

# You, Your Lungs, and Air Pollution

## The Respiratory System

When we breathe in (inhale), air is brought into our lungs. As blood flows through our lung tissue, it absorbs oxygen from the air and carries it to all parts of our body. At the same time, our blood releases carbon dioxide ( $\text{CO}_2$ ) which is carried out of the lungs when we breathe out (exhale).

Our body has natural defenses that protect us when we breathe in larger particles, like dust. We may cough, sneeze, or our eyes may water to help expel the objects. But, some of the particles are so small that they get passed our defenses and can hurt us.

## Particulate Matter (PM)

Particulate matter is solid or liquid particles so tiny that 1,000 of them lined up, would equal the width of one human hair. Dust, soot, and smoke are the most common forms of PM in Spokane. Most PM comes from fireplaces,



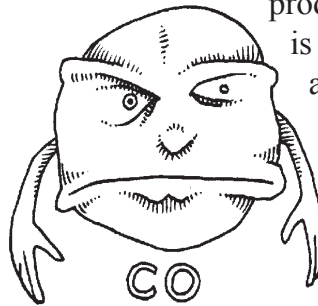
PM

woodstoves, and driving on unpaved or dusty paved roads. The tiny particles find their way deep into the lungs where they affect breathing, cause coughing and throat irritations, and in the long term, lung damage. These small

particles are sometimes coated with other substances which may be harmful to health. Children and older people are affected the most by particulate matter.

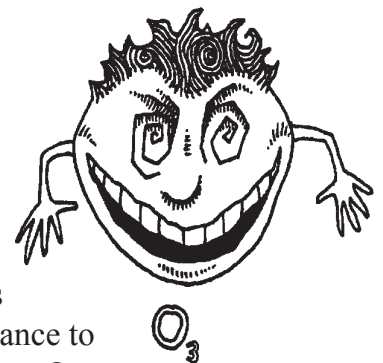
## Carbon Monoxide (CO)

You can't see it, you can't smell it, and you can't taste it. Carbon Monoxide (CO) is produced whenever something is burned... like gasoline in an automobile engine. In fact, most of the CO in Spokane's air comes from the cars we drive. When inhaled, CO reduces the ability of our blood to absorb and transport oxygen to our cells, tissue, and organs. This can cause headaches and tiredness, blurred vision, and slow reflexes. Carbon monoxide is particularly harmful to people with heart or lung diseases and to pregnant women.



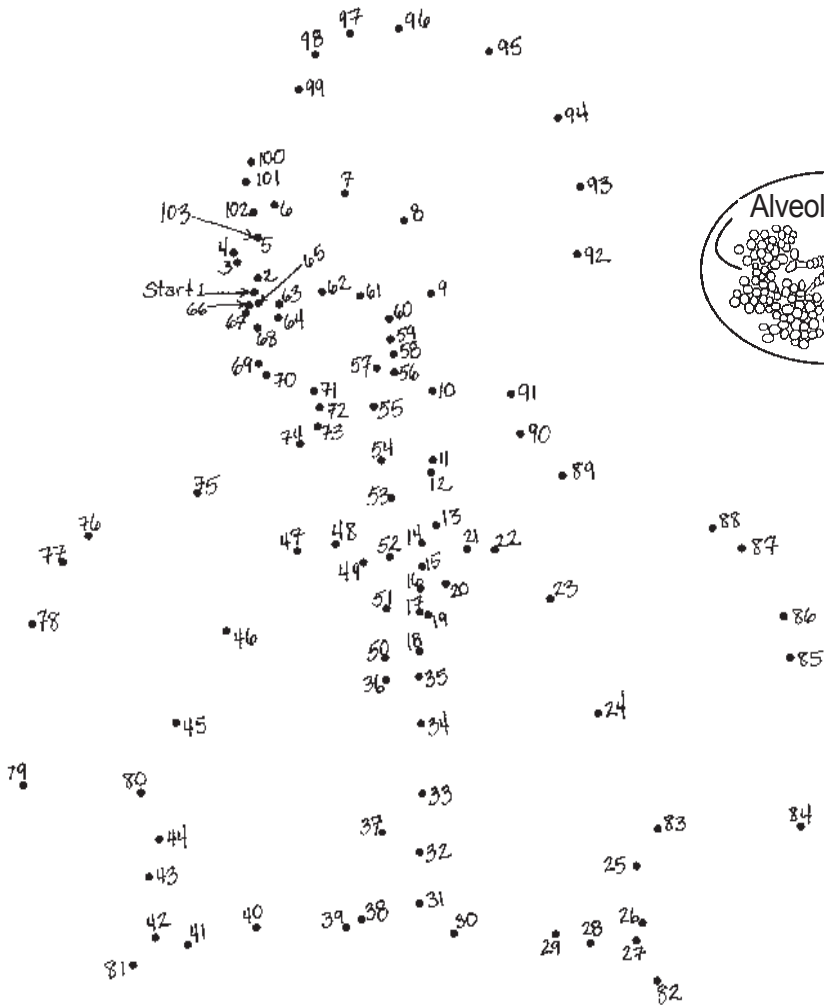
## Ground-level Ozone (O<sub>3</sub>)

Ground-level ozone is formed when pollutants from gasoline refueling, automobiles, paints and other sources, "bake" in the hot summer sun. Ozone pollution can irritate your eyes, nose and throat. It is known to trigger asthma attacks and cause reduced resistance to colds and other infections. Ozone can be especially problematic for those people who have existing lung diseases. Children are also at risk because they are more active outside and their lungs are still developing.



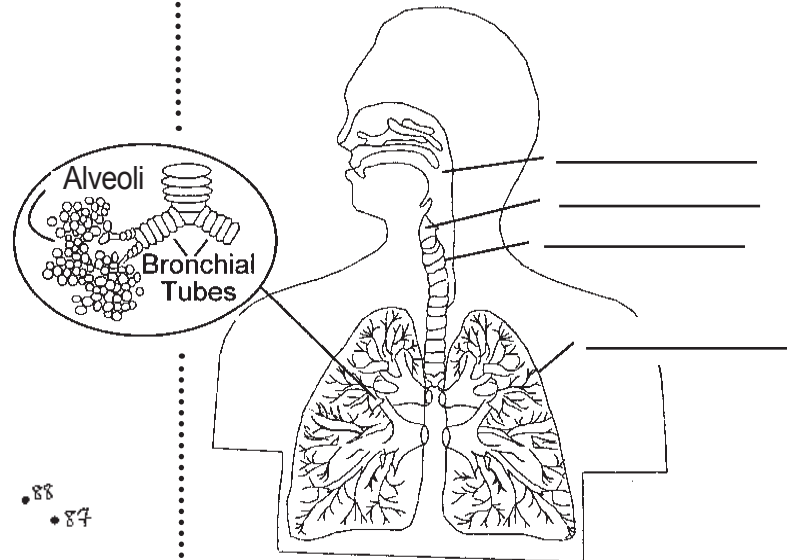
# Connect-the-Dots

Can you identify some in the parts of your finished drawing?



# Identify the Parts

Can you identify some of the parts in this picture?



**PHARYNX**- collects incoming air from the nose and mouth and passes it downward.

**LARYNX** (voice box) - where moving air, being breathed in and out, creates voice sounds.

**TRACHEA** (windpipe) - the passage leading to the lungs, which divides into the two main bronchi (tubes), one for each lung. The smallest bronchi are called **BRONCHIOLES**. Each tube is lined with **CILIA** (like very small hairs) whose wave-like motion helps sweep unwanted particles from entering the lungs.

**ALVEOLI** are the very small air sacs where oxygen and carbon dioxide are exchanged with the blood.



**Your body fights air pollution and you can too!**

Your body's natural defense system begins with your face! Nose hairs help prevent pollution from entering your nasal passages. Air passages are lined with a sticky substance called mucus. The mucus traps germs and particles before they can enter the lungs. You can help reduce the amount of pollution you create. You could ride a bike or walk instead of getting a ride in a car. Plus, when you walk or use a bicycle, you're helping your body become more powerful through exercise.



More information about Spokane's air can be found at [www.spokanecleanair.org](http://www.spokanecleanair.org).