The makings of a meltdown
Insight from an adult with autism into what happens and how parents can help

An all-round intervention
A highly praised American programme using balls is about to bounce into the UK

Schools with bad buildings
Experts reveal how learning environments can be made better with simple changes

Autism eye

Helping you to help your child

Issue
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Overlap confirmed with ADHD

Individuals with autism share genes with those who have attention deficit hyperactivity disorder, a study reveals.

The research helps to explain to parents why their autistic child may exhibit ADHD behaviour.

The study, conducted by the University of Toronto and the Hospital for Sick Children (SickKids) in the same city, involved scientists using gene-chip technology to examine the DNA of 248 patients with ADHD. They found that individuals carried some genes that had previously been identified in autism.

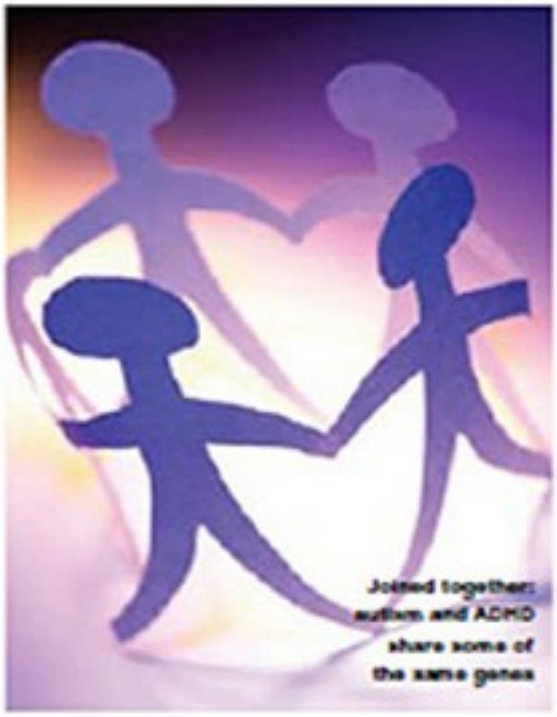
The scientists searched for copy number variants (CNVs), which are insertions or deletions affecting the genes. They found that nine of the children in the study who were all diagnosed with ASD also carried CNVs that are related to ADHD, confirming the often-reported overlap between ADHD and autism.

SickKids said that most individuals with ADHD also have at least one other condition, such as anxiety, mood, conduct or language disorders. Meanwhile, up to three in every four (75%) of those with ASD also had attention deficits or hyperactivity.

Dr Stephen Scherer, senior scientist at SickKids, said: "A lot of these associated problems probably arise from the fact that they are sharing genetic risk for different conditions."

The results are thought to be reassuring to clinicians who are concerned about over-interpreting the traits they see in patients who may display the characteristics of more than one condition.

"This research reinforces the notion that their gut observation is correct," Dr Scherer said.



Joined together: autism and ADHD share some of the same genes

Why 'I' am often 'you'

A brain imaging study has thrown light on why children with autism often have difficulty using pronouns correctly, sometimes referring to themselves as "you" instead of "I".

Neuroscientist Marcel Just at Carnegie Mellon University in Philadelphia has put forward the theory that frontal-posterior underconnectivity in the brain causes autism and disrupts the concept of self. The idea of self is processed by at least two brain areas, one frontal and one posterior.

Just said: "The psychology of self – the thought of one's own identity – is especially important in social interaction, a facet of behaviour that is usually disrupted in autism."

Big rise in applications for short breaks

The number of families with disabled children gaining access to short breaks has almost tripled in the past three years, according to the latest figures.

A report commissioned by the UK government reveals that 162,831 families gained funding for a short break between March 2010 and March 2011. The figure compares to just 57,383 who received short breaks during 2008/9.

However, Gillian Loughran, *Autism Eye*'s editor, said that much work needed to be done to inform families affected by autism about their eligibility for short breaks. This follows dozens of calls to the magazine during the summer from parents looking for information about respite care who did not know about the short-breaks initiative.

She said: "Children with autism and their parents could benefit greatly from the short-break scheme and they must not be allowed to miss out."

Short breaks can include having government funds to pay someone to take a child on a day trip, or having funding to enrol in an activity that would interest the child. Campaign group Every Disabled Child Matters has created a downloadable letter for parents to use to initiate an assessment.

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Room to move: a school circulation space with sitting areas that double as toy boxes

Built for learning?

So many schools get it wrong: dazzling their pupils with fluorescent lights and bombarding them with noise. Improve the teaching environment and the results can be impressive, discovers Gillian Loughran

'The Pits', 'The Dungeon' and 'The Urinal' – these are all nicknames that I have heard used for buildings where children with autism go to school.

Like many parents of a child with autism, I have visited a large number of schools over the years to find the right provision for my child. I would start out hopeful that a school would meet his needs, only to be disappointed by the inadequate environment it offered.

I recall the unit where the lavatory was so close to the classroom that the stench of urine came wafting in around the children.

Another school I visited was in a stunning listed building that had quite a few unused rooms, so I was surprised to find that young children were being taught in the basement, with little natural light and poor ventilation. They were cut off from the rest of the school because they had 'challenging behaviour', which was hardly surprising given the challenges they faced trying to function in their challenging environment. Our children deserve so much more than this.

Teresa Whitehurst, a consultant in the field of special needs with a background in clinical neuropsychiatry, confirms that the surroundings in which children with autism are taught are often inadequate. "Providing the right environment for children with ASD is not only desirable, but it's their right," she says.

> **"It was interesting to see how changing the environment could make a quick, dramatic impact on the lives of the children"**

"This intricate interplay and delicate balance between environmental factors and human factors converge to create a space where children can be children – not just a child with a disability."

Poor ventilation

Why didn't anyone in that school with the classrooms in the gloomy basement consider whether poor ventilation would have a negative impact on the children? Research shows that without good ventilation the body can find it hard to reduce the negative adrenalin produced when stressful events occur[1]. Since our children often suffer from high levels of stress and anxiety, the effect of poor ventilation is likely to be particularly bad.

Let's move our tour on from the dingy basement to a depressing sensory room. I've visited a school that had a room containing a mattress, a duvet, a few bean bags and a lava lamp. The head teacher barefacedly described it as 'the sensory room' with not a trace of irony. As a parent, you should expect much more than this now that cutting-edge sensory room installations are finding their way into schools throughout the world from companies such as Mike Ayres Design and Rompa.

In the classroom, a common design fault is to have fluorescent lighting. Blazing fluorescent lights are likely to make any autistic child's sensory processing difficulties all the more severe, and flourescent lights have also been found to affect the vision field of some children with ASD[2].

So poor are some facilities for children with autism that it can prompt harsh criticism from pioneers of good practice in the design of schools and residential facilities across the UK. Catriona O'Malley, director of services of West Midlands-based charity Sunfield, says: "I often visit places and ask myself, how on earth do they get away with it?"

She is clear that making positive changes to the child's environment can have a profound effect. "We've seen it work. It makes a difference," she says.

Sunfield's guidelines for creating well-designed schools and residential facilities include:

- Single-story construction to maintain safety and ease of movement
- Curved walls to help the children move easily through various areas of their building
- Neutral and calming colours in the decor
- A large amount of natural light
- Easy access to outside areas that are within the children's own control
- High-level windows that provide additional ventilation without the risk of children absconding.

According to O'Malley, these features contribute to the children's sense of security and wellbeing, enabling them to function more successfully.

Older buildings

If that's the ideal for a new-build, the construction options are more limited for schools housed in older buildings. Nevertheless, a lot can be done to adapt them to make the environment better.

At the state-run Phoenix School in Tower Hamlets, East London, for instance, head teacher Stewart Harris decided to make design changes to his buildings. He found that pupils at his school, in one of London's most deprived areas, benefited from the changes "within minutes" by becoming calmer and more focused.

Harris enlisted the help of London-based GA Architects, specialists in the design of buildings for children and adults with autism. He was concerned that his school, for children with autism aged from two to 16, was too noisy, given that they can often find noise very distracting.

The school installed acoustic ceilings, added acoustic treatments to the walls, and improved the lighting. Harris says: "It was interesting to see how changing the environment could make a quick, dramatic impact on the lives of the »

MAIN PHOTOGRAPH COURTESY OF GA ARCHITECTS

Safety versus independence: built-in balance

The importance of good building design doesn't diminish when children with autism grow older. Parents and carers of teenagers preparing for transition into adulthood and choosing a reidential placement need to think about how the design of any specialist facility would impact on their child.

Options Group, a trendsetter in creating autism-friendly buildings, has been putting the finishing touches to a transitions service in North Wales for young people aged 18+ with ASD.

Set in a rural location overlooking the Dee Estuary in Flintshire, Aalps Cymru aims to strike a balance between maintaining the safety of its inhabitants and encouraging their need for independence. Much of the design promotes socialization, allowing young people to make appropriate choices for their private spaces in an environment where everything from specialist lighting to the design of kitchen equipment and work spaces has been taken into consideration. Each young resident will have a personalized living space with direct access to enclosed gardens and relaxing areas.

Beaver: "We all react to our environment"

Whitehurst: "Issue of rights"

Bend it: a curved wall at a school, as favoured by Christopher Beaver

children and impact positively on their curriculum."

Christopher Beaver, a partner at GA Architects, thinks that some children with ASD who are labelled as 'challenging' could be reacting to a teaching environment out of sympathy with their condition.

"We all react to our environment," he says. "If we're squashed into a tube train with other bodies so close to us that we can feel another's breath on our face, or feel their warmth, we feel distinctly uncomfortable. If we're in a noisy restaurant where there's so much noise that we can't hear what someone right in front of us is saying we feel frustrated and annoyed.

"If we're in a badly ventilated space we can feel tired and lethargic. If we're in a space that has bright lights or has no means of filtering glare from outside, we can feel anxious or uncomfortable."

> **"If we're in a space that has bright lights or no means of filtering glare from outside, we can feel anxious or uncomfortable"**

It's clear that a well-designed building that takes into account all these problem areas will be a better environment for learning, with lower levels of frustration, anxiety and insecurity. "If we're happy we will behave better," Beaver says, "and that applies to all of us, whether we're on the spectrum or not."

References:

[1]Delfos, M.F. *Children and Behavioural Problems: Anxiety, Aggression, ADHD and Depression - A Biopsychological View with Guidelines for Diagnostics and Treatment.* Jessica Kingsley Publishers, London, 2004.

[2]Irlen, H. *Reading by the Colors: Overcoming Dyslexia and Other Reading Disabilities Through the Irlen Method.* Avery, New York, 1991.

Unbearable brightness and sharp sounds

Our experience of environments, by adults with autism

"I found many noises and bright lights nearly impossible to bear … (they) disarmed my calm and made my world very uninviting… Together, the sharp sounds and the bright lights were more than enough to overload my senses."

Liane Holliday Willey, author of Pretending to be Normal: Living with Asperger's Syndrome

"The world often scares me… one stimulus can be so overwhelming… I begin to panic or my temper flares up… My feelings at that point can best be described as a survival instinct."

Dominique Dumortier, author of From Another Planet: Autism from Within

"People with AS (Asperger Syndrome) are like saltwater fish who are forced to live in fresh water. We're fine if you just put us into the right environment match, the problems go away and we even thrive. When they don't match, we seem disabled."

Adult with Asperger Syndrome, as quoted by Simon Baron-Cohen, Professor of Developmental Psychopathology at the University of Cambridge

Planning a school visit?

Look out for these issues

If you see the following problems on visiting a new school, your child will experience them as well. And if your child is already attending a school that has issues with its building, why not speak to the staff there or to the local education authority and suggest they make changes.

- **The school building should have a clear and simple geography. It should be easy to find your way around without having to go up and down a lot of stairs. Colour coding can help, with floor colours designed to differentiate between classrooms or therapy spaces.**
- **"Corridors are the death of a building," says Christopher Beaver of GA Architects. They provide "running" opportunities for children, often with disastrous results. Beaver is an advocate of 'circulation space', where children can sit, read, socialize or spend some quiet time. He favours curved walls and views out into landscaped areas, which can create a more relaxing means of getting from A to B.**
- **Buildings for children with autism should be calm and quiet. If rooms are noisy, sound-absorbing ceilings and wall finishes can be installed. Carpet is better for dealing with impact sound than wood or vinyl flooring.**

PHOTOGRAPH COURTESY OF GA ARCHITECTS