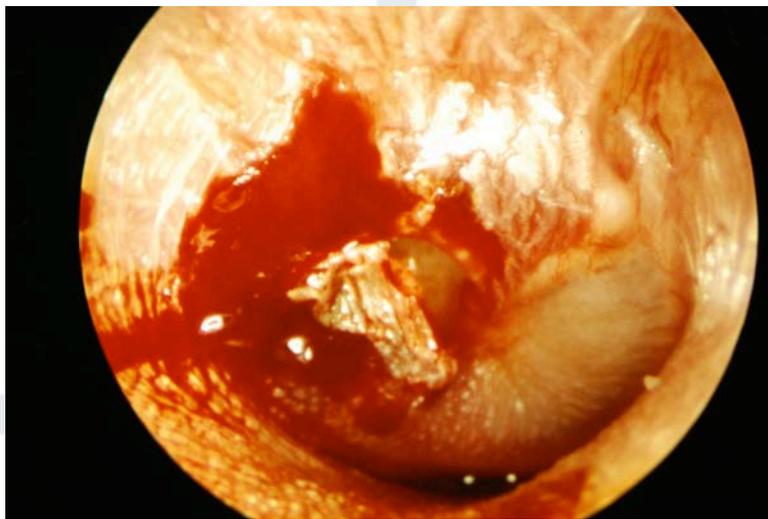


EAR TRAUMA

Trauma to the ear ([Ear Trauma](#)) is extremely common, presenting from a variety of sources and inflicting a range of damage patterns, many not readily apparent. Whilst lacerations of the pinna or penetrating injuries of the ear canal may be overt and painful, thus readily appreciated, many forms of damage are subtle, gradual, and more difficult to overcome. Each component of the ear is susceptible in its own way, but also has its own defences.



Ear Trauma: Pain and deafness; best treated promptly.

Pinna

The skin and cartilage of the pinna are readily traumatised, being fully exposed. Immediate repair steps are the norm, as the damage is immediately apparent. The blood supply of this tissue aids recovery. The pinna is often pink or red in appearance, reflecting the lavish vascularity of the site which has evolved to promote rapid healing of the exposed skin, and which also reduces the risk of frostbite.

Two aspects of trauma warrant mention. Crushing or rubbing injuries of the pinna may cause a blood clot between the ear cartilage and the skin (haematoma auris). If not treated promptly by removing the clot, this results in scarring, thickening and distortion – the classic “**cauliflower ear**” common in footballers and boxers.

Secondly, an injury, even slight, may become infected, causing angry swelling, cartilage infection (**perichondritis**) and subsequent gross disfiguration of the appearance may result. Treatment should be prompt.

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Other Locations

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External Canal

Being relatively hidden within the skull, the external canal is less prone to damage, but this remains common. The deeper location, and the curvature of the canal, renders skin damage less common. The canal becomes more sensitive as the eardrum is approached. The canal has very thin skin that is easily scratched or torn during cleaning attempts or penetrating injury. Fortunately damage is usually slight. Uncommonly, a blow to the jaw may cause the jaw joint to crush the canal. Other damage may be incurred by insect intrusions into the canal or efforts to remove the intruder.

Unhappily, rubbing and scratching at the entrance is a very common habit, causing thickened dry scaling, redness and infection (neurodermatitis). Although readily treated, the habit must stop for a permanent cure.

Eardrum

The drum is a relatively fragile membrane, defended by its depth in the canal and its hypersensitivity to touch. Damage is inflicted by penetrating injury, or compression damage. Slapping injuries cause rents to the ear. Blows to the ear in water sports rupture the drum by compression of a "cylinder" of water down the ear that acts as a piston to rupture the membrane. Blast injury acts similarly by implosion of the drum. Sudden increased air/water pressure (barotrauma) may bruise the drum. Most drum injuries heal spontaneously, but infection reduces this likelihood.

Ossicular chain

Chain disruption by penetrating injuries is less common, but incurs severe deafness that will respond only to surgery. Concurrent damage to the inner ear is a major concern in these cases, being potentially irreversible. Skull fractures are a frequent cause of chain damage (as below).

Inner Ear

The cochlear may be damaged by excessive noise, compressive blast, blows to the ossicular chain, or by major skull damage. Prolonged noise exposure at levels above 85 db for longer than 3-4 minutes will cause progressive losses that are permanent. Blast/blows may cause more dramatic immediate losses, but some recover spontaneously to a degree.

Skull Fractures

Severe head injury may fracture the skull, causing indirect ear damage of two types. Blows to the side of the head cause longitudinal fractures that pass through the middle and external ear, causing disruption of the drum and chain. Severe frontal blows cause transverse fractures of the skull, more often fatal. These fractures may pass through the inner ear itself, destroying both hearing and balance.

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Both forms may damage the facial nerve as it passes through the ear, causing facial paralysis that requires urgent repair to avoid permanent damage.

VIIIth Nerve

Lastly, severe concussive head trauma may avulse the auditory nerve itself, causing permanent deafness. Other trauma to the nerve may follow surgery for tumours in this area.

More information

- [Trauma](#)



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