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The Big Question: How much do we really know about the causes and incidence of autism?

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Why is autism in the news again?

The developmental disorder characterised by "extreme autistic loneliness" and "an obsessional desire for the maintenance of sameness", according to Leo Kanner, who first described it in 1943, exerts a grip on the public imagination like no other.

Research published this week suggested men over 40 were six times more likely to father a child with autism compared with men under 30. The study, published in Archives of General Psychiatry, involved more than 130,000 children in Israel, and is one of the first to suggest that men may be subject to the same biological clock that increases the risk of birth abnormalities in women as they age.

The research showed ageing in men had a linear effect, with the risk of fathering a child with autism doubling every 10 years. However, the team found no link with the age of the mother.

What does this tell us about autism?

Two things - possibly. First, it suggests one factor contributing to the widely reported rise in autism could be the trend to later parenthood - in particular later fatherhood.

Second, it adds to evidence that genetic factors are a key cause of autism. The researchers, who included a team from the Institute of Psychiatry at Kings College, London, say spontaneous mutations in sperm-producing cells, or discrepancies in how genes are expressed, may account for the increased incidence with older fathers.

Why so much interest in autism?

In the social world in which we live, the capacity to read situations and respond appropriately is crucial to success and can mean the difference between popularity and loneliness. Autism disturbs something that is core to our being human.

Some suggest that the greater public interest in autism compared with other disorders such as Down syndrome occurs because sufferers look "normal" and are hence easier to identify with.

Interest in autism and its causes has been fuelled in recent years by the controversy over MMR vaccine after research by Andrew Wakefield published in The Lancet in 1998 suggested it could be linked with autism and bowel disease. The research has since been largely discredited but the controversy has continued.

Is autism increasing?

Yes and no. A disorder characterised by an "inability to read social situations" is not simple to diagnose. In some people, autism is disguised by high intelligence and may go unrecognised throughout their lives. Experts now refer to autistic spectrum disorders to include those less severely affected and over the decades this elastic definition has stretched to include increasing numbers of people.

Classic autism, the severest kind, is thought to affect 30,000 people in the UK, about five in every 10,000, a figure that has remained largely unchanged in 50 years. However, more than 500,000 are estimated to be suffering from autistic spectrum disorders including Asperger's syndrome, a mild version of autism, sometimes called "mind blindness". Of these around a fifth are people with a low IQ and who need support, and four fifths are of average or high IQ and are mildly affected, according to the National Autistic Society.

Most experts say that because autism includes a spectrum of disorders with no clear boundaries, the apparent rise in cases is due to growing awareness and shifts in diagnosis. Nevertheless many believe there is an underlying real rise in the condition.

What causes it?

The disorder is known to run in families, indicating a strong genetic component. If one identical twin is affected the other is likely to be, too. It is four times more common in boys than in girls. However, it is likely that in many sufferers, their genetic make-up makes them vulnerable but does not cause the condition, which requires some environmental trigger. One factor is thought to be brain damage but it is unclear whether this happens before, during or after birth.

A study of 25 adults with autism in the Netherlands concluded that in a third of them there were physical abnormalities such as abnormally large or small heads. The researchers said there was a greater incidence of minor physical abnormalities among people with autism, suggesting something may have gone wrong during development in the womb.

What about the environment?

Many environmental causes have been cited including diet, pesticides, infections, MMR vaccine, mercury and lead. But none has been identified as a definite cause.

In the past, the finger has been pointed at parents and questions raised about their child rearing. Sir Michael Rutter, emeritus professor of developmental psychopathology at Kings College, London, says the days when bad parenting was blamed for the condition are long gone and that "the environmental factors are likely to be physical not psychological".

Richard Lathe, author of *Autism, Brain and Development*, argues many cases of autism may be caused by a genetically determined vulnerability of the brain to particular pollutants. When exposed to these toxins (even at levels that would have no effect on most people) during a vulnerable stage of development in the womb they may damage key areas of the brain.

Can it be treated?

Many parents of autistic children believe so. The charity Research Autism has claimed 60 per cent of families with an autistic child were using milk or wheat-free diets following claims that they improved symptoms. Much excitement was also generated around the hormone secretin in the 1990s, but trials failed to demonstrate a link.

Many parents have also tried intensive one-to-one behavioural therapy to try to teach their autistic children to pick up the cues and read the signs vital to normal social interaction. The best known is the Lovaas method, developed by Ivor Lovaas, a psychologist in Los Angeles 30 years ago, aimed at pre-school children. Lovaas claimed that almost half of children who worked 40 hours a week at home with the method achieved normal functioning by the age of seven and most of the rest made substantial progress.

But the long, intensive and expensive treatment is still controversial. The National Autistic Society says the outcome "will depend on the needs of the individual, which vary greatly, and the appropriate application of the intervention".

Can something be done about autism?

Yes...

- * Early diagnosis helps parents accept and respond appropriately to their child's behaviour
- * Many believe early intervention with changes to diet and behavioural therapy have helped
- * Research into the causes may help reduce the incidence of the condition

No...

- * There is no firm evidence that any known treatment for autism actually works
- * More than 50 years after it was first identified, the condition is still little understood

* More than 500,000 people are affected and many believe the numbers are increasing

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