



Faculty of Medicine, Dentistry & Health Sciences

# Melbourne Audiology & Speech Pathology Clinic



## Acoustic Shock Information Sheet

### WHAT IS ACOUSTIC SHOCK?

Acoustic shock disorder is an involuntary trauma response to a sudden, brief and unexpected loud sound, causing a consistent pattern of symptoms. The symptoms can be either immediate, or delayed, and can vary between individuals. Exposure to the unexpected loud noise is often traumatic and stressful for the individual. The term acoustic shock disorder (ASD) has been used if symptoms persist.

### SYMPTOMS

- a startle reaction, which usually occurs immediately after exposure to a sudden, loud sound.
- a feeling of pain or fullness in the ear
- tinnitus, which is the awareness of noises in the ears or head
- increased sensitivity to sounds (hyperacusis), or a fear of loud sounds (phonophobia)
- neck and shoulder pain, headaches.
- a complaint of muffled or distorted hearing, however there is no characteristic pattern of hearing loss.
- mild vertigo and nausea.
- severe ASD symptoms can lead to Post Traumatic Stress Disorder.

These symptoms can reduce over time, or persist indefinitely. If symptoms persist, a range of emotional reactions including trauma, anxiety and depression can develop. The most persistent symptoms tend to be a dislike of loud noises, and a blocked feeling in the ear.

## HOW DOES IT HAPPEN?

It is thought that exposure to a loud sound causes excessive contraction of the middle ear muscles (stapedius and tensor tympani). The stapedial reflex occurs in response to a loud sound, whereas the tensor tympani response is a startle reflex and protective mechanism. This is known as tonic tensor tympani syndrome, where the tensor tympani muscle is constantly active and is thought to be the cause of long term acoustic shock symptoms.

## WHO IS MORE SUSCEPTIBLE TO ACOUSTIC SHOCK?

Call centre staff are often susceptible to acoustic shock, due to the volume of calls they handle throughout a working day, in addition to the proximity of the headset to the ear. However, exposure to a sudden, unexpected loud sound can occur to anyone. Repeated exposure to acoustic shock can lead to more severe symptoms. People who are stressed may also have heightened reactions. Acoustic shock protection devices can provide protection for call centre workers by limiting the volume without impacting the intelligibility of speech.

## HOW CAN AN AUDIOLOGIST HELP?

A detailed history and hearing assessment are necessary to help with the diagnosis and management of acoustic shock. To help provide reassurance, we give an explanation of the mechanism of ASD and how this may explain the symptoms. Symptoms of acoustic shock can be helped and we provide management of tinnitus, hyperacusis and hearing rehabilitation if required.

After an acoustic shock incident, there may be a dislike or fear of loud sounds, often due to pain or discomfort experienced by the incident. Although this is normal, it is important to reintroduce everyday sounds as soon as possible after the incident. It is not necessary to wear hearing protection for everyday life, however we can provide advice about hearing protection for noisy activities.

If symptoms persist, referral to a Neurologist or ENT specialist is recommended, however symptoms can be slow to recover once they are well-established. If anxiety or other reactions persist, it may be worthwhile talking to someone about your symptoms. A counsellor or psychologist may be able to talk with you and help identify factors which may be influencing your reactions to loud sounds. They may also be able to help you develop coping strategies.

## CONTACT US

Ground Floor  
550 Swanston Street  
Carlton, Victoria 3053  
Australia

 +61 3 9035-5333

 +61 3 9347-1535

 [aud-reception@unimelb.edu.au](mailto:aud-reception@unimelb.edu.au)

 [umac.org.au](http://umac.org.au)

