

## What makes the ADEL earbud different?

*The ADEL™ technology features a second eardrum that absorbs the harmful pneumatic pressures produced by all other earbuds. Now lower volumes sound louder and better. We proved this with tests at Vanderbilt University Medical Center. The speaker and the eardrum work as nature intended so you experience a natural sound for the first time.*

## What is pneumatic pressure?

*When you listen to music at a concert only the sound pressure reaches your eardrum. When you seal your ear canal with an earbud or hearing aid speaker, pneumatic pressures stiffens the air. It is pneumatic pressure that can inflate your tires not sound pressures. Pneumatic pressures stiffen the air in your ear canal so that the speaker motion overpowers the eardrum. The eardrum responds with a self protecting reflex - the stapedius reflex - that damps the volume. When you turn up the volume to overcome the damping the eardrum just damps more sound. Our ADEL™ second eardrum takes the pounding so lower volumes sound louder and better.*

## Why can't I just turn down the volume on my regular earbuds?

*When Stephen Ambrose returned to the lab to develop the next generation in-ear monitor he made a discovery. He discovered that when the ear canal is sealed with an earbud or hearing aid, acoustic pressures convert to amplified pneumatic pressure. Unlike acoustic pressure, pneumatic pressure causes motion, specifically motion of the eardrum. The eardrum is then forced to re-actively move with amplitude that is a thousand times more than normal causing muscles around the earldom to reflexively tighten the eardrum and damp the sound. Volume must be turned up to overcome this damping. The more the volume is increased the more the eardrum tightens. The solution was to build a tiny membrane that absorbs the pounding and acts like an auxiliary eardrum. Now the eardrum relaxes & listens. Volumes can now sound just as loud but are actually at 1/10 the power. We were invited to present our results to the International Acoustic Congress In Montreal. We proved our theories with the help of Vanderbilt University Medical Center.*

## What is an in-ear monitor?

*As a teenager in the 60's Stephen Ambrose was recording in a studio next door to Johnny Cash and was so impressed with Cash's sound he decided to try to re-create it - at home. By modifying swimmer's earplugs with tiny speakers and clay he had the beginnings of his in-ear monitor. This technology represented the first time that a high fidelity sound was delivered to a sealed ear canal. After the design was perfected Stephen toured with many performers such as Stevie Wonder. In ear monitors replaced huge stage monitors (speakers) that would blast the singer's voice back at them. With in-ear monitors, performers hear their own voice over the crowd or echoes and also protect their ears in the case of rock and roll music. While In ear monitors protect musicians hearing today's earbud makers perverted that design.*

## Can ADEL™ restore hearing?

*We have been able to restore hearing function to nerve dead ears. While our control earbuds use a passive form of ADEL™, our active or inflatable ADEL™ effectively applies a "Trans Cranial Conduction." This is a medical breakthrough that has the potential to be life changing for millions of people. This medical benefit is something that our ADEL™ earbuds can deliver.*