



## Perilymph Fistula

A *perilymph fistula* is a tear or defect in one or both of the small, thin membranes between the middle and inner ears. These membranes, the *oval window* and the *round window*, separate the middle ear from the fluid-filled inner ear.

The changes in air pressure that occur in the middle ear (for example, when your ears “pop” in an airplane) normally do not affect your inner ear. However, when a fistula is present, changes in middle ear pressure will directly affect the inner ear, stimulating the balance and/or hearing structures within and causing typical symptoms.

### Symptoms

The symptoms of perilymph fistula may include dizziness, vertigo, imbalance, nausea, and vomiting. Some people experience ringing or fullness in the ears, and many notice a hearing loss. Most people with fistulas find that their symptoms get worse with changes in altitude (elevators, airplanes, travel over mountain passes) or air pressure (weather changes), as well as with exertion and activity.

### Causes

Head trauma is the most common cause of fistulas, usually involving a direct blow to the head or in some cases a “whiplash” injury. Fistulas may also develop after

rapid or profound changes in intracranial or atmospheric pressure, such as may occur with SCUBA diving, aerobic maneuvers in airplanes, weightlifting, or childbirth. Fistulas may be present from birth or may result from chronic, severe ear infections. Rarely, they appear to occur spontaneously. Fistulas may occur in one or both ears.

### Diagnosis

The only positive way the diagnosis can be confirmed is by performing a tympanotomy (surgical operation) and directly viewing the area of the suspected fistula. If a fluid (perilymph) leak is seen, a perilymph fistula is assumed to be present.

A physician will also use information from your history and physical examination, as well as objective vestibular and audiometric test results, to assist in establishing the diagnosis of perilymph fistulas.

### Treatment

In many cases, a fistula will heal itself if a person’s physical activity is markedly restricted. In such cases, strict bed rest may be recommended to give the fistula a chance to close.

If symptoms are severe and have not responded to conservative treatment

(bed rest), or if progressive hearing loss has occurred, surgical repair of the fistulas may be required. This procedure involves placing a graft over the fistula defect in the oval and/or round window. Persons with fistulas should avoid lifting, straining, bending over, or any activity that would increase head pressure, since all of these will worsen symptoms and prevent the fistula from healing. It is also important to avoid air pressure changes (for example, using elevators, traveling in the mountains, or flying in airplanes) as these changes will tend to worsen symptoms.

### **Coping with dizziness**

You may find that a number of modifications in your daily activities will be necessary so that you can cope with your dizziness. For example, it may be helpful to avoid the circling motions involved in car travel on cloverleaf approaches to freeways or in multi-storied parking structures. Or, you may need to have someone shop for you for a while if going up and down supermarket aisles tends to increase your symptoms.

Your condition may make you *visually dependent*. Because of this, you should take special precautions in situations where clear, normal vision is not available to you. For example, avoid trying to walk through dark rooms and hallways; keep lights or night-lights on at all times. Don't drive your car at night or during stormy weather when visibility is poor. And beware of carrying large objects that obstruct your view.

Or, you may find that you are more *proprioception dependent*. That is, your balance and movement are highly dependent on sensations received from your feet, ankles, and legs. Because of this, you should take special precautions in situations where your support surface (what you are standing or walking on) is altered. For example, use great care when walking on soft, deep rugs, loose gravel, highly polished floors, and other uneven surfaces. Make sure your hallways at home are uncluttered and free of obstructions, and toss out all loose throw rugs. Most important, do not place yourself in a situation where you might lose your balance and be at risk for a fall and serious injury; stay off chairs, stools, ladders, roofs, etc. If your balance continues to be a serious problem, you may need to consider using canes or a walker for added safety.

At times you may find it difficult to concentrate or to remember things. You may also notice difficulty with reading, writing, or even speech. People with vestibular disorders commonly experience these symptoms. As the condition is brought under control, symptoms may be expected to improve.

You may feel frustrated, depressed, or even be accused of being "crazy" because, even when you do not feel well, you look fine to others. Explain to friends and family that you need their patience and understanding while you learn to

cope with the symptoms brought on by persistent dizziness.

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