Otitis Media: Fluid in the Middle Ear

1. In the normal ear, air is on either side of the ear drum and the ear drum vibrates easily. Any fluid in the middle ear drains away through the Eustachian tube.

2. The Eustachian tube may swell closed due to colds or allergies. Then fluid accumulates in the middle ear. The fluid reduces the ability of the ear drum to vibrate, which may reduce hearing.

3. If the fluid becomes infected, further swelling may occur, putting the fluid under pressure that bulges out the ear drum. This causes pain and further reduces the ability of the ear drum to vibrate.

4. After the infection is over (or if the fluid never became infected), the fluid is gradually absorbed. External air pressure pushes the ear drum inward ("retracted"), which can reduce hearing but is usually not painful.

5. When swelling of the Eustachian tube goes down, air can get into the middle ear again. This restores the balance of air pressure on either side of the ear drum and it can vibrate easily.

Otitis Media with Effusion

Middle Ear Fluid

Normal Ear

Acute Otitis Media

Retracted ear drum

Clear fluid

Bulging ear drum

Infected fluid

Absorption of air and fluid

Fluid in middle ear

Eustachian tube blocked

Nose

Ear drum

Middle ear

Eustachian tube

Inner ear

Middle ear bones

Effected Middle Ear