

Chemosensory perception, symptoms and autonomic responses during chemical exposure in multiple chemical sensitivity - DTU Orbit (08/11/2017)

Chemosensory perception, symptoms and autonomic responses during chemical exposure in multiple chemical sensitivity

Purpose: Multiple chemical sensitivity (MCS) is a prevalent medically unexplained symptom characterized by symptom reactions to everyday chemical exposure below hygienic thresholds. The aim of this study was to investigate the expressions of hyper-reactivity in MCS during whole-body exposure to low concentrations of the odorant *n*-butanol.

Methods: We exposed 18 participants with MCS and 18 non-ill controls to a low concentration of the odorant *n*-butanol using an exposure chamber. The first 10 min constituted blank exposure, after which the *n*-butanol concentration increased and reached a plateau at 11.5 mg/m³. **Results:** MCS participants, compared with controls, reported greater perceived odor intensities, more unpleasantness to the exposure and increasing symptoms over time. MCS participants also expressed higher pulse rate and lower pulse rate variability than controls did. No group differences were found for breathing rate or tonic electrodermal activity responses. **Conclusions:** We conclude that MCS sufferers differ from healthy controls in terms of autonomic responses, symptoms and chemosensory perception during chemical exposure.

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