Smoke Ready
Contact

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