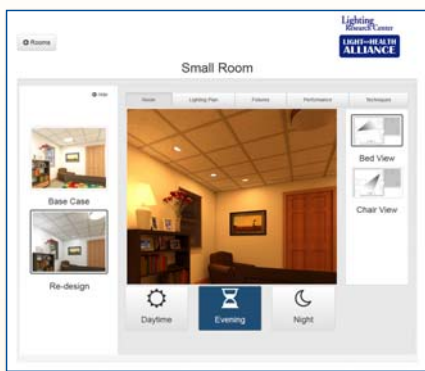


Lighting Patterns for Older Adults

Lighting can affect people via the visual, circadian and perceptual systems. In 2008, Figueiro proposed a 24-hour lighting scheme for older adults that included high circadian stimulation during the daytime, low circadian stimulation in the evening, good lighting for visibility, and nightlights that provided horizontal/vertical cues to improve postural control and stability.



Screen capture from web page showing redesign pattern for a small bedroom.

Older adults in long-term care facilities are often plagued by irregular sleep patterns. To help alleviate this problem, it is recommended that residents receive certain amounts of light at an appropriate spectral power distribution to better entrain their circadian systems. Residents in these facilities typically do not receive the amount and type of light necessary to keep their circadian systems entrained to a regular sleep-wake cycle. In the morning, it is recommended that residents receive a high circadian stimulus. To do this, higher light levels and light sources with shorter wavelengths are required. In the evening, residents should receive a lower circadian stimulus, necessitating lower light levels and light sources with longer wavelengths.

Sponsor

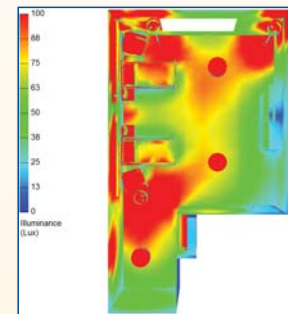
Light & Health Alliance



These renderings show examples of a redesigned, double bedroom using a 24-hour lighting scheme, daytime (left) and evening.

The LRC created a portfolio of lighting patterns to aid lighting designers and specifiers in selecting and placing luminaires to meet these requirements while supporting the vision and orientation needs of older adults. These patterns are available via an interactive website that allows users to view lighting patterns for various room types and sizes. Typical rooms include three sizes of resident

rooms, a dining/activity area, and a bathroom. Base cases, showing typical lighting, and new lighting designs are analyzed for circadian stimulus (CS). Rooms with drywall ceilings use flush mount and plug-in luminaires to achieve lighting effects appropriate for different times and tasks throughout the day and night. Grid ceiling redesigns utilize recessed, flush mount, and plug-in luminaires. Lighting designs, using color tuneable sources, are presented using lighting plans, renderings, and luminaire information.



Pseudocolor rendering showing illuminance (lux) levels for the evening mode for the double bedroom shown above.

Citation

Figueiro MG. A proposed 24 h lighting scheme for older adults. *Lighting Research & Technology*, 2008; 40(2):153-160. <http://lrt.sagepub.com/content/40/2/153.abstract>

