

Aging eyes linked to sleepless nights, new study shows

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A natural yellowing of the eye lens that absorbs blue light has been linked to sleep disorders in a group of test volunteers, according to a study in the September 1 issue of the journal *Sleep*. As this type of lens discoloration worsened with age, so did the risk of insomnia.

"The strong link between lens yellowing and age could help explain why sleep disorders become more frequent with increasing age," said Line Kessel, M.D., Ph.D., the study's lead author.

In the Danish study, 970 volunteers had their eyes examined by lens autofluorometry, a non-invasive method for determining how much blue light is transmitted into the [retina](#). Blue light is a portion of the visible-light spectrum that influences the normal sleep cycle by helping initiate the release of melatonin in the brain. [Melatonin](#) is a hormone that helps signal to the body when it is time to be sleepy or alert.

Volunteers were considered to have a sleep disorder if they confirmed that they "often suffer from [insomnia](#)" or if they purchased prescription sleeping pills within the last 12 months. Of those classified as having a sleep disturbance, 82.8 percent affirmed that they both suffered from insomnia and used sleep medication.

Using this data, researchers calculated an inverse relationship between blue light transmission and the risk of having sleep disturbances: the lower the blue light transmission into the retina due to a yellowing of the [eye lens](#), the greater the risk of sleep disturbances.

"The results showed that while age-related lens yellowing is of relatively little importance for visual function, it may be responsible for insomnia in the elderly," said Kessel, a senior scientist in the Department of Ophthalmology at Glostrup Hospital in Denmark.

Significantly higher rates of [sleep disorders](#) were reported by older participants, women, smokers and those with [diabetes mellitus](#). Previous studies have shown that the rate of lens aging is accelerated in smokers, patients with diabetes mellitus and those at high risk for ischemic heart diseases. The Danish researchers addressed these factors in their statistical analyses.

"The association between blue light lens transmission and [sleep disturbances](#) remained significant even after we corrected for age, sex, diabetes mellitus, smoking and the risk of ischemic heart disease," Kessel said.

She said another important factor to consider is that sleep quality has been shown to improve after cataract surgery. "The transmission of blue light currently cannot be improved by any other method than cataract surgery. I'm involved with another research project where we try non-invasively to remove the yellow color of the lens using a laser, but the method is not yet developed for clinical use," Kessel said.

In the meantime, Kessel said it seemed prudent to recommend that physicians reconsider the prescription of sleeping tablets in patients who have undergone cataract surgery.

Provided by American Academy of Sleep Medicine

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