EARDRUM VENTILATION TUBES
(VENT TUBES, GROMMETS)

Eardrum vent tubes are a very common surgical technique employed worldwide, especially in children with middle ear effusions. Vent tubes have several purposes. A large number of patterns are available to cope with varying roles.

Ventilation tube models: Horses for courses.

The main function is to permit air entry into the middle ear. The ear is similar to a watch, with the drum on one side, small mechanisms behind, then the coil of the cochlea deeper in; the mechanisms vibrate in mid air for optimal function. The ear is normally aerated via the Eustachian tube from the rear of the nose. If the tube fails, the middle ear fills with fluid and the mechanisms malfunction unless tubes inserted through the eardrum are used to bypass the Eustachian problems.

Tubes also drain fluid from the ear. Normally the tubes are dry, but in acute infections they prevent or relieve pain from fluid building up under pressure; however, this is not their normal function.

Thirdly, the tubes may be used to minimise further middle ear damage. Drum retraction/collapse occurs if the eardrum is under chronic tension; deafness or other serious middle ear problems follow. Eliminating the pressure differential helps to stop or delay these changes.
Characteristics:

A large number of [vent tube models](#) are commercially available, the designs being developed to adapt to varying requirements. Most have a "waistline", designed to temporarily impede extrusion.

Larger tubes generally last longer and are used in more chronic situations. Conversely, ventilation for short term purposes, e.g. aircraft travel, employs mini-tubes for easier insertion and minimal drum damage.

“Standard” tubes last about 12 months and are those routinely used in children.

Other considerations are the thickness of the fluid in the ear or the presence of infection (this ejects smaller tubes).

All tubes are intended to extrude in time. The tubes do not cure problems; they merely stabilise the ear during recovery from the cause of the problems.

Treatment:

The tubes are inserted in the lower drum under topical, local or general anaesthesia. Topical preparations are usually used for adults, general anaesthetic for children, who are less tolerant of the insertion manoeuvres. In adults, the insertion is generally a brief office procedure causing little discomfort.

Complications:

Vent tubes maintain a hole in the eardrum; this exposes the susceptible middle ear to infection borne in by soiled water that penetrates deeply into the external canal, and thence through the grommet. This should be prevented by earplugs or other measures. With time, the tubes may develop reactions around them, causing continual discharge until treatment or tube removal. Drum damage is common, usually minimal weakening or scarring of the drum. However, tubes left in the drum longer than 24 months carry a risk of permanent perforation of the drum; this should be avoided by removal at this time. Other problems include blockage, then effusion reformation, and occasional dislodgement of the tube into the middle ear, behind an intact drum. The latter tend not to cause problems and may be left in the ear.

More information

[Failure of the Eustachian Tube](#)