

Migraine sufferers: More difficulty tuning out visual stimuli?

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When people feel the onset of a migraine headache, they may head to a dark, quiet room to rest. This instinct may be sound: A new study suggests that even without the headache, migraine sufferers may process visual cues better in an environment with few visual distractions.

In a study published in the April issue of *Investigative [Ophthalmology](#) & Visual Science* ("Visual Noise Selectively Degrades Vision in [Migraine](#)"), researchers from Scotland's Glasgow Caledonian University asked migraine sufferers to pick out a small disk of light amid visual noise, an effect similar to the black-and-white snow on an off-air television. Without the visual noise, people prone to migraine could identify the light disk about as well as the control group. When the noise was added, migraine sufferers ("migraineurs") performed significantly worse.

"Our visual environment is generally very busy and full of objects, many of which are important at some times but not at others. Normally, we can attend effortlessly to those items of interest and often do not even notice others," said lead researcher Doreen Wagner, Diplom-Ingenieur (FH) of Optometry, PhD student in Vision Science. "Migraineurs may be at a disadvantage when searching for details, especially in cluttered environments."

About a third of migraine sufferers experience neurological disturbances before a headache begins. These auras are frequently visual and can appear as shimmering lights or zig-zag patterns that move across the field of vision. The study showed that migraine sufferers with auras were

the most adversely affected by the addition of visual noise.

Wagner said a current theory about migraines is that nerve cells in the brain of migraineurs are excitable and when exposed to certain triggers, the increased excitability may cause whole clusters of nerve cells to become overactive, similar to a spasm, and bring on the headache. In this study, "We believe that the noise on the display overexcites the [nerve cells](#) in the brain of the migraineurs. This in turn makes it harder for a migraineur to see the disk."

Although Wagner noted that further research should examine the connections between the severity and frequency of the attacks and visual problems, she said the results may have practical applications for migraine sufferers today.

"It might be helpful to avoid such 'noisy' environments which may impair their performance, scenes overloaded with visual distracters, for example computer screens and learning tools which have a lot of visual information on them." she said.

Provided by Association for Research in Vision and Ophthalmology

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