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Hand-arm Vibration Exposure in Drummers

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Exposure to hand-arm vibration (HAV) is associated with the development of carpal tunnel syndrome (CTS), one of the most frequently reported playing-related musculoskeletal disorders (PRMDs) in drummers. A previous study reported moderate levels of HAV exposure for short durations of drumming (i.e., 3 minutes), but studies of HAV exposure under more authentic playing conditions are needed. This study examined HAV exposure in drummers while playing a set of three songs of their choosing. Study participants played one set of three songs with a vibration monitor placed on the back of one hand, then repeated the same set with the monitor placed on the other hand. Data from the set were extrapolated using the participants' self-reported typical daily playing time to calculate a daily vibration exposure equivalent value [i.e., A(8)] according to industrial standards. The A(8) values were then compared to the American Conference of Governmental Industrial Hygienists action limit (AL: 2.5 m/s²) and threshold limit value (TLV: 5.0 m/s²) for HAV exposure during occupational tasks. Twelve adult male drummers registered an average A(8) of 8.5 m/s² in the left hand and 10.1 m/s² in the right hand (average set duration: 11.5 minutes). All 12 participants' A(8) values exceeded the AL in at least one hand, and 11 of them exceeded it in both hands. Nine participants also exceeded the TLV in both hands. Drummers' HAV exposure levels are likely to contribute to the development of CTS and other PRMDs in this group. Further analyses incorporating even more realistic playing scenarios (i.e., live concert performances) across multiple musical genres and varying drummer skill levels would help to further advance understanding of HAV exposure during drumming. This may enable the drumming community to develop strategies to reduce the risk of PRMDs associated with HAV exposure.