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Extreme Weather Events and Their Implications for Occupations

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LUND UNIVERSITY

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37) Extreme weather events and their implications for occupations.

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Introduction: Presumed effects of global warming are increased frequencies of extreme weather events such as cold spells in the winter and heat waves in the summer season. Extreme cold and heat affect conditions for outdoor work. In order to avoid adverse effects on health and performance conditions of work need to be monitored and controlled. Internationally recognized methods (ISO-standards) are available for assessment of the thermal environment.

Methods: Based on actual measurements of the thermal climate and estimation of work intensity and work clothing the thermal stress can be quantified. Heat stress can be assessed by WBGT (Wet Bulb Globe Temperature; ISO 7243) and PHS (Predicted heat Strain; ISO 7933). Both methods measure relevant climatic factors and provide recommendations for limit values in terms of time when heat stress becomes imminent and unacceptable. IREQ (ISO 11079) predicts required protection (by clothing) in a cold environment. When clothing cannot provide it a time limit is calculated for safe exposure.

Results and discussion: Limit values can be applied to assess the physiological strain and possible limitations in for example work time. Methods can also be used for simulations and predictions of the impact of possible weather scenarios. Useful information can be gained for precautionary planning and subsequent organization of work under the expected conditions. Methods allow calculations of the effects on performance and can be used for an estimation of possible productivity losses.

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