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Technology News

Light at the end for tunnel vision

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Industry Channel: [Electrical & Electronics](#)

Source: The Engineer Online

Scientists at Harvard University's [Schepens Eye Research Institute](#) have invented a visual aid which they say promises to improve the visual abilities of people with tunnel vision.

In their studies using the device, the research team saw a significant increase in the effectiveness and speed with which visually impaired individuals found objects. This device, which combines a tiny camera, pocket-sized computer and transparent computer display on a pair of glasses, may offer the most effective assistance to date for sufferers.

Residual tunnel vision occurs when peripheral or side vision is destroyed by disease, leaving only a small window of central vision. Tunnel vision can often cause the individual to bump into or trip over obstacles.

Glasses that act as reverse binoculars, miniaturising and pulling in the missing parts of their visual field, were tried in the past, but make things so small that detailed visual information is sacrificed.

The new visual aid, developed with the help of [MicroOptical](#), allows the patients to see detailed visual information through the transparent display. It simultaneously displays a superimposed shrunken outline version of a wider visual field. The tiny computer-video system provides updated outline information 30 times





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per second. When a patient becomes aware of a possible obstacle or important object in the superimposed outline image, he can move his head and eyes to look directly at the object through the display.

In the recent study, twelve patients with tunnel vision were asked to find targets that were projected outside their residual visual fields. The researchers found that the search directness and speed was greatly improved for all patients when the device was used.

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