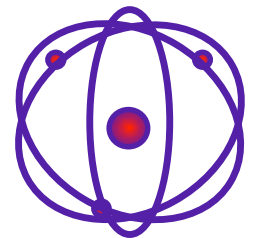


Asbestos - Yes, It's Still Around!

Presented by: Bob & Bob
Lake States Environmental, Ltd.
February 25, 2015

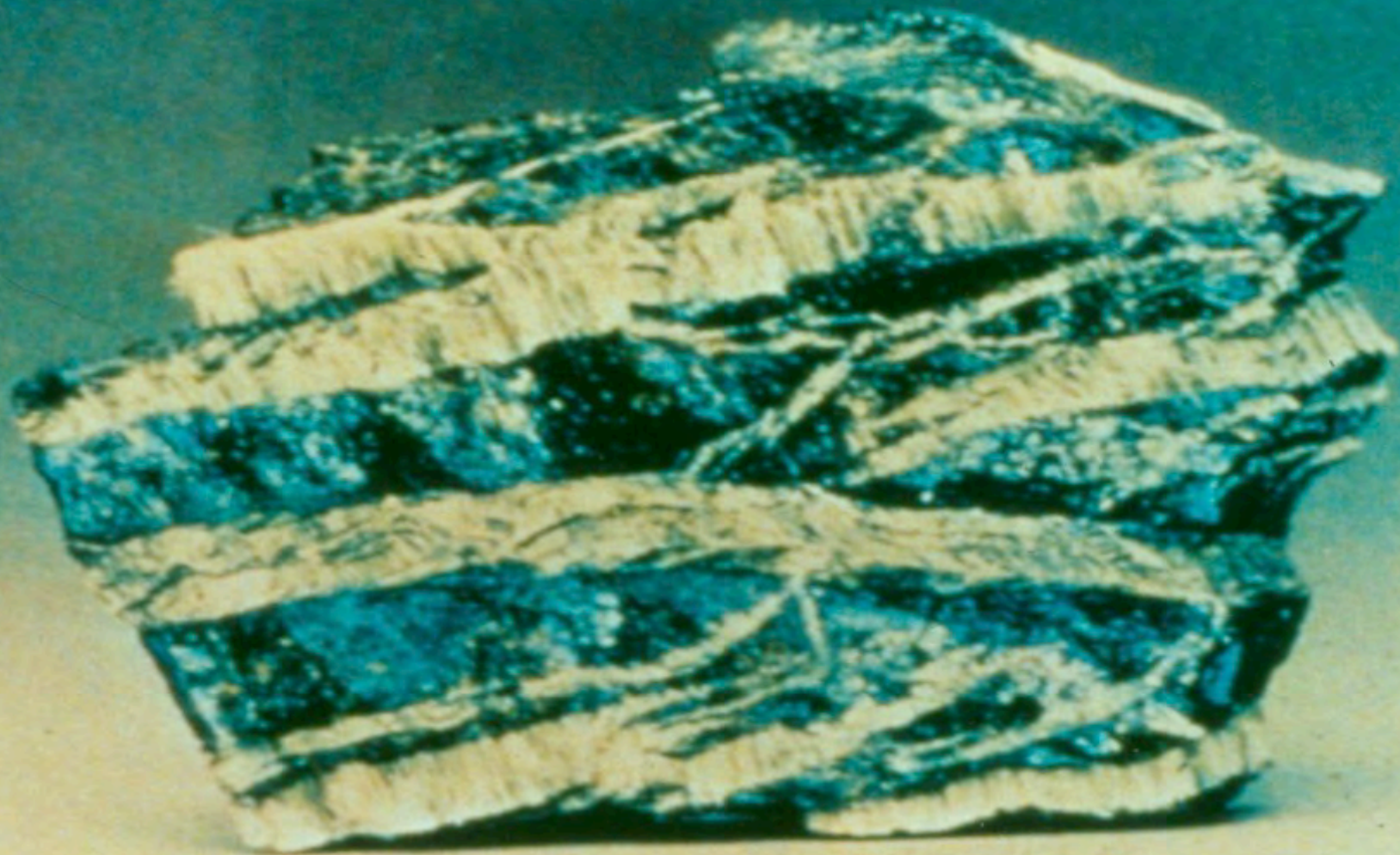




In accordance with the Department of Labor and Industry's statute 326.0981, Subd. 11,

“This educational offering is recognized by the Minnesota Department of Labor and Industry as satisfying **1 hour** of credit toward **Residential Contractors** continuing education requirements.”

For additional continuing education approvals, please see your credit tracking card.



The "Miracle Mineral"





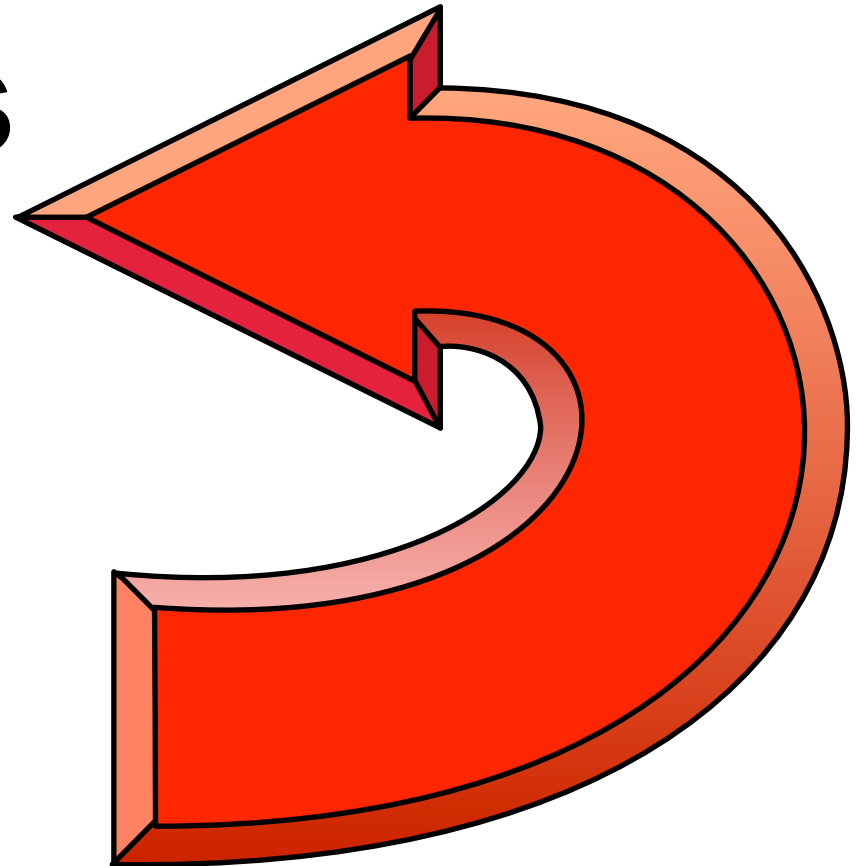
When is Asbestos dangerous?

- Asbestos is dangerous when it gets in the air and you breathe or swallow it



TYPES OF ASBESTOS

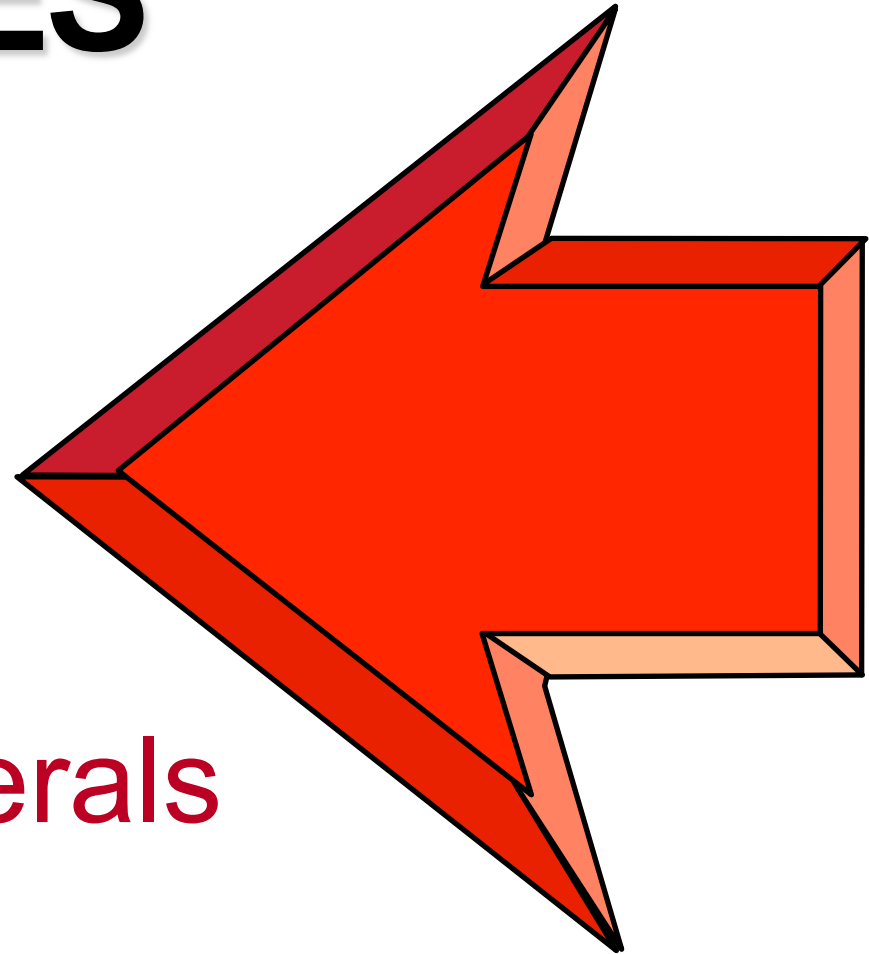
- **Amphiboles**
- **Serpentine**





AMPHIBOLES

- f* Shorter fibers
- f* Straight
- f* Rigid (not flexible)
- f* **Hard to wet**



Amphibole Minerals

- Amosite - brown
- Crocidolite - blue



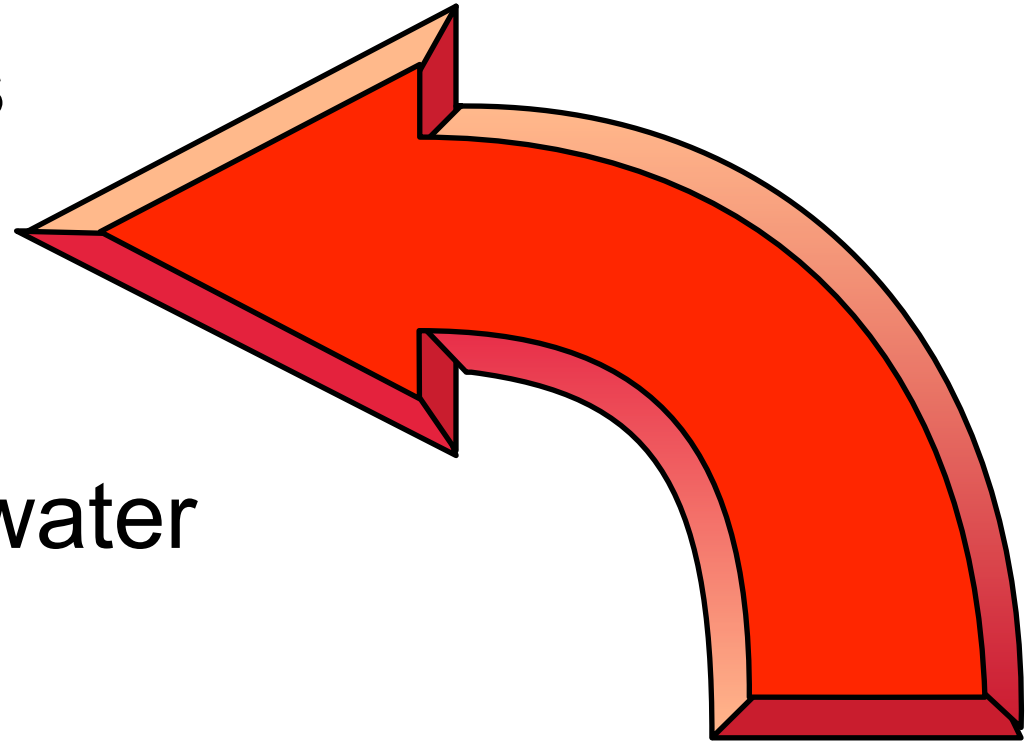
SERPENTINE

f Long, curvey fibers

f Flexible fibers

f Wettable fibers...

with amended water



Serpentine Mineral

- Chrysotile - white

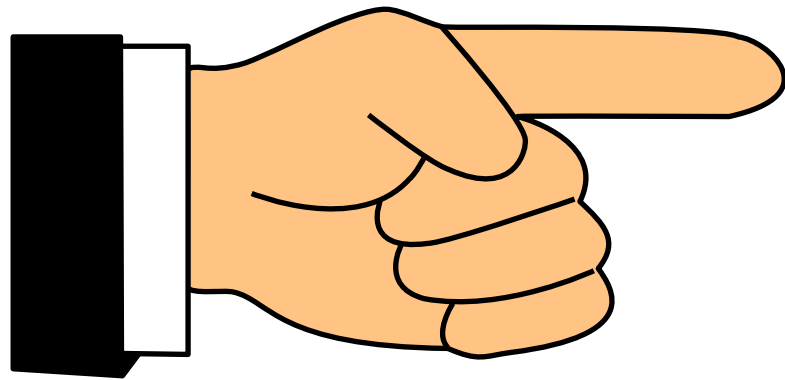


MORE ABOUT ASBESTOS

- Bundles of fibers which break apart easily
- Fibers are microscopic
- Very aerodynamic - float for days
- Strong as steel
- Resists breakdown from heat
- Resists breakdown from chemicals
- The best insulator
 - f* Temperature
 - f* Sound
 - f* Electricity
- Cheap



DEFINITIONS



- Friable
- Non-friable



FRIABLE ASBESTOS

- Asbestos that can be crumbled or pulverized by hand pressure.
- Friable asbestos is more dangerous because the fibers are more likely to get in the air.





NON-FRIABLE ASBESTOS

- Asbestos that cannot be crumbled or pulverized by hand pressure.





ASBESTOS CONTAINING MATERIAL - ACM

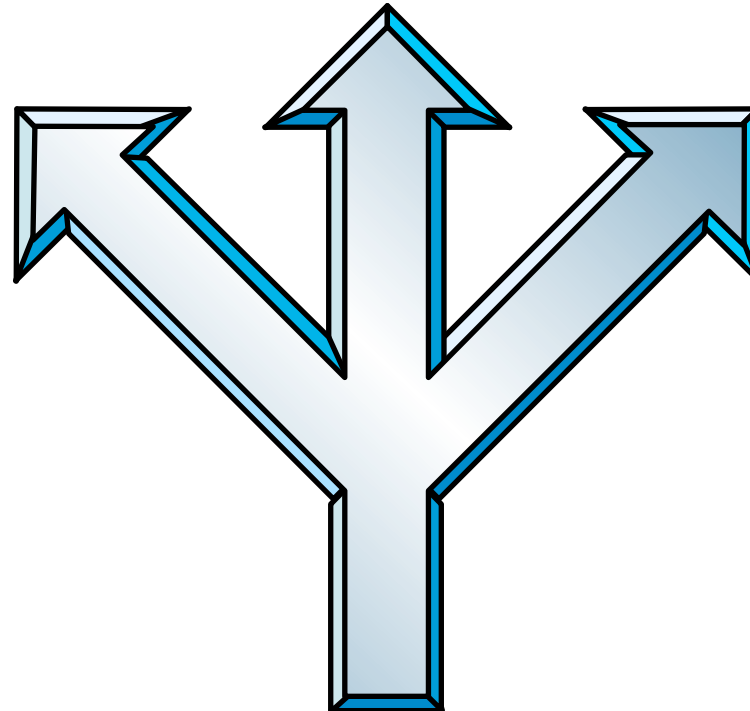
ACM is defined as a material containing greater than 1 % of an asbestos mineral.





CATEGORIES OF ACM

- Surfacing material
- Thermal system insulation (TSI)
- Miscellaneous Materials





SURFACING MATERIAL

- An asbestos containing material that is **sprayed, troweled-on** or otherwise applied to surfaces (such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, and other purposes).












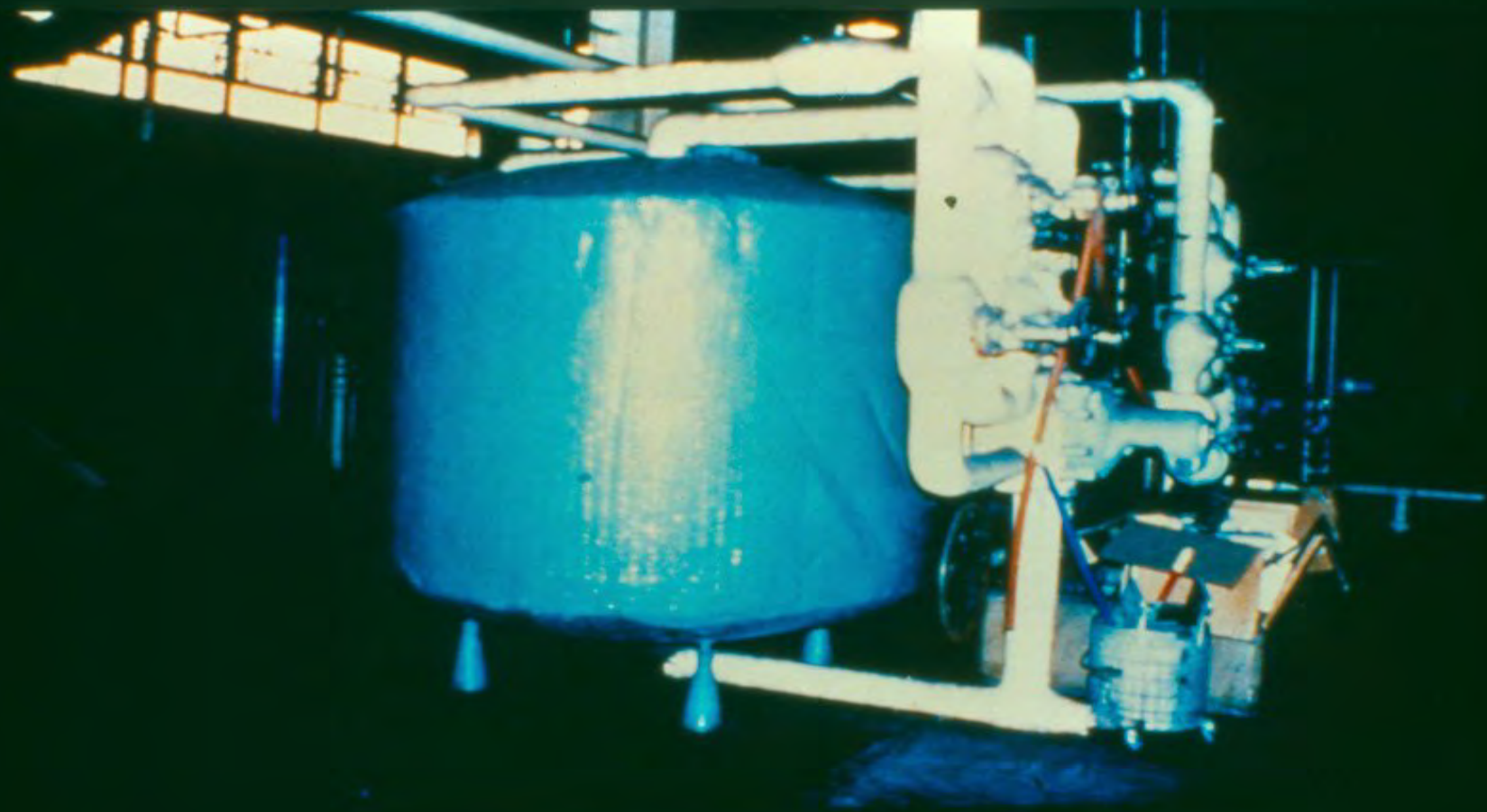


THERMAL SYSTEM INSULATION (TSI)

- Asbestos containing materials applied to pipes, fittings, boilers, breeching, tanks, ducts or other structural components to prevent heat loss or gain.

TSI ACM contains more than 1% asbestos.







12 - 27





MISCELLANEOUS

- Any other type of asbestos containing material.



X111-2-2



Health Effects of Exposure to Asbestos

Asbestos Diseases





Asbestos can Kill You...

- When you work around asbestos, you must work carefully. Avoiding accidental disturbances is important.
- When asbestos is in the air, it gets into your body when you breathe and when you swallow.




Asbestos Diseases

Asbestosis

Lung Cancer

Mesothelioma

Other (GI) Cancers



How do we know that asbestos can make you sick?

- We have been accumulating information for decades, tracking life and death histories of workers who's jobs involved exposure to asbestos.
- Over time it has become apparent that workers who were exposed to asbestos developed and died from diseases we now know are caused by asbestos.



How much asbestos is dangerous?

- There is no safe level of exposure to asbestos.
- But we do know that most diseases associated with the exposure to asbestos are dose-related.
- Asbestosis, Lung Cancer and Digestive System cancers are all dose-related.
- Mesothelioma is different. It appears to be incidence related, with dose not being much of a factor.



Mesothelioma

- This is also the one disease that is only caused by exposure to asbestos.
- It is often referred to as the "Marker Disease" for exposure to asbestos sometime in a worker's past.



When is Asbestos Dangerous?

- Asbestos is silent and deadly. You cannot see, hear, feel, taste, smell, or touch the small asbestos fibers that enter your body.
- It doesn't make you cough or sneeze, nor make you throat or skin itch.
- But if it is in the air, you can breathe it. That's when asbestos is dangerous!



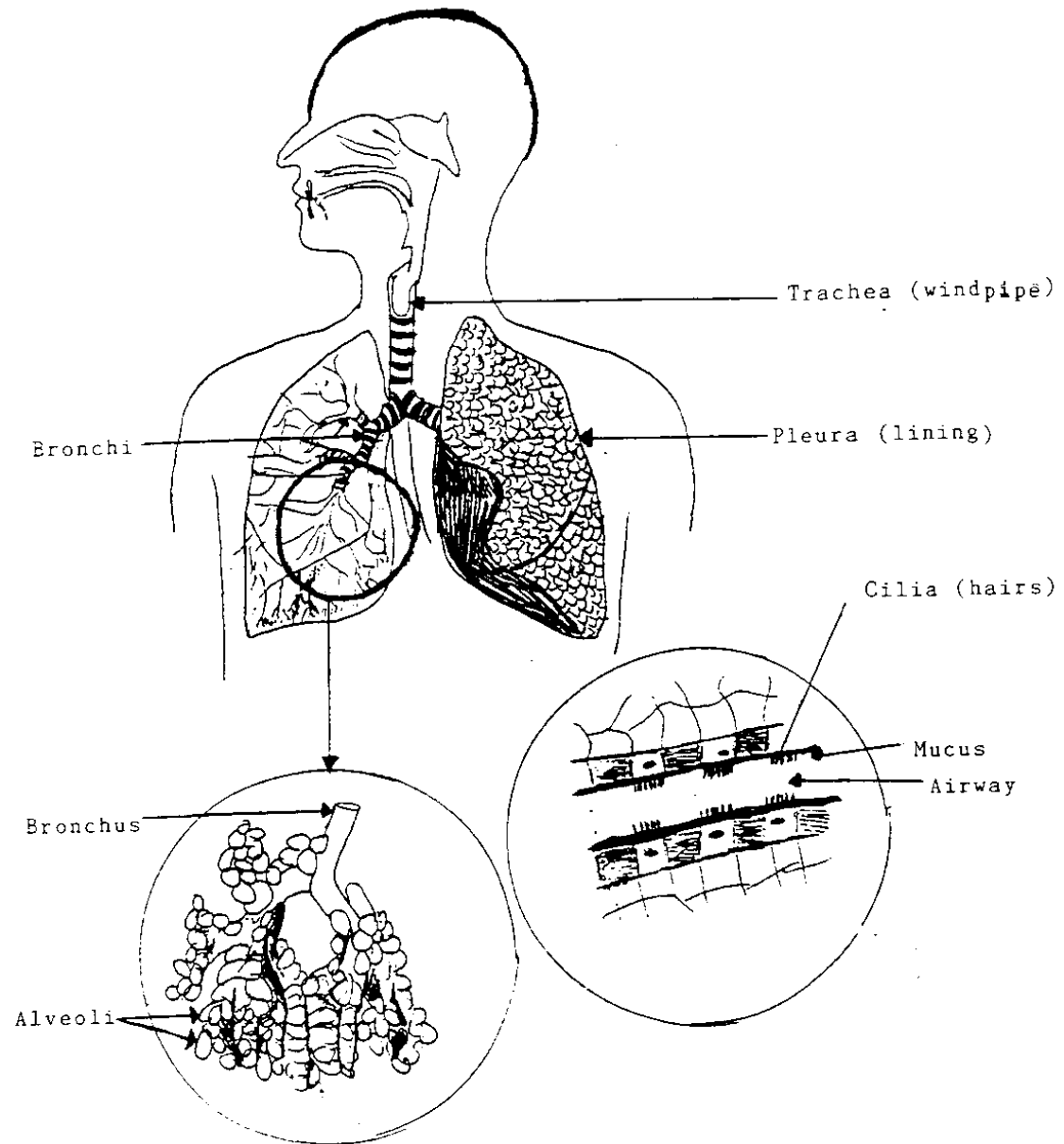
Latency Period

- The time between when a person is exposed to a hazard and when the symptoms develop from the exposure.
- The latency period is between 10 to 40 years

Your body has its own natural defense to help eliminate asbestos

But some of the tiny fiber can
still pass through these
defenses







Asbestosis

Scarring of the Lung Tissue

Specifically the Alveoli membranes



Lung Cancer

Cancer in the Lung

Usually in the pipes at a turn or junction.



Mesothelioma

Cancer of the Plural Lining(s)

Pleural mesothelioma

Chest cavity

Peritoneal mesothelioma

Abdomen (belly)



Other Cancers

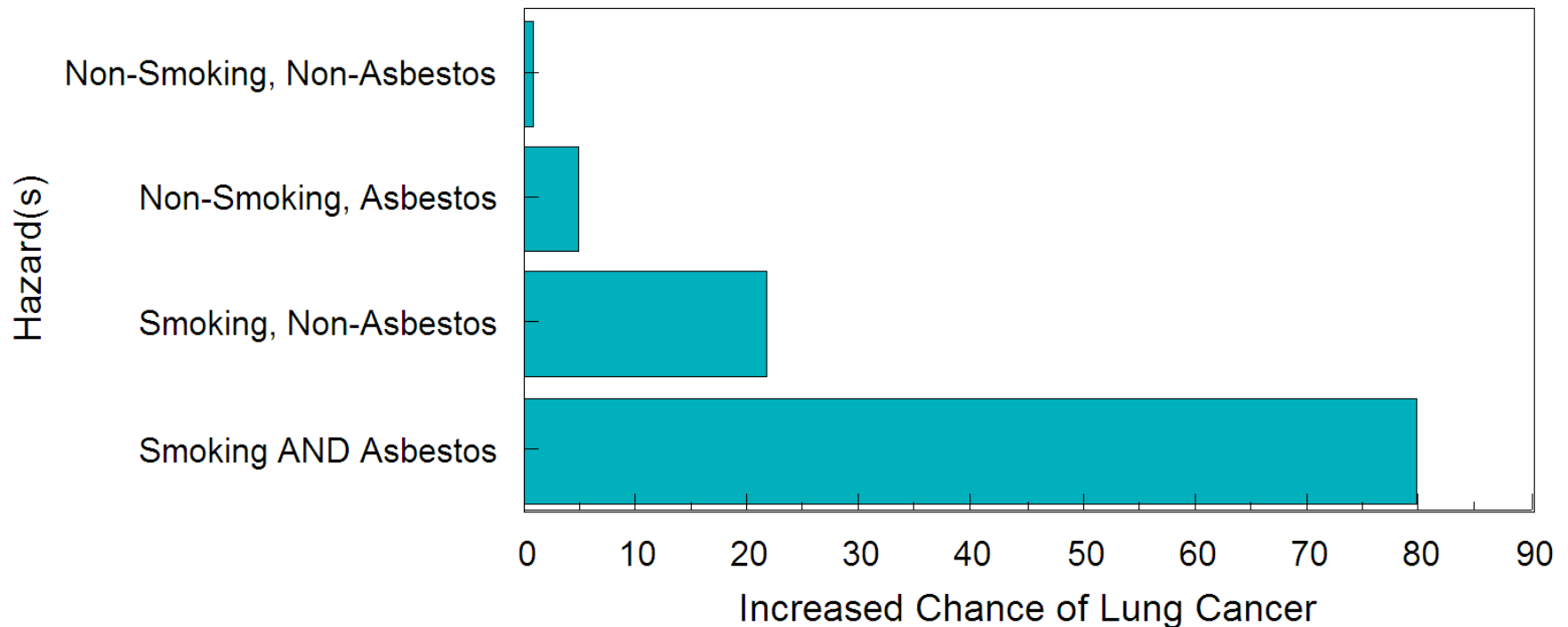
Other Cancers can include:

Mouth, tongue, throat, voicebox, esophagus, stomach, intestinal, colon, rectal, and liver cancer.

Smoking and Asbestos Exposure

- The Synergistic Effect - Multiplying Effect

Synergistic Effect of Combining Smoking and Asbestos Hazards



**People who work with
Asbestos over a certain
period of time will be
required to have medical
exams**
These exams come at no cost
to the worker





How do they determine if a material contains Asbestos?

- Samples is sent to a lab for testing.
- This sample must be collected by an MDH certified Asbestos Inspector.
- The sample is analyzed under a Polarized Light Microscope (PLM) to determine the results.
- The lab sends out a report indicating if the suspect material contains Asbestos and at what %.