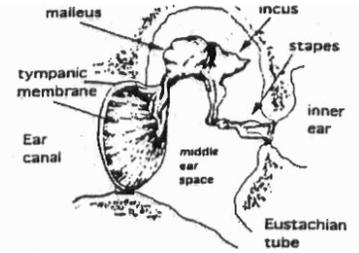




Planes and Our Ears



Ever wondered why your ears pop when you fly? Or why, if they don't pop, you might get an earache? Have you ever thought about why babies fuss or cry, especially when the plane descends for landing? Ear problems are the most common medical complaints of plane travelers. While they are usually minor annoyances, they occasionally cause temporary pain or even a hearing loss.

The culprit that causes these problems is the *middle ear space*, an air pocket that is covered by the eardrum or *tympanic membrane*. This space is really vulnerable to changes in air pressure. Almost every time we swallow, our ears make a barely noticeable click or popping sound. This is because a little bubble of air enters our middle ear, up from the back of our nose. It passes through the *eustachian tube*, a membrane-lined tube about the size of pencil lead that connects the back of the nose with the middle ear. The air in the middle ear is constantly being absorbed by its membranous lining, but is restored through a healthy eustachian tube whenever we swallow or yawn. The air pressure on both sides of our eardrums then stays about equal. When the air pressure isn't equal, our ears feel full.

The eustachian tube can become blocked for a number of reasons. When that happens, the middle ear pressure can't be equalized. The air that's trapped in the middle ear is absorbed. This creates a vacuum in the middle ear that sucks the eardrum inward. The stiffened eardrum can't vibrate naturally, so our hearing becomes muffled or "blocked." The stretching of the eardrum might even be painful. If the tube remains blocked, a watery fluid will seep into the middle ear space from the membrane lining so as to overcome the vacuum. This condition is

called "fluid in the ear", or medically speaking, *barotitis* ['barrow-tight-us'].

A frequent reason for a blocked eustachian tube is the common cold. Nasal allergies and sinus infections are also other causes. A stuffy nose leads to stuffy ears because the swollen membranes block the opening of the eustachian tube. Kids are especially vulnerable to blockages because their eustachian tubes are narrower and at less of an angle than adults.

Air travel is sometimes associated with rapid changes in air pressure. To overcome these changes, the eustachian tube must open frequently. This is particularly true when the airplane begins to descend, going from a low atmospheric pressure down closer to the earth where the air pressure is higher. Actually, any situation in which rapid altitude or pressure changes occur can create the problem. You might have noticed it when riding in elevators or when you dive to the bottom of a swimming pool. Deep sea divers and airline pilots are taught how to equalize their ear pressures. You can learn and use these tricks too.

Swallowing triggers the muscle that opens the eustachian tube. You swallow more when you chew gum or let mints melt in your mouth. These are good air travel practices, especially when the plane takes off or descends for landing. Yawning is an even better practice. Avoid sleeping during descent because you won't swallow as often as you need to. If yawning and swallowing aren't effective, unblock your ears as follows:

- Step 1: First pinch your nostrils shut;
Step 2: Then take a mouthful of air and close your mouth tightly;

Step 3: Using your cheek and throat muscles, force the air into the back of your nose as if you were trying to blow your thumb and fingers off your nostrils.

When you hear a loud pop in your ears, you have done it!

Remember the problem with a baby's eustachian tube? Unfortunately, a baby can't intentionally pop their ears. But popping might occur if they suck on a bottle or pacifier. Try to feed your baby during a flight and don't allow him or her to sleep while the plane descends. Older kids might get some relief by blowing up balloons during this critical time.

If you have a cold or sinus infection, it might be best if you postpone an airplane trip. Furthermore, if you recently had ear surgery, you should ask your surgeon how soon you can safely fly. Many experienced air travelers use a decongestant pill and/or nasal spray about an hour before their flight. These medications will shrink the membranes and help the ears pop more easily. If you want to use them, first check with your family doctor to make sure that they won't hurt you. Special ear plugs, called *Earplanes*[®] were recently developed to regulate the air pressure in our ears during air flight. Those of my patients who have used them claim that they work. There are sizes for both kids and adults and can be obtained at most pharmacies, airports or our office.

If your ears are still blocked after landing, you can continue the pressure equalizing techniques and medications described above. If your ears don't open or remain painful, you should call your doctor for his or her advice. Have a trouble-free trip, wherever you might be going!