

Royal Academy of Music Case Study

Hearing and the Sound of Performance

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The Royal Academy of Music needed to comply with the Control of Noise at Work Regulations 2005. The UK entertainment industry was given extra time to comply. In 2007 a collaboration between Royal Academy of Music and London South Bank University was instigated to ensure compliance with the regulations. Over the past 15 years an educational awareness and hearing health surveillance programme has helped five thousand music students understand the risks and mitigation measures now available for musical performance.

The programme starts with a one hour education seminar on hearing health specifically tailored to music instrument groups. This is followed by health surveillance using an automated screening audiometer, an otoscope examination, and a short questionnaire. Each student is then given a pair of musician earplugs whilst their results are explained. At the end of the course, 3.5 years later, a sample of 10% of the student cohort was retested to establish the effectiveness of the programme. The result of the programme is that thousands of students were made aware of the risks of excessive music exposure and can take appropriate preventative measures to mitigate the risk and thus maximise and prolong their prospective careers.

In terms of hearing assessment, it was found that musicians have very good hearing acuity, when measured by traditional audiometry, with half of the students actually having hearing gain rather than hearing loss based on ISO 1999:2013 criteria. The reason was that audiometry is essentially a listening test, Bekesy was used, and musicians are very good at listening. In 2021 a pilot programme was launched using otoacoustic emissions (OAEs), an objective test that measures the function of the structures in the inner ear. These structures are the first to be affected by exposure to sound, before measurable hearing loss occurs. The study ran for the first time using Hearing Coach software and Path Medical instrumentation. Initial results indicated that OAEs do identify hearing damage at the earliest possible stage, and thus are a useful additional tool in prevention of serious hearing loss.

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