

A Good Night's Sleep

Henkel, G., (2003). Sleep disorders in LTC. *Caring for the ages*, 4, 1, 16-20.

A number of studies have looked at sleep disorders in LTC and other studies are ongoing. Researches have found that more than 50% of older people have sleep problems, ability to sleep decreases (although it is unclear how much the need for sleep changes with age), and feeling sleepy during the day is not normal for older adults. Some causes for sleep problems include use of certain medications (such as alcohol, central nervous system stimulants, beta-blockers, corticosteroids, decongestants, stimulating antidepressants, thyroid hormones and nicotine), health conditions and altered circadian rhythms (bringing wakefulness at night and sleepiness during the day).

One research study investigated the role of inadequate daytime light in disrupting nighttime sleep. Sixty-six residents with dementia residing in a San Diego-area skilled nursing facility were the subjects of the research. They wore actigraphs that recorded both sleep/wake activity and bright light exposure. They found that the residents spent an average of only 10.5 minutes per day in settings with over 1000 lux (the amount of light one would receive outside in the mid-day sun). They found that residents who were exposed to brighter light levels during the day had fewer nighttime awakenings.

Follow-up research tried to determine whether residents' circadian rhythms can be re-synchronized thereby further improving their nighttime sleep. Circadian rhythm refers to the body's natural time rhythms that recur every 24-hours. Actigraphs recorded the rhythm patterns to determine when the residents natural sleep rhythm was occurring. This research used light boxes for 18 days to expose residents to daily bright light found that either morning bright light or evening (depending on the direction the rhythm needed to be shifted) bright light seemed to merge sleep rhythms and gave more defined circadian rhythm readouts.

Implications for practice: if you have residents who seem to have their days and nights reversed, you might want to do some action research of your own experimenting with light therapy. Use of expensive equipment (such as actigraphs and light boxes) is not needed. A brightly lit location such as a patio room with plant lights might work fine. The "daily light time" could be breakfast on the patio or maybe incorporated into a working-with-plants activity time. The daily light time used in the above research ranged from 90 minutes to two hours per morning or evening and lasted 18 days.

To implement a study of this type choose eight or ten residents. Use half of them for your control group. The control group will not receive the "daily light time" intervention. To have useable data you will want to do a pre-assessment of all residents chosen. The assessment tool can be as simple as a check-off form with dates running down the page and selections such as woke once, woke twice, woke 3 times, awake 1 hr., awake <2 hrs, slept thru the night, to check off each night. You may want to run the pre-assessment for a week or so to get an idea of each resident's regular pattern. Then run the experiment for 18 days. The research group of residents will spend 90 minutes each

morning in the brightly lit environment. The control group of residents will spend their mornings as they normally have. Both groups' sleep patterns should be tracked each night. At the end of the 18 days you should be able to determine if the light therapy helped your research group have a better night's sleep.

We will be interested in your results if you decide to try some action research in your center. Just e-mail us how you set-up your experiment and what the outcome was.

Recently a small study, conducted by Mariana Figueiro at Rensselaer's Lighting Research Center, found that Alzheimer's patients slept better when exposed to 20 watts of blue LED lighting two hours before bedtime for 20 days. Blue LEDs (light-emitting diodes) were used because there is research that shows circadian rhythms are maximally affected by short wavelength light.

Exposing residents to blue light two hours each night for 20 days might be a bit more complicated but it may be worth a try for a good night's sleep.

(http://www.rpi.edu/web/Campus.News/oct_02/oct_07/alzheimers.html)