Impact of air temperature, relative humidity, air movement and pollution on eye blinking

The effect of indoor air temperature, relative humidity, velocity and pollution on occupants’ eye blink frequency (BF) was examined. In total sixty subjects participated in eight 4 hour experiments without and with facially applied air movement under individual control of the subjects. Air movement of either polluted room air supplied isothermally or clean and cool air was used. Eye blinking video record for the last 15 min of each exposure were analysed. The increase of the room air temperature and relative humidity from 23 °C and 40% to 26 °C and 70% or to 28 °C and 70% decreased the BF. At temperature of 26 °C and relative humidity of 70% facially applied flow of polluted room air didn’t have significant impact on BF in comparison without air movement. The increase of BF due to decrease of temperature and humidity and increase of velocity may be compensated due to the increase in air cleanliness.

General information
State: Published
Organisations: Section for Indoor Environment, Department of Civil Engineering, Technical University of Denmark, Lublin University of Technology, Silesian University of Technology
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Publication date: 2011

Host publication information
Title of host publication: Proceedings of Indoor Air 2011
Keywords: Relative humidity, Eye blink frequency, Air movement, Pollution, Air temperature
URLs:
http://lifelong. engr. utexas. edu/2011/
Source: orbit
Source-ID: 317122
Research output: Research - peer-review › Article in proceedings – Annual report year: 2011