LISA RÄDMAN is a registered physiotherapist who has worked in adult in- and outpatient neurological rehabilitation since 2006. She earned her physiotherapy degree from the Karolinska Institute in 2006.

Her interest in research drove her to start her journey with a master’s degree in clinical medical science from the Karolinska Institute. In late 2011, she registered as a doctoral student at the School of Health and Medical Sciences at Örebro University. Her research involves self-reported symptoms and neurosensory function in relation to previous electrical accidents.

Professionals working in electrical fields are at risk for accidental exposure to electricity on a daily basis. Electrical accidents can cause long-term sequelae manifesting as neurological symptoms, including in the peripheral nervous system. The overall aim of this licentiate thesis was to describe the occurrence of self-reported and neurosensory symptoms after electrical accidents. A retrospective survey that included 523 Swedish male electricians was conducted. Electricians reporting persistent symptoms were invited to a clinical examination that included quantitative sensory testing (QST); 23 electricians participated. The most commonly self-reported symptoms associated with electrical accidents were pain, reduced sensation and reduced muscle function. For a small percentage, these symptoms were persistent. Reduced neurosensory function with regard to thermal perception was determined using QST and functional testing and was particularly evident in the thermal perception tests; roughly half of the group exhibited abnormally reduced clinical warmth and cold perception thresholds and tactile gnosis test values, the latter of which were all below normal except for those of two electricians. The findings also indicate that electricians accidentally exposed to high voltage (HV) frequently report more symptoms than do electricians exposed to low voltage (LV). Deficiencies were found in the preventative efforts and reporting routines used for potential electrical accidents. In summary, the main results of this licentiate thesis show that sensory symptoms can be persistent, especially after an HV accident, and that these self-reported symptoms can be manifested as injuries on the small nerve fibres. The results of the present study can provide methods to be used for follow-up testing in clinical practise.

Licentiate thesis

Self-reported symptoms and neurosensory function after electrical accidents
a survey among Swedish male electricians

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Medical Science with a specialisation in Medicine