

INTEGRATING HEALTH**● Why Your Ears Pop**

If you have ever traveled on an airplane or taken an elevator to the top of a tall building, you may have experienced a “popping” sound in your ears. Your ears often pop whenever your altitude changes quickly. But why?

When you are on the ground, the air around you exerts a certain pressure on all parts of your body, including your eardrums, which are located at the end of the ear canals. As you go higher above the Earth’s surface, the air pressure decreases. So, when you go to the top of a tall building, you move from an area of greater air pressure to an area of lesser air pressure.

Eustachian Tubes Connect the Middle Ear to the Throat

Between the eardrum and the inner ear, there is a small, hollow space filled with air. In both ears, this space (located in the middle ear) is connected to the back of the throat by small tubes called the Eustachian tubes. These tubes usually remain closed, but they open when you swallow or yawn.

When the air pressure around you changes quickly, the air pressure in the hollow space inside your middle ear remains at the original air pressure. But not for long. The unequal air pressure on either side of the eardrum begins to push your eardrum out. If your body did not have some way to change the air pressure inside your ear, you might develop an earache caused by the pressure exerted on your eardrum.

Equalizing Air Pressure

Ordinarily, swallowing opens the Eustachian tubes. Depending on whether the pressure is greater (or lesser) inside the hollow space, the air rushes out (or in) quickly, and a popping sound is produced. This mechanism allows the pressure to become equal on either side of the eardrums. Therefore, the popping sound in your ear occurs when the body attempts to equalize the air pressure between the middle and outer ear.

Your Turn to Think

1. What would probably happen if you could not pop your ears?
2. What would happen to the pressure on the outside of the eardrum if you went underwater?
3. If the pressure inside your ear were greater than the pressure outside, would your eardrum be pushed towards the outside or the inside of your ear? Explain your answer.