

3-D movies: thrills and ills

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Young adults at higher risk for motion sickness than older viewers, study found.

(HealthDay) -- "Avatar," "Hugo" and other 3-D movies thrill many viewers, but also make some feel sick, a new study finds.

[Young adults](#) and those sitting close to the screen are more likely than older viewers to experience blurred vision, nausea and other [symptoms](#) while "immersed" in a 3-D [three-dimensional] film, the researchers found.

"3-D movies are only good as long as you're not feeling terrible," said study lead author Shun-Nan Yang, a senior scientist at Pacific University College of Optometry in Forest Grove, Ore.

Symptoms, which are brief and temporary, are related to visual disturbances and motion sickness. But they can be minimized -- at least if you're watching a 3-D movie at home -- by sitting farther back and gaining a wider viewing angle, Yang said.

Also, an eye doctor may help you resolve any vision issues, Yang added.

Hollywood produced many 3-D movies, which enhance the sense of [depth perception](#), in the 1950s, and even then they could make people queasy. As technology has advanced over the last decade or so, 3-D films have boomed in popularity, but the motion-picture industry has yet to quash the [motion-sickness](#) factor.

The new study, funded by the [technology company](#) Intel, is the latest to look at how 3-D affects people.

The researchers recruited 203 teens and adults to watch the 2009 family film "Cloudy With a Chance of Meatballs" on a 55-inch LCD television. Some watched it in regular 2-D; others viewed it in 3-D. Viewers were seated at different distances and viewing angles, and questioned about previous viewing symptoms, and any symptoms during or after seeing the film.

Twelve percent of the 2-D viewers reported an increase in symptoms of discomfort, compared with 20 percent of the 3-D viewers. Those who watched the 3-D version were likely to report more eye pain, pulling sensation in the eye, blurred vision, [double vision](#), dizziness and disorientation.

Viewers aged 24 to 34 were bothered more by the 3-D images than older viewers, the researchers found.

The most severe problems reported were headaches and nausea, Yang said. Symptoms could increase within 15 minutes after watching the film, he said, although the problems didn't last into the next day.

Watching movies in 3-D is visually challenging because the eyes must adjust to the fixed closeness of the screen and the seeming distance of

the 3-D images, he said. If you're in a movie theater, he said, you may experience fewer symptoms while watching 3-D than viewing the film at home.

Older viewers were less sickened by 3-D than younger viewers, possibly because they're less sensitive to visual stimulation or the deterioration of their eyes makes it easier to handle the near/far discrepancy, he said. Younger viewers reported more "immersion" in the 3-D movie.

Yang said it's a mystery why many [viewers](#) have visual or physical complaints after watching ordinary movie images on TV. Those people also said they suffered eye problems when they used computer monitors, he said.

If you're watching a 3-D movie at home, Yang said, you might avoid symptoms by changing where you sit to obtain a different viewing angle or adjusting the brightness of the screen or the lighting in the room. "When you sit closer, you are going to perceive the movie as more real, but you'll have more symptoms," he said.

One solution for children bothered by watching 3-D movies is to let them take off their 3-D glasses and simply watch the blurred movie, said eye doctor Dr. James Salz, a clinical professor of ophthalmology at the University of Southern California and spokesman for the American Academy of Ophthalmology.

He's tried that with his own grandchildren, ages 4 to 7. "They don't complain as they seem more comfortable," he said.

The study appears in the July issue of *Optometry and Vision Science*.

More information: For more about [vision problems](#), try the U.S. National Library of Medicine.

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