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## How a children's game proves ADHD really is all in the mind

By [Oona Mashta](#)

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The news will infuriate millions of parents who have children diagnosed with Attention Deficit Hyperactivity Disorder (ADHD). A new British study has proved that children suffering from the behavioural disorder can control their symptoms - simply by learning self-discipline.

Researchers from the University of Hertfordshire's School of Psychology in Hatfield have been studying the effects of a thought-controlled computer game that requires the player to concentrate in order to win.

Ten children, who were either diagnosed with ADHD or identified by their teachers as having attention problems, were asked to play the game three times a week for 12 weeks.



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**Game plan: Justis Wintz has made steady progress since taking part in the study and his mother Suzanne says he is much calmer**

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Each session lasted for half an hour with the children tested to measure their attention before and after the experiment. At the end of the study, the researchers found that the children's impulsive behaviour had improved by at least 25 per cent.

The results are being hailed by experts as a major breakthrough in the treatment of ADHD, which is estimated to affect between three and nine per cent of children in the UK.

'The game trains children who have problems with attention to concentrate,' explains Professor Karen Pine, who led the study.

'Children with ADHD can't sit still and find it hard to stick at any task. They never seem to listen and appear unruly or badly behaved. The condition makes it hard for them to curb their impulsiveness.

'Traditionally, drug treatment has been the only real option. But these findings show that ADHD can be tackled simply by teaching self-control.'

ADHD is defined by two broad groups of behavioural problems: inattentiveness, and a combination of hyperactivity and impulsiveness. Common symptoms also include a short attention span, restlessness and constant fidgeting.

It was first described by physiologists in the late Eighties, and boys are three times more likely to be diagnosed. The condition is usually managed, if at all, with medication including powerful amphetamine-like stimulant drugs, which work by affecting levels of brain chemicals known as neurotransmitters, aiding concentration and reducing hyperactivity.

However, these carry serious side effects when taken long-term, including damage to the cardiovascular and nervous systems - and many parents are reluctant to medicate their children. Around 60 per cent of children diagnosed with ADHD continue to suffer from the condition as adults.

The Hertfordshire researchers were investigating the effects of a learning strategy known as electroencephalography (EEG) biofeedback, now used in a number of American schools for children with attention problems.

The games system, called Play Attention, uses a helmet lined with electrodes, to monitor brain activity, which is connected to a computer.

'The helmet picks up brain rhythms associated with concentration,' explains Prof Pine. 'This sends messages to what is effectively a computer games console, so the player can control the game with their mind.

'The games are designed so that if the player concentrates for long enough they win. However, if their attention is broken the game freezes.

'In one game the children had to get a deep-sea diver to descend to the seabed and retrieve treasure. To get him to dive, they had to focus their attention - he stopped moving if their mind wandered. It is a fun and very effective way of teaching these children to control their attention.'

One child who took part was eight-year-old Justis Wintz, from Hoddesdon, Hertfordshire.

'When Justis first started school, it quickly became obvious he had problems concentrating,' says his mother Suzanne Delaney, 39, a mature student. 'His teachers told us that he wouldn't sit still and that he'd often blurt out inappropriate questions.

'This didn't surprise us - at home his temper was volatile. One minute he'd be playing, the next he was angry and throwing things at us. He was impossible to discipline.'

Suzanne and her partner Joseph Wintz, 41, a supervisor for London Underground, eventually had to move their son to a local special school. But since participating in the Play Attention study, they are delighted with his progress.

'He is calmer and he doesn't fidget as much,' says Suzanne. 'He now gets dressed with less prompting, gets his own juice and even washes up the odd saucepan, which he never did before. Since he's changed so much in a relatively short time, our aim is for him to go into a mainstream

secondary school.'

In US studies, EEG feedback was found to be effective in controlling symptoms of ADHD in 75 per cent of patients. The games makers, educational charity Games For Life, hope the systems - which cost around £2,500 - will eventually become commonplace.

Prof Pine believes the results of the study are promising but says that more research is needed.

'We don't know how long the effect lasts but we expect three months of sessions would be a minimum length of time needed to see a significant lasting difference in behaviour,' she says.

• [www.gamesforlife.co.uk](http://www.gamesforlife.co.uk)

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