The acoustic reflex (also known as the stapedius reflex, middle-ear-muscles (MEM) reflex, attenuation reflex, or auditory reflex) is an involuntary muscle contraction that occurs in the middle ear in response to high-intensity sound stimuli or when the person starts to vocalize.

When presented with a high-intensity sound stimulus, the stapedius and tensor tympani muscles of the ossicles contract.

The stapedius stiffens the ossicular chain by pulling the stapes (stirrup) of the middle ear away from the oval window of the cochlea and the tensor tympani muscle stiffens the ossicular chain by loading the tympanic membrane when it pulls the malleus (hammer) in toward the middle ear. The reflex decreases the transmission of vibrational energy to the cochlea, where it is converted into electrical impulses to be processed by the brain.