

## Flight and Scuba Diving Precautions

**Our bodies are not meant to undergo large, rapid changes in pressure.** We were not built to fly very high or dive very deep. There are multiple pockets of air inside our heads that require a connection to the outside world via our noses to release the buildup or pressure that come with changes in altitude or depth – the sinuses and the middle ear.

Most people have experienced the sensation of fullness or pressure in the middle ears while on airplanes, driving up and down the mountains or hills, and potentially even on elevators. Many people have also experienced pressure in the forehead or facial areas that can occur with upper respiratory infections, sinus infections or allergies.

The sinuses and middle ears require a nose that is relatively clear to stay free of pressure. Even with a stuffy nose from infection or allergy, these areas can become uncomfortable. The larger and more rapid the change in pressure of the environment, the more difficult and painful it is to relieve the pressure inside these areas.

Sinus pressure can be excruciatingly painful. The middle ears, however, are much more susceptible to injury. **Over-inflation of the middle ear that results from being unable to pop the ears can result in rupture of the eardrum.** This is usually painful and can result in bloody ear drainage. Luckily, the eardrum heals itself with no permanent damage the vast majority of the time. If the eardrum does not rupture, the pressure can also result in a suction effect and draw fluid into the ear resulting in a blocked or painful ear with muffled hearing. Occasionally, dizziness can also occur. The fluid usually clears in a few days but can last up to a few months without intervention.

**It is possible, however, in very rare instances to experience damage to the inner ear which can result in partial or total loss of hearing and balance function in the affected ear.** This usually occurs as a result of a significant, rapid change in altitude or depth (airplane flight or SCUBA diving) combined with the inability to clear/pop the ears.

**The only way to ensure that you do not sustain permanent injury to your inner ear is to not fly or dive when you are at all stuffy or congested.** If you have control of your rate of ascent/descent (flying, driving, hiking, diving), do not proceed further up or down if you cannot pop your ears to release the pressure. Stop, pause, and let the pressure clear before moving on.

*For flights, you can take decongestants to make it easier to clear your ears:*

- A. take **Afrin** (oxymetazoline) or **Neo-Synephrine** (pseudoephedrine) nasal sprays a **half hour to an hour before takeoff and again before landing**
- B. take **Sudafed** or other nasal decongestants **the day of the flight** if you do not have high blood pressure or any known heart rhythm abnormalities