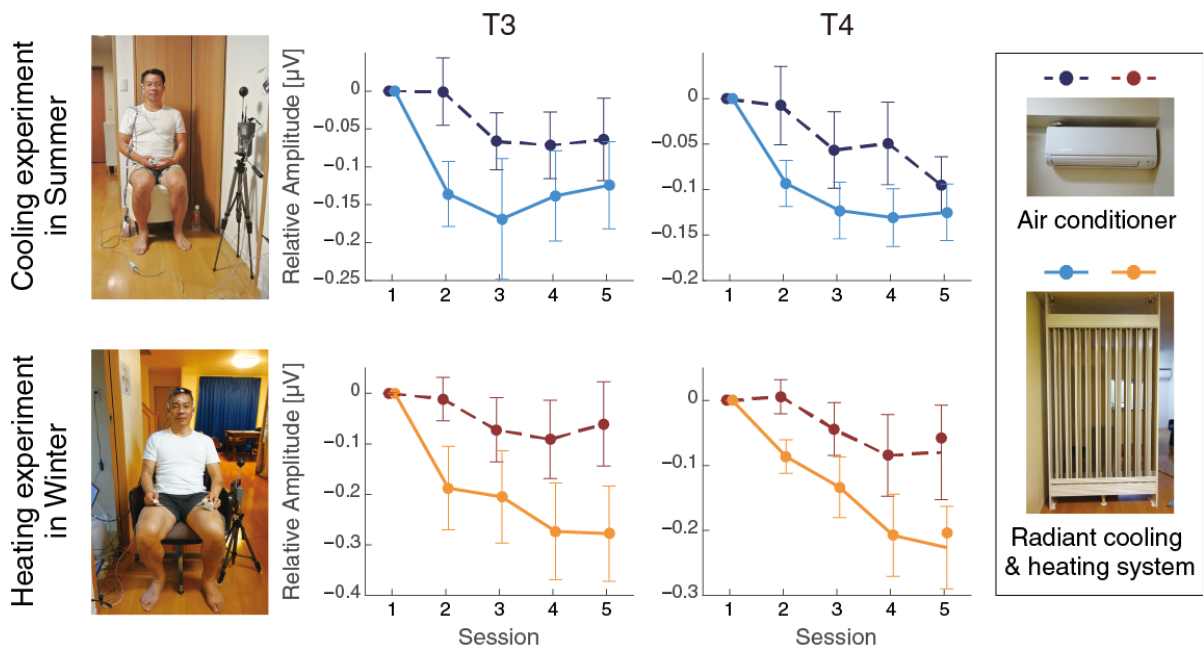


PRESS RELEASE (2017/10/11)

New evidence of brain activity in calm thermal indoor environments

Indoor environmental comfort has previously been quantified based on the subjective assessment of thermal physical parameters, such as temperature, humidity, and airflow velocity. However, the relationship of these parameters to brain activity remains poorly understood. To determine the effect of airflow on brain activity, we recorded and analysed electroencephalograms (EEG) of participants in a living environment under different airflow conditions. Before the recording, the room was set to a standardised air temperature and humidity. Cooling and heating experiments were conducted in summer and winter, respectively. A frequency analysis of the EEGs revealed that gamma and beta activities showed lower amplitudes under conditions without airflow than with airflow, regardless of the season. Our results reveal new neurophysiological markers of the response to airflow sensation. Further, based on the literature linking gamma and beta waves to less anxious states in calm environments, we suggest that airflow may alter the feelings of the participants.

For more information about this research, see **Tsuyoshi Okamoto *et al.*: Physiological activity in calm thermal indoor environments. Scientific Reports 7, Article number: 11519 (2017). doi: 10.1038/s41598-017-11755-3**



The differential gamma amplitudes (mean ± SEM) from the first session of cooling experiment (upper panels) and heating experiment (lower panels). Gamma band amplitudes at temporal and parietal sites of radiant system had smaller relative changes than air condition in both experiments.

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