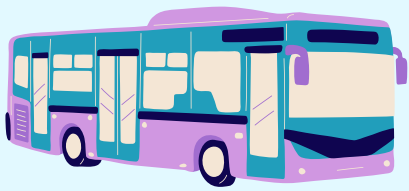


Hallucinations from flickering lights: what happens in our brain?



A new study shows **how** rhythmic light flashes can cause hallucinations in our brain: they produce so-called '**standing waves**' of brain activity.



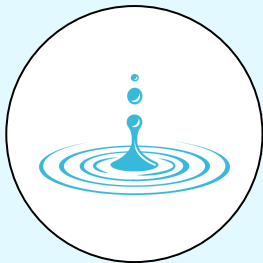
You're sitting in the bus or train and close your eyes. Sunlight flickering through the trees suddenly fills your mind with **kaleidoscopic hallucinatory patterns**.


Mathematicians hypothesized that these hallucinatory patterns could be **standing waves** of neural activity in the **visual cortex**.

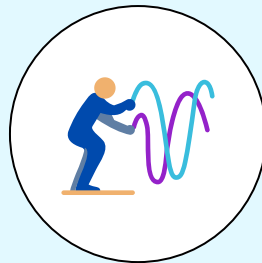


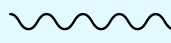
Traveling wave versus standing wave

Traveling waves can be compared to a drop falling into water and spreading out. An example of standing waves is when two people hold each end of a skipping rope and shake it synchronously.



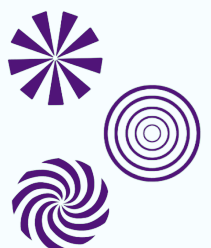

Traveling wave




Standing wave

But is there evidence that standing waves can form in our brain?

To investigate standing waves in the brain, researchers exposed **mice** to flashing lights. Fluorescent labelling of the active cells allowed tracking of **brain activity**. While each flash of light set off a traveling wave in the visual cortex, certain rhythms evoked standing waves, with some regions of the visual cortex becoming more activated and others less.



These findings prove the earlier purely theoretical hypothesis that flickering light can cause standing waves in the visual cortex.

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