Temporary threshold shifts (TTSs) in 11 healthy subjects, resulting from exposure to continuous noise, whole body vibration, and combinations of these are reported. Three repetitive 16-minute exposures to A-weighted continuous white noise at levels of 85 and 98 dB, and to the sinusoidal r.m.s. of acceleration vibration at frequencies of 5 Hz (2.12 m/s²) and 10 Hz (2.65 m/s²) were used (ref. ISO 2631). When the noise exposures were combined with both levels of vibration there was a more noticeable increase in TTS at 4 kHz than after exposures to either noise or vibration alone. Of the combinations tested, the 85 dB(A) noise level and 5 Hz vibration frequency produced the highest relative mean increase in hearing threshold. A preliminary physiological mechanism is put forward to provide an explanation for these findings.