

## **NOISE EXPOSURE AMONGST PLASTER ROOM WORKERS – A COMPARATIVE STUDY**

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**Introduction:** Excessive levels or prolonged exposure to noise in occupational settings is responsible for a significant proportion of hearing loss. Power tools are a recognised cause for occupational noise exposure and the Health and Safety Executive (HSE) places limits on both peak and mean noise exposure. The plaster room is typically a noisy environment, due to use of plaster saws.

**Aims:** The purpose of this study was to compare the amount of potentially harmful noise produced when using a traditional plaster saw compared to a novel plaster cutting shear (Casterpillar) tool.

**Methods:** Noise (dB) was measured using a sound level meter placed at the operator's head position whilst cutting standardised casts made from either fibreglass or plaster of Paris (POP) cast using both a traditional plaster saw and the Casterpillar device. Mean daily exposure and peak noise levels, assuming 20 minutes of use per day, were calculated.

**Results:** Mean noise levels across all hearing frequencies were significantly ( $p < 0.001$ ) lower whilst using Casterpillar (70.1dB, SD 9.4) compared to the traditional tool (83.8dB, SD 12.3). Neither tool exceeded the peak noise level determined by the HSE, however the plaster saw exceeded the lower limit set by the HSE of 80dB when compared with the Casterpillar (82.6dB vs 71.0dB).

**Conclusion:** The Casterpillar produces significantly lower noise exposure when compared to a traditional plaster saw. Use of a traditional plaster saw produces noise exposure requiring hearing protection to be made available to practitioners. Further study is required to determine the mean usage time of plaster saws by plaster room technicians.