



Tech that empowers everyone

How eye-gaze technology brought creativity back into an artist's life

Sarah Ezekiel explains how accessible technology helped her paint and recover after a motor neurone disease diagnosis

by [Sue George](#)

Main image: Sarah Ezekiel uses accessible technology in many parts of her life. Photograph: Elena Heatherwick/Guardian

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Sarah Ezekiel loves colour. Her living room is filled with bright and joyful prints created by herself and others. "I like so many artists and they have influenced my work. I particularly like Modigliani, Kandinsky and Picasso," she says.

Ezekiel lives with motor neurone disease (MND), and is unable to move from the neck down. Her own art – which can take months to make – is created using [eye-gaze technology](#). An infrared bar picks up her eye movements, and this operates an on-screen mouse and keyboard. "Eye-gaze has allowed me to create again," she says.

She uses this technology not just to make her art, but in many parts of her life – from operating the TV controls to paging her carer, to using social media and writing emails. It has also enabled her to campaign on [disability issues](#) and volunteer for the MND Association, and Lifelites (which provides specialist technology for children in hospices), as well as other charities. She has won many awards, including Third Sector volunteer of the year 2016.

"I can't imagine my life without it and I'm glad I wasn't born earlier, when we didn't have great technology. Assistive technology allows people with MND [and other] disabilities to communicate, access the internet and connect with other people," she says.

Ezekiel's feelings are mirrored by Microsoft, whose mission is to empower every person. This is achieved through integrating accessibility tech, such as the operating system to support eye-gaze technology, seamlessly alongside its Windows 10 and Office 365 suite.



Ezekiel's colourful artwork on display; the eye-gaze tech on her HP Spectre x360

Ezekiel, who lives in Hendon, north-west London, was diagnosed with MND in 2000. At the time she was 34, and seven months pregnant with her second child. She was referred to a neurologist during an antenatal appointment; the doctor immediately realised that her arm weakness and slurred speech were not due to pregnancy. Ezekiel was diagnosed with MND two months later and within a year was unable to use her hands. "I think I've become stronger since my diagnosis, because I've been through some very difficult times," she explains.

Although Ezekiel had always loved painting and drawing, and had been on a foundation course after she left school, earning a living had taken precedence over art. She worked as a personal assistant in publishing, with her ambition to become a fine artist overtaken by marriage and children then, later, by MND.

In 2010, she began to use eye-gaze technology. Although she had tried different sorts of assistive technology in the years following her diagnosis, this had often proved frustrating and uncomfortable. But using her eyes to operate the computer was a huge improvement, and in 2012 she began using this tech to create art with a software program called Revelation Natural Art.

"I found [eye-gaze technology] very easy to use compared to the software I used before. It's different for everyone and I know that I'm one of the super users. Some people struggle with it but it's great for me," she says.

As for her art practice: "I feel like it's still developing. I'm still learning about the art software I use." Her colourful paintings can take months to complete, but, she says: "I've always been very determined, my mum calls it stubborn!"

Ezekiel is also glad to support other artists using this technology. "I know a few eye-gaze artists, but art is a very individual practice and we all do our own thing. I'm often asked about the software I use and for advice, which I'm always happy to give."



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The technology is also becoming more accessible to other users. Microsoft is now on hand to offer guidance and support to potential eye-gaze artists, or anyone who wants to use [assistive technology](#) with their products. The company has worked on bringing eye-gaze technology to more users and, as a result, Windows 10 includes built-in tracking support and an experience called Eye Control. This enables people with disabilities to use a compatible eye tracker, like the Tobii 4C version Ezekiel uses, which unlocks the Windows operating system. Users will then be able to operate an on-screen mouse and keyboard using just their eyes. This tech also enables [text-to-speech](#), so when someone has typed a phrase or sentence using their eye tracker, this text can then be "spoken" by the computer.

Ezekiel is very keen to improve [access to technology](#) for other people who are no longer able to speak or express themselves. And for herself, she stresses that there is always more to find out and more ways to develop as an artist. "Eye-gaze painting is very different to using hands and it's still a learning curve for me."

Sarah Ezekiel's art is available via her website sarahezekiel.com

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