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Why the world doesn't go dark when we blink: Researchers find our brain works as a 'steadicam' to keep our vision perfect

- When we blink, our eyeballs roll back in their sockets
- But they don't always return to the same spot when we reopen them
- This signals the brain to activate eye muscles to realign our vision
- These findings show how the brain constantly adapts to changes

By [CECILE BORKHATARIA FOR DAILYMAIL.COM](#)

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Blinking - everyone does it every few seconds, but why doesn't everything we see turn blurred or go dark every time we do?

Blinking does more than keep our eyes wet - it actually helps keep our vision steady.

Researchers have found that when we blink, our brain repositions our eyeballs to stay focused on what we're looking at.

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When we blink, our eyeballs roll back in their sockets and don't always return to the same spot when we reopen them.

But this misalignment signals the brain to activate eye muscles to realign our vision.

The study, published in the journal *Current Biology*, was conducted by a team of researchers based at UC Berkeley, Nanyang Technological University in Singapore, Dartmouth College and Université Paris Descartes.

Dr Gerrit Maus, an assistant professor of psychology at Nanyang Technological University and lead author of the study, said: 'Our eye muscles are quite sluggish and imprecise, so the brain needs to constantly adapt its motor signals to make sure our eyes are pointing where they're supposed to.'

'Our findings suggest that the brain gauges the difference in what we see before and after a blink, and commands the eye muscles to make the needed corrections.'

The researchers say that if this didn't happen, our vision would look shadowy and erratic every time we blink.

'We perceive coherence and not transient blindness because the brain connects the dots for us,' said study co-author David Whitney, a psychology professor at UC Berkeley.

Why do we blink our eyes every few seconds?

HOW THEY DID THE STUDY

In a study to find out how the brain realigns our vision, researchers:

- 12 people participated in the study
- They sat in a dark room staring at a dot on a screen
- Infrared cameras tracked their blinking and eye movements in real time
- Every time they blinked, the dot was moved one centimeter to the right
- Although participants didn't notice the small shift, the brain's oculomotor system registered the movement and learned to reposition the line of vision on the dot.
- After 30 dot movements, participants' eyes adjusted during each blink and shifted automatically to the spot where they predicted the dot to be



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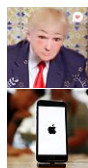
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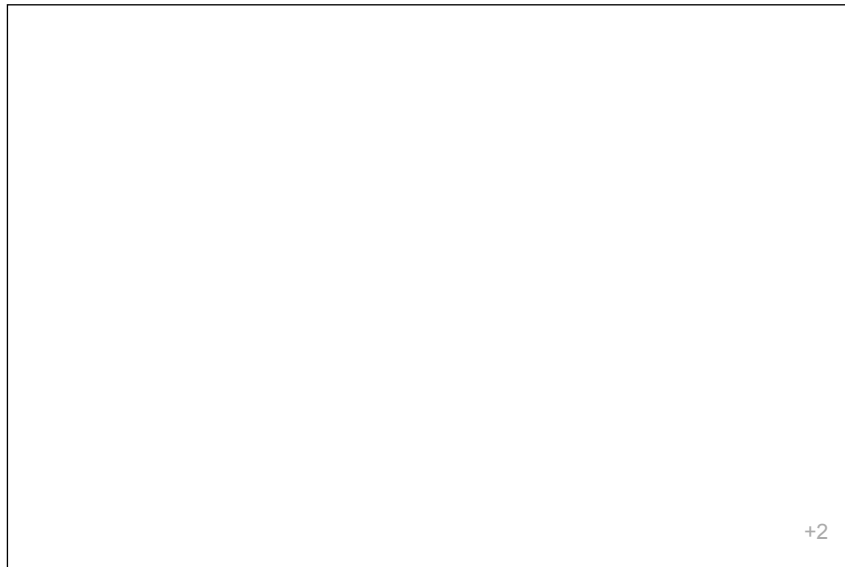
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'Our brains do a lot of prediction to compensate for how we move around in the world,' said co-author Patrick Cavanagh, a professor of psychological and brain sciences at Dartmouth College.

'It's like a steadicam of the mind,' he said.



12 people participated in the study where they sat in a dark room for long periods of time staring at a dot on a screen and infrared cameras tracked their eye movements and blinks

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Every time they blinked, the dot was moved one centimeter to the right.

Although participants didn't notice the small shift, the brain's oculomotor system registered the movement and learned to reposition the line of vision on the dot.

After 30 dot movements, participants' eyes adjusted during each blink and shifted automatically to the spot where they predicted the dot to be.

'Even though participants did not consciously register that the dot had moved, their brains did, and adjusted with the corrective eye movement,' Dr Maus said.

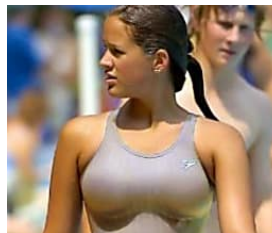
'These findings add to our understanding of how the brain constantly adapts to changes, commanding our muscles to correct for errors in our bodies' own hardware.'

"Our brains do a lot of prediction to compensate for how we move around in the world. It's like a steadicam of the mind - Dr David Whitney, study co-author and psychology professor at UC Berkeley"

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