Physiological links to autism increase

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AUTISM is increasingly being linked to a number of physiological factors, thus weakening the traditional view that it is a childhood psychiatric disorder.

The latest research findings from the United States and Canada suggest that one of the possible causes is an immune-system defect. Although the scientists involved are willing to let some of their findings be known, many are reluctant to draw conclusions until more data are available. Thus far, they have noted impressive improvements in autistic patients who were treated for a physiological condition. These include increases in IQ test scores of up to 35 points.

One doctor who is willing to make a strong statement concerning physiological ties to autism is Dr. Audrius Plioplys, a pediatric neurologist at the Hospital for Sick Children and Surrey Place Centre, both in Toronto. He made public some of his research findings on immune system dysfunctions of autistics at the annual meeting in Toronto last week of the Ontario chapter of the American Association for Mental Deficiency.

Dr. Plioplys contends that "autism is not a disease but a syndrome with similar clinical findings. Autistics usually appear to be normal until about age 2, when they begin to display symptoms.

"The standard approach has been for psychiatrists to analyze the parents. This puts tremendous guilt on families and ignores any physical basis for the condition."

The children are treated with a variety of psychotherapeutic and psychological interventions, with varying successes.

Autistic children are very isolated and lack social skills. They are inward and preoccupied with hand flapping, twirling or similar behavior. They are also obsessed with sameness and become upset when the order they know is changed. Dr. Plioplys gave an example of one patient who began having temper tantrums in the living room. It turned out that these tantrums were precipitated by the removal of a book from a shelf. When the book was replaced, they stopped.

Autistics treated for immune defect showed rise in IQ after 16 weeks

Dr. Plioplys pointed out that this illustrates the tremendous memory and observational powers oft autistics. Even though many are mentally retarded, they can often do one particular skill very well. One, he said, could recite the names and birth dates of all the U.S. presidents, their wives and children, but seemingly could do nothing else.

Scientists already know that some physiological conditions can lead to autism in infants. An inherited metabolic disorder known as phenylketonuria (PKU) does result in retardation and autism. However, the symptoms can be prevented through dietary intervention begun within the first few weeks of life.

German measles during pregnancy can also lead to autism, as can tuberous sclerosis. This latter condition is an inherited disease that can produce seizures, retardation and autism. Often, a parent can have the condition but does not display any symptoms.

Recently, a number of physiological abnormalities associated with autism have been uncovered and treatment attempted. Fragile X syndrome is associated with some cases of autism. The X chromosome is the female chromosome. Males have an X and a Y (the male chromosome) whereas females are XX. In some males, when the chromosomes are cultured in the absence of folic acid (a B vitamin), the X looks as if it is broken. This does not show up when the chromosomes are cultured normally.

Dr. Jerome Lejeune, the French scientist who discovered the existence of three chromosome 21s instead of the normal two as a cause of Down's Syndrome, has postulated that folic acid might be of some benefit as a treatment for Down's. In a report published in the British medical journal Lancet, he reported improvements in seven of eight children. In a more recent Swedish study, it was concluded that folic acid might be effective in the treatment of some fragile X patients (not all people with the fragile X chromosome show abnormalities, which can include retardation with or without autism).

Thirty to 40 per cent of autistics have abnormal levels of the brain chemical serotonin in the blood. Most have elevated levels, while some have lower levels than normal. Studies with the drug fenfluramine, which is known to decrease blood and brain serotonin levels in animals, have been attempted with varying success.

The original work along these lines was reported in the New England Journal of Medicine, with considerable publicity about substantial increases in IQ ability. This was followed by a study in Los Angeles, which found that some autistics with low serum serotonin levels and higher IQs did respond well to fenfluramine. Other studies have not found improvement. In 1986, the U.S. Journal of Pediatrics warned practitioners to exercise caution with this treatment.

The emergence of Rett's syndrome out of the general diagnostic category of autism, according to Dr. Plioplys, "is the first glimmer that autism can be broken down into a series of different and distinct physiological categories."

There tend to be more males than females in the autistic population, but Dr. Andreas Rett of Vienna first noticed that a group of autistic girls was somewhat different from other autistics. These patients began to deteriorate about the age of 2 and had seizures with autistic tendencies. All these girls had elevated endorphin levels in the brain. The endorphins are the brain's own natural opiate or painkiller.

In a study conducted by Virginia neurologist Edwin Myer, improvement was noted in behavior, awareness and seizure control when the drug naltrexone, which inhibits the endorphins in the brain, was used. These children are no longer considered to be autistic. They are classified as having Rett's syndrome.

The latest research suggests that a number of autistic children have immune-system abnormalities. Dr. H. H. Fudenberg, a noted immunologist at the University of South Carolina and author of a standard text used by many medical schools, reported in 1987 at the neuro-immunology conference in Philadelphia that he found a number of abnormalities. Some of these he was able to rectify, with dramatic improvement in the children.

He found a subset of autistic children with abnormalities in their immune system that seemed to result from improper functioning of suppressor T cells. These cells "turn off" imune responses.

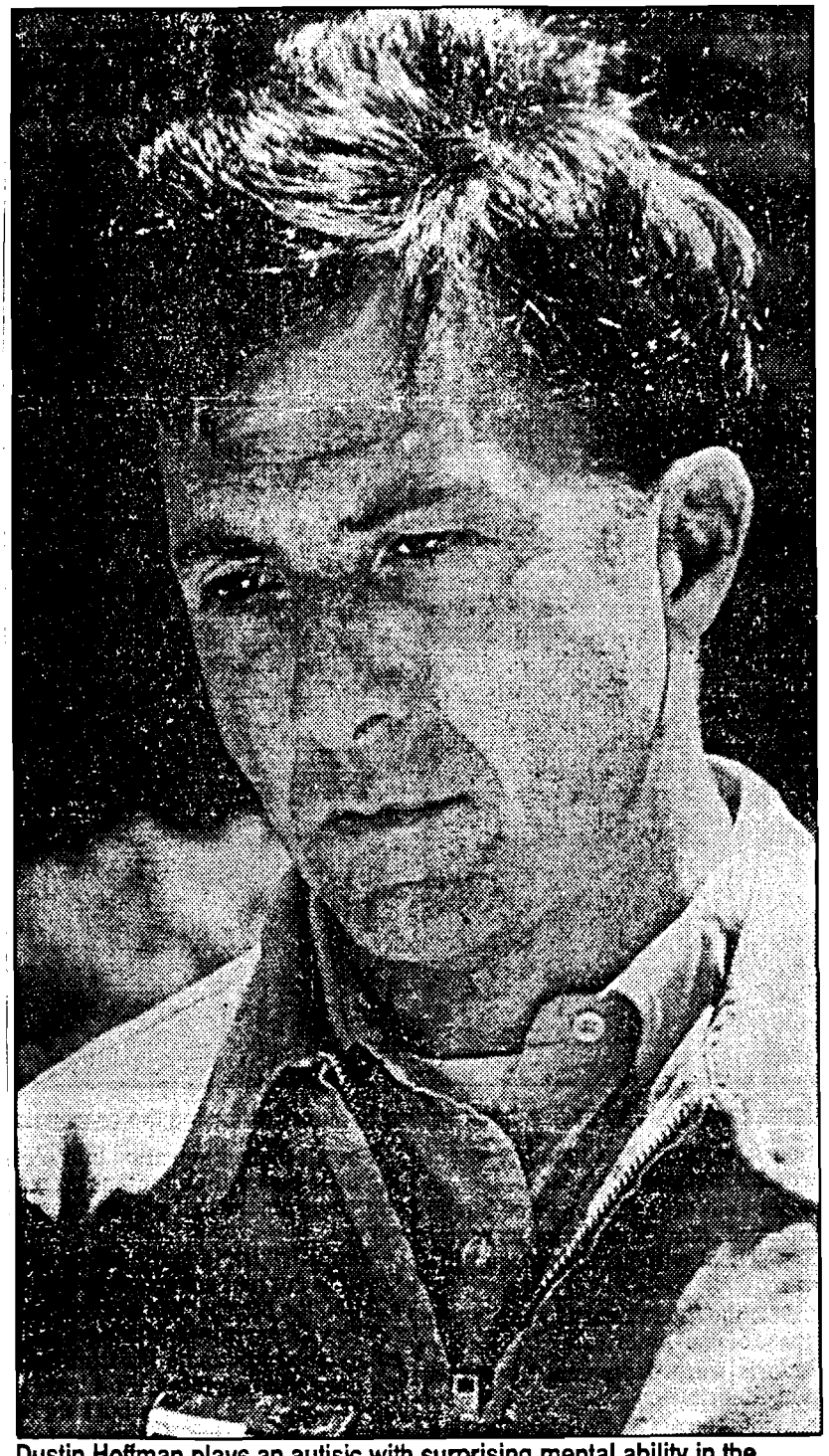
He also found antibodies in the blood not only of autistic children but of their parents and siblings that would suggest some sort of slow virus as a possible cause. Six patients with the immune defect and two without were placed on corrective therapy. Dr. Fudenberg said he will not specify the therapy until more data are available.

All six patients with immune system defects showed dramatic improvement, he said. After eight weeks, they could speak complete sentences. After 16 weeks, they could write a complete sentence, and were then credited with having 35 more IQ points. The two patients with no immune system problems did not improve at all.

Dr. Plioplys has just completed an immune study of 17 autistics aged 8 to 23. He found a number of similarities with the South Carolina study, but noted that with the older patients there was less of a physiological abnormality. He suggests that early in life something occurs that damages the brain, as noted by the changes in the immune system. As the individual gets older, these immune system dysfunctions begin to lessen, the damage having already been done.

Dr. Plioplys is planning to look at immune functioning in much younger children. Because autistic children appear to be normal until about age 2, it is conceivable that they are attacked at that age by a virus that damages the brain.

Although there is considerable work left to do, Dr. Plioplys is confident that treatment of autism will develop, like that for PKU, which today is totally preventable.



Dustin Hoffman plays an autisic with surprising mental ability in the recently released movie Rain Man.