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ペルチェ素子による体冷却に伴う快適性に関する研究：精神作業への影響について

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Research on comfort associated with body cooling using Peltier device: Effects on psychological capacity

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In this study, we conducted local cooling of the posterior neck using Peltier devices to investigate the effects on concentration and cognitive function in terms of temperature sensation, thermal comfort, fatigue, confusion, mean skin temperature, and auricular temperature during sustained mental tasks. The experiment compared two conditions, with and without cooling, in an environment with temperatures of 25°C and 35°C and a humidity of 60% RH, using a group of seven male university students as participants. The results suggested that local cooling did not affect body temperature. Additionally, a reduction in reaction time was observed under the 25°C condition. On the other hand, subjective fatigue and confusion levels indicated a tendency to alleviate fatigue under the 35°C

condition. These results suggest that localized cooling of the posterior neck using a Peltier device might be effective in enhancing mental task performance.

Key words

Peltier device, body cooling, thermal comfort, mental performance

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