

NEWS

Cognition and behavior: Blinking measures social interest

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Toddlers with autism do not anticipate emotional moments in videos of social scenes, unlike controls, according to a study published 27 December in the *Proceedings of the National Academy of Sciences*. The study uses the rate of blinking as a measure of the children's interest in the video content¹.

A 2002 study first used **eye-tracking** technology to compare the gaze of individuals with autism with that of controls². This technology has since been used in many studies to determine which parts of a scene people pay attention to.

Where someone chooses to look is only an indirect measure of how interested they are in the content of a scene, however, so researchers have been seeking additional ways to assess this.

At the **2010 International Meeting for Autism Research**, researchers presented preliminary data showing that people **blink less frequently** when they look at something they find interesting.

In the new study, the same researchers expand on these findings by looking at the gaze and blink rate of 41 toddlers with autism and 52 typically developing children who watched a short video.

In the clip, two toddlers fight over whether the door of a toy car should be open or closed. Ten independent adults also viewed the video and classified the scenes in terms of their emotional content. They identified eight highly emotional scenes, such as when the toddlers seemed to be angry. The researchers also ranked the moments when the toddlers opened or shut the car door as conveying the most physical information.

Toddlers with autism and typically developing children blinked less frequently while watching the video compared with blank interval screens, the study found. Both groups also blinked most often

during moments that were not classified as important. These findings support the theory that people slow down their blink rate when they are looking at something they find engaging.

But toddlers with autism have different reactions to the content of the videos than controls do, the study found. Toddlers with autism blinked more during the emotional scenes than during the physical scenes, whereas typical children showed the opposite preference. This finding supports previous data showing that individuals with autism are **less attuned to social information** in images or videos, the researchers say.

They also looked at the average change in the blink rate at specific times before and after the highly emotional scenes. On average, typical toddlers blinked the least 66 milliseconds before the emotional moments, whereas the children with autism blinked the least 599 milliseconds afterward. This may be because the typical children are anticipating an emotional response using subtle cues, such as when a frown precedes a scream, the researchers say.

REFERENCES:

1. Shultz S. *et al. Proc. Natl. Acad. Sci. USA* **108**, 21270-21275 (2011) [PubMed](#)
2. Pelphrey K.A. *et al. J. Autism Dev. Disord.* **32**, 249-261 (2002) [PubMed](#)