# New treatment to help children with autism overcome phobias

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The Blue Room scene can be adapted for each individual child's fear -- here, learning to cope with getting on a bus. Credit: Newcastle University, UK and Third Eye Technologies Limited

Following research showing that a unique immersive virtual reality can help children with autism spectrum disorder overcome their fears and phobias, the service known as the Newcastle Blue Room is now being

offered on the NHS.

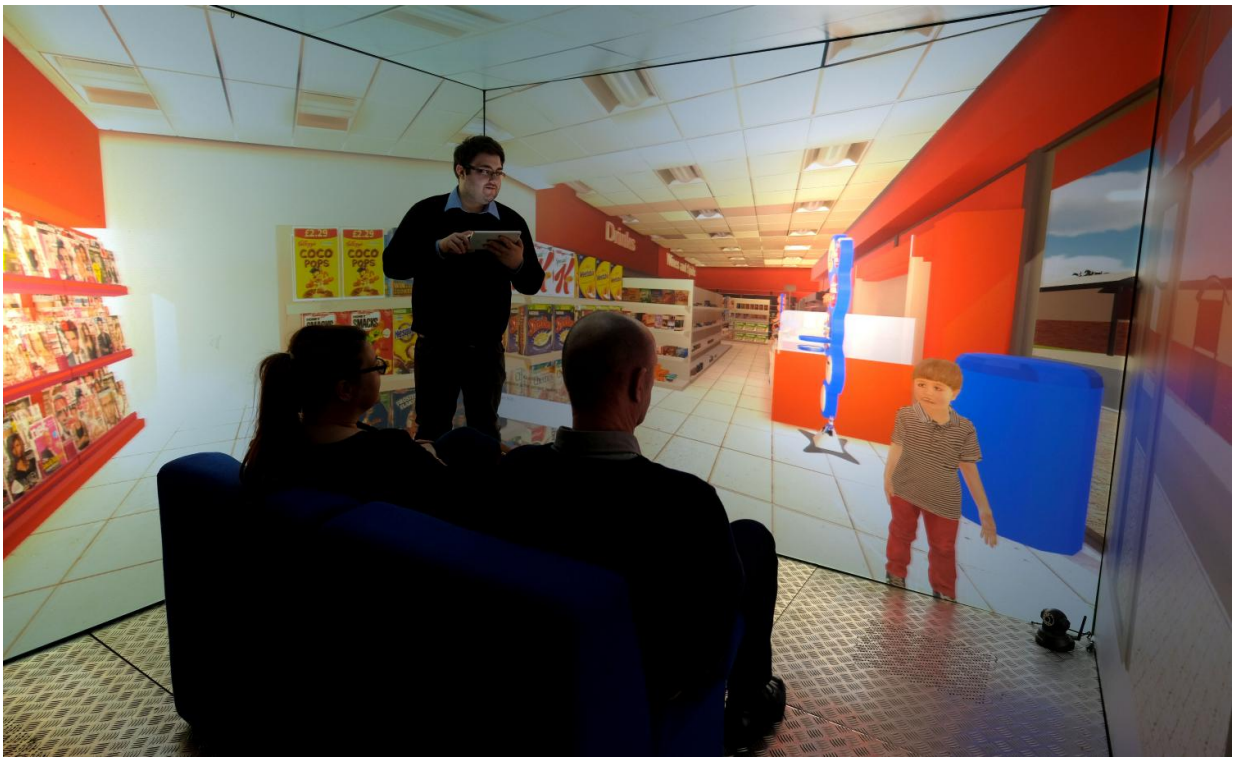
The first patients have been referred for treatment in the Blue Room, an immersive virtual reality room.

In 2014, the Newcastle University team reported in *PLOS ONE*, how eight out of nine children treated in the Blue Room were able to tackle the situation they feared and some were found to have completely overcome their phobias, even a year later.

Now the immersive reality treatment is available as a NHS service, where there is funding by the children's Clinical Commissioning Group, and each child referred will receive four sessions at the facility in County Durham, UK.

## Immersive technology as treatment

The Newcastle University team work with company Third Eye Technologies in their unique immersive Blue Room to create personalised scenarios. Accompanied by a psychologist, the child is completely surrounded with audio visual images representing the 'real world' in the 360 degree seamless screened room with no point of external reference. This means they do not have to wear a headset or goggles which children with autism can find distressing.



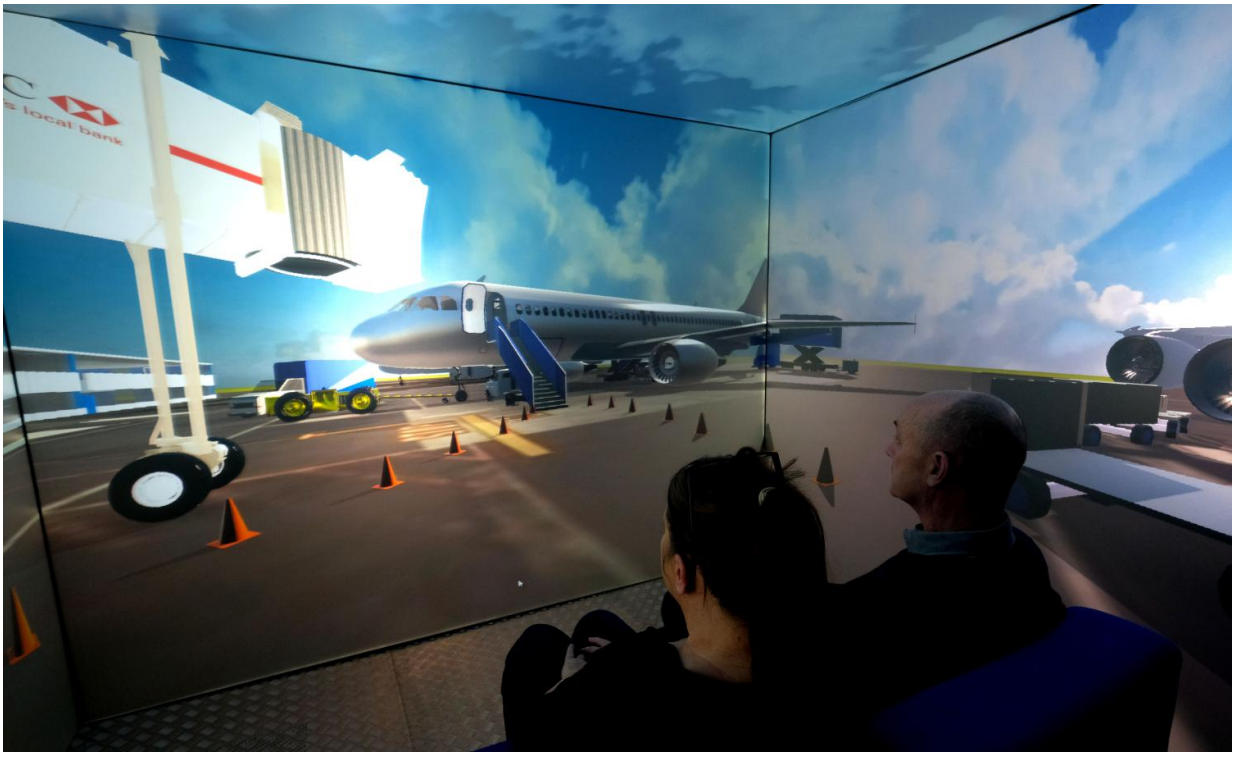

A scene in a shop recreated in the Blue Room to help a child with autism overcome their fear. Credit: Newcastle University and Third Eye Technologies

They move around the scene using ipad controls, interacting and navigating through the scenario as they wish allowing them to fully control the environment.

Scenarios tested already include getting on a busy bus, crossing a bridge, going shopping or talking to an avatar shop assistant.

Supported by a psychologist, they are given breathing and relaxation exercises in the controllable and safe virtual environment to help them to learn to cope with that situation. They are observed by their parents via a video-link which enables them to watch the techniques used to help their child.

The flexibility of the Blue Room means that scenes can be gradually built up in complexity and noise level, allowing a graded exposure and element of control that cannot be achieved in real life.



A scene is created to help address a child with autism address their fear or phobia such as getting on an airplane Credit: Newcastle University and Third Eye Technologies

## Combatting situation specific anxieties, fears and phobias

Dr Jeremy Parr is a Clinical Senior Lecturer specialising in Paediatric Neurodisability at Newcastle University and works within the Northumberland, Tyne and Wear NHS Foundation Trust which is providing the service. He said: "Situation-specific anxieties, fears and

phobias can completely stop a child with autism taking part in normal family or school life and there are very few treatment options for them. Currently the main treatment is cognitive behaviour therapy but that often doesn't work for a child with autism as it relies on their imagination.

"People with autism can find imagining a scene difficult so by providing it physically in front of the child's eyes we can sit alongside them and help them learn how to manage their fears.

"Our previous small scale study of this immersive treatment for children is incredibly promising and work is continuing on a much larger study. To see children able to face a situation that they previously found so distressing, such as going into a shop after just four sessions in the treatment room is amazing. It makes a huge difference to their lives."

To examine the long-term effectiveness of the treatment, a larger-scale clinical study is being carried out with the results due 2017 - in the initial study the effects were still felt by children one year after treatment.

The treatment is being offered through the NHS England Commissioned Northumberland Tyne and Wear NHS Foundation Trust Complex Neurodevelopmental Disorders Service (CNDS), whose remit includes research to develop new treatments and interventions and evaluate their use in the NHS. Payment for the treatment will be through the local Clinical Commissioning Group or equivalent and can information can be found on the Blue Room page of Newcastle University website: http://www.ncl.ac.uk/ion/research/developmental/devproj2/

## Harnessing technology

The technology supporting the treatment is being provided by ThirdEye technologies with a specialised facility in Consett, County Durham.

Managing Director Paul Smith said: "The Blue Room is a module where all surfaces are screens so no goggles or headsets have to be worn and this leads to you feeling totally immersed. When we were developing the facility we knew it had endless possibilities but to be able to harness the latest technology in order to help children with autism control their anxieties and phobias is incredibly rewarding and something we hadn't anticipated."

Around 150,000 children in the UK are thought to have autism spectrum disorder and it affects four times more boys than girls. Studies show that the condition costs the UK £32bn every year. Many people with autism spectrum disorder have a fear or phobia which can be so distressing that they and their families completely avoid the situation.

The work has been implemented with the Newcastle Academic Health Partners, a collaboration involving Newcastle Upon Tyne Hospitals NHS Foundation Trust, Northumberland, Tyne and Wear NHS Foundation Trust and Newcastle University. This partnership harnesses world-class expertise to ensure patients benefit sooner from new treatments, diagnostics and prevention strategies.

**More information:** Morag Maskey et al. Reducing Specific Phobia/Fear in Young People with Autism Spectrum Disorders (ASDs) through a Virtual Reality Environment Intervention, *PLoS ONE* (2014). DOI: 10.1371/journal.pone.0100374

Provided by Newcastle University

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