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## Ending Structures After 5 Weeks of Vibration Exposure

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on syndrome (HAVS) is an occupational disease that causes debilitating numbness and vasospasm of the fingers. The mode of injury and which also inhibits preventative measures. Previous work has shown that one bout of 12 min vibration with a riveting hammer causes injury to rat tail. However the effects on mechanosensory receptors of the skin have not been characterized. We aimed to study the effects of vibration on the endings on the skin by examining changes after 5 weeks of vibration exposure.

Wistar-Kyoto (WKY) rats were divided into a tail-vibration group (n=8) and a sham-vibrated control group (n=8). The vibration group received 12 min of vibration exposure per day, 5 days per week for a total of 5 weeks. The Control group received the same treatment in terms of restraint and handling but were not subjected to tail vibrations. When treatments were completed, the rats were euthanized and perfusion fixed with buffered formalin. The skin was removed, decalcified and frozen for cryostat sections. Lanceolate mechanosensory nerve endings surrounding hairs in the skin were stained by PGP9.5 and examined by fluorescence microscopy.

Results showed that lanceolate nerve ending complexes appeared largely unchanged in number and organization between the vibrated and control groups. These findings may suggest that altered sensory perception is not a result of damage to sensory nerve endings at the skin level, but rather changes in signal transduction in the peripheral or central nervous system. Alternatively, since PGP9.5 also stains Schwann cells, the data may represent preserved Schwann cell processes with or without intact nerve endings. Future experiments will be conducted to differentiate between Schwann cell processes and nerve endings of the lanceolate complex. This will determine whether vibration causes injury at the cutaneous mechanosensory level and targeting preventative or treatment therapies for HAVS.