

Can we 'learn to see?': Study shows perception of invisible stimuli improves with training

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Although we assume we can see everything in our field of vision, the brain actually picks and chooses the stimuli that come into our consciousness. A new study in the Association for Research in Vision and Ophthalmology's *Journal of Vision* reveals that our brains can be trained to consciously see stimuli that would normally be invisible.

Lead researcher Caspar Schwiedrzik from the Max Planck Institute for [Brain Research](#) in Germany said the brain is an organ that continuously adapts to its environment and can be taught to improve [visual perception](#).

"A question that had not been tackled until now was whether a hallmark of the human brain, namely its ability to produce [conscious awareness](#), is also trainable," Schwiedrzik said. "Our findings imply that there is no fixed border between things that we perceive and things that we do not perceive - that this border can be shifted."

The researchers showed subjects with normal vision two shapes, a square and a diamond, one immediately followed by a mask. The subjects were asked to identify the shape they saw. The first shape was invisible to the subjects at the beginning of the tests, but after 5 training sessions, subjects were better able to identify both the square and the diamond.

The ability to train brains to consciously see might help people with blindsight, whose [primary visual cortex](#) has been damaged through a stroke or trauma. Blindsight patients cannot consciously see, but on some level their brains process their visual environment. A Harvard Medical School study last year found that one blindsight patient could maneuver down a hallway filled with obstacles, even though the subject could not actually see.

Schwiedrzik said the new research may help blindsight patients gain conscious awareness of what their minds can see, and he suggested that new research should address whether the brains in blindsight patients and people with normal vision process the information the same way.

"Our study suggests that it might in principle be possible for blindsight patients to recover some visual awareness, and thus our findings might open a venue for a new line of research and potential treatments for patients with acquired cortical blindness," Schwiedrzik said.

More information: Sensitivity and perceptual awareness increase with practice in metacontrast masking, *Journal of Vision*.

Source: Association for Research in [Vision](#) and Ophthalmology ([news](#) : [web](#))

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