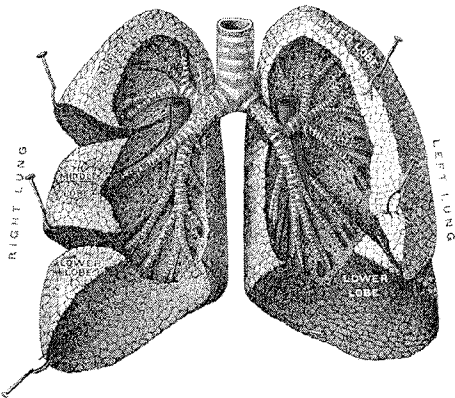


# INTRICATE CONSTRUCTION



Our lungs fuel us with oxygen, which we breathe in air, and extract the oxygen and pass it into the bloodstream, where it's rushed off to the tissues and organs to perform their function.

Oxygen drives the process of respiration, which provides our cells with energy. The waste gas carbon dioxide is produced and disposed of by the lungs. Without this vital exchange, our cells would quickly die and the body would suffocate.

## Intricate Construction

Our two lungs are filled with a complex latticework of tubes, which are suspended, on either side of the heart, in the chest cavity by a framework of elastic fibers. At the top of the lungs is the trachea, which leads to the bronchi. The trachea is a tube that leads to the bronchi, which are branching tubes that lead to either lung.

Within the lungs, the bronchi split like the branches of a tree into tens of thousands of ever-smaller tubes (bronchioles), which connect to tiny sacs called alveoli. The average adult's lungs contain about 600 million of these spongy, air-filled structures. There are enough alveoli in just one lung to cover an area roughly the size of a tennis court.

The alveoli are the site of gas exchange. As we breathe in, oxygen enters the alveoli and diffuses into the bloodstream. At the same time, carbon dioxide, which is a waste gas, is expelled as we breathe out.

The rate at which we breathe is controlled by the brain, which is quick to sense changes in gas concentrations. This is why you can't hold your breath for long. The brain's biggest worry is oxygen, and the first sign of a shortage is a gasping breath.

## In and Out

The process of breathing is done mainly by the diaphragm, a sheet of muscles between the chest and abdomen. The diaphragm contracts when we breathe in, expanding the lungs and drawing in air. We breathe out simply by relaxing the diaphragm; the lungs deflate like balloons.

The lungs are delicate organs and vulnerable to damage. The most common cause of lung disease is smoking, which is linked to lung cancer, which is the leading cause of death in the United States.

## **Intricate Construction**

Lungs fuel us.  
Breathe in air,  
extract the oxygen,  
pass it into the bloodstream

Oxygen drives respiration,  
providing cells with energy .

Without this vital exchange  
cells would quickly die,  
the body suffocate.

### **In and out.**

#### **This intricate construction.**

A complex latticework of tubes,  
suspended on either side of  
the heart,  
the chest cavity a framework of elastic fibers.

Bronchi split like branches of a tree into tens of thousands of bronchioles,  
tiny sacs: alveoli.  
Spongy, air filled structures enough  
to cover  
an area  
the size of a tennis court.

Waste gas  
expelled as we breath out.

And all of this, controlled by the brain.

### **In and out.**

#### **This intricate construction.**

The diaphragm,  
sheet of muscles between the chest and abdomen.  
Contract when we breathe in,  
expanding the lungs and drawing in air.  
Breathe out simply by

relaxing the diaphragm.  
Lungs deflate like balloons.  
Delicate organs and vulnerable.

**In and out.**

**In and out.**

**This intricate construction.**