Healthy Homes, Healthy People

Radon – Why You Should Test
Before We Get Started....
The Alaska Native Tribal Health Consortium’s (ANTHC) Vision: *Alaska Native people are the healthiest people in the world*
Environmental Conditions

Alaskans spend an average of 90% of their times indoors. Indoor environmental conditions affect the individual health and quality of life.
Respiratory Health

Alaska Native children have some of the highest rates of respiratory illness ever documented.

Causes:

• Poor indoor air quality
• Lack of in-home piped water services
• Overcrowding
In fact, Alaska Native/American Indian children bear higher burdens of respiratory disease and hospitalizations

<table>
<thead>
<tr>
<th>Respiratory Disease</th>
<th>Hospitalizations under 5</th>
<th>Hospitalizations (infants)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.6 X general US child rate</td>
<td>3 X general US child rate</td>
<td>3.7 X general US child rate</td>
</tr>
</tbody>
</table>
Program Introduction

The Air Quality and Healthy Homes program is just one of many environmental programs within the Alaska Native Tribal Health Consortium (ANTHC).

– Provide educational materials and tools to Tribes and members.

– Help improve home environments by improving indoor air quality and reducing indoor air pollutants.

– Provide technical assistance and training to local coordinators and residents.

– Conduct home assessments.
Tribal Air Quality and Healthy Homes Goal

Improve the respiratory health of Alaska Native children, and provide a model to be used in indigenous communities in Alaska and across North America.
7 Principles of a Healthy Home

- Pest-Free
- Safe
- Contaminant-Free
- Clean
- Ventilated
- Dry
- Maintained
Trivia Break

What is the average time Alaskan’s spend indoors?

90%

What are causes of AN children's respiratory illnesses?

- Poor indoor air quality
- Lack of piped water
- Overcrowding

What are 2 of the principles of a Healthy Home?

- Pest-Free
- Safe
- Contaminant Free
- Clean
- Dry
- Maintained
- Ventilated
Contaminant Free

• Volatile Organic Compounds (VOC’s)
• Wood Smoke
• Tobacco Smoke
• Mold / Moisture
• Lead
• Carbon Monoxide
• Ventilation
• Radon
Radon

Radon is an element and part of our natural environment

Produced by the radioactive decay of uranium

Found in some bedrock, radon leaches upward through airspaces in the soil and is released
Homes built into the ground (basement) or directly on the ground, are susceptible for radon gas entering the home through small cracks, gaps and sometimes well water.
Radon

Homes built above ground with no soil contact are safe from radon home exposure.
Mitigation
Subslab Depressurization

Exhaust Option 2: Exterior Stack
Exhaust Option 1: Interior Stack
To Exhaust Fan Mounted in Attic

Sealant
Suction Pipe
Sealant Around Suction Pipe
Soil Gas
Pit
Radon Health Effects

Radon is inhaled through the lungs and is the primary cause of cancer in non-smokers and the 2nd leading cause of lung cancer in smokers.

Source: EPA http://www.epa.gov

*Radon is estimated to cause about 21,000 lung cancer deaths per year, according to EPA’s 2003 Assessment of Risks from Radon in Homes (EPA 402-R-03-003). The numbers of deaths from other causes are taken from the Centers for Disease Control and Prevention’s 1999-2001 National Center for Injury Prevention and Control Report and 2002 National Safety Council Reports.
Radon Levels

Set EPA Action level is 4pCi/L

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**Radon Risk If You Have Never Smoked**

<table>
<thead>
<tr>
<th>Radon Level</th>
<th>If 1,000 people who never smoked were exposed to this level over a lifetime*...</th>
<th>The risk of cancer from radon exposure compares to**...</th>
<th>WHAT TO DO:</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 pCi/L</td>
<td>About 36 people could get lung cancer</td>
<td>35 times the risk of drowning</td>
<td>Fix your home</td>
</tr>
<tr>
<td>10 pCi/L</td>
<td>About 15 people could get lung cancer</td>
<td>20 times the risk of dying in a home fire</td>
<td>Fix your home</td>
</tr>
<tr>
<td>8 pCi/L</td>
<td>About 15 people could get lung cancer</td>
<td>4 times the risk of dying in a fall</td>
<td>Fix your home</td>
</tr>
<tr>
<td>4 pCi/L</td>
<td>About 7 people could get lung cancer</td>
<td>The risk of dying in a car crash</td>
<td>Fix your home</td>
</tr>
<tr>
<td>2 pCi/L</td>
<td>About 4 person could get lung cancer</td>
<td>The risk of dying from poison</td>
<td>Consider fixing between 2 and 4 pCi/L</td>
</tr>
<tr>
<td>1.3 pCi/L</td>
<td>About 2 people could get lung cancer</td>
<td>(Average indoor radon level)</td>
<td>(Reducing radon levels below 2 pCi/L is difficult.)</td>
</tr>
<tr>
<td>0.4 pCi/L</td>
<td>(Average outdoor radon level)</td>
<td>(Reducing radon levels below 2 pCi/L is difficult.)</td>
<td></td>
</tr>
</tbody>
</table>

* Lifetime risk of lung cancer deaths from EPA Assessment of Risks from Radon in Homes (EPA 402-R-03-003).
** Comparison data calculated using the Centers for Disease Control and Prevention’s 1999-2001 National Center for Injury Prevention and Control Reports.

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**Radon Risk If You Smoke**

from *A Citizen’s Guide to Radon: The Guide to Protecting Yourself and Your Family From Radon*

<table>
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<tr>
<th>Radon Level</th>
<th>If 1,000 people who smoked were exposed to this level over a lifetime*...</th>
<th>The risk of cancer from radon exposure compares to**...</th>
<th>WHAT TO DO:</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 pCi/L</td>
<td>About 260 people could get lung cancer</td>
<td>250 times the risk of drowning</td>
<td>Fix your home</td>
</tr>
<tr>
<td>10 pCi/L</td>
<td>About 150 people could get lung cancer</td>
<td>200 times the risk of dying in a home fire</td>
<td>Fix your home</td>
</tr>
<tr>
<td>8 pCi/L</td>
<td>About 120 people could get lung cancer</td>
<td>30 times the risk of dying in a fall</td>
<td>Fix your home</td>
</tr>
<tr>
<td>4 pCi/L</td>
<td>About 62 people could get lung cancer</td>
<td>5 times the risk of dying in a car crash</td>
<td>Fix your home</td>
</tr>
<tr>
<td>2 pCi/L</td>
<td>About 32 people could get lung cancer</td>
<td>6 times the risk of dying from poison</td>
<td>Consider fixing between 2 and 4 pCi/L</td>
</tr>
<tr>
<td>1.3 pCi/L</td>
<td>About 20 people could get lung cancer</td>
<td>(Average indoor radon level)</td>
<td>(Reducing radon levels below 2 pCi/L is difficult.)</td>
</tr>
<tr>
<td>0.4 pCi/L</td>
<td>About 3 people could get lung cancer</td>
<td>(Average outdoor radon level)</td>
<td></td>
</tr>
</tbody>
</table>

* Lifetime risk of lung cancer deaths from EPA Assessment of Risks from Radon in Homes (EPA 402-R-03-003).
** Comparison data calculated using the Centers for Disease Control and Prevention’s 1999-2001 National Center for Injury Prevention and Control Reports.

Images from EPA Website @ https://www.epa.gov/radon/health-risk-radon#beir
Radon Testing

Much like carbon monoxide, you cannot see, smell or taste radon

The only way to know if there is a radon problem is to test your home.
Radon Testing

Images: EPA Website
https://www.epa.gov/radon/find-information-about-local-radon-zones-and-state-contact-information#radonmap
Trivia Break

How does radon get into a home?
Cracks, gaps, and sometimes well water

What type of home is safe from radon exposure?
Pilings / Above ground with no enclosure

What does radon smell like?
Nothing, odorless