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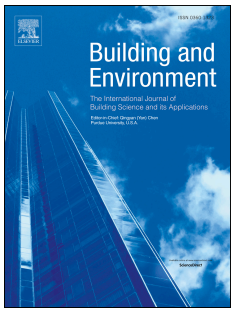

Field evaluation of the circadian stimulus potential of daylit and non-daylit spaces in dementia care facilities

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Field Evaluation of the Circadian Stimulus Potential of Daylit and Non-Daylit Spaces in Dementia Care Facilities

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Abstract

Lack of sufficient exposure to high-intensity light during the morning can negatively affect the health and well-being of residents in dementia care facilities. The objective of this study was to evaluate the circadian stimulus potential of daylight provided by windows in dementia care facilities in southern California. A mobile spectrometer cart was used to document eye-level light exposures in 9 daylit and 4 non-daylit spaces. A total of 579 spectrometer measurements, acquired over a period of 13 weeks, were analyzed in units of equivalent melanopic lux and compared to dose-response models and emerging threshold criteria for circadian lighting. Comparison between daylit and non-daylit spaces revealed significant benefits of daylit spaces in regard to circadian stimulus potential and circadian efficacy. This study is a first step in addressing the need to measure and evaluate light exposures in biologically-meaningful units to better-support the care of people living with dementia in long-term care facilities. Outcomes of the study contribute to a body of evidence that can be used to inform clinically significant decisions related to the current use and future design of dementia care facilities.