

Autism Research Review

I N T E R N A T I O N A L

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Reviewing biomedical and educational research in the field of autism and related disorders

Are some cases of autism really Tourette's?

When physicians first began reporting cases of autistic children developing Tourette syndrome (TS), most researchers thought it was coincidence. Now, several leading TS researchers offer startling evidence that autistic children who develop Tourette's may not be autistic at all, but rather may have a severe form of Tourette's. This finding, if true, could have major implications for treatment and genetic counseling of families of autistic children who develop TS.

Tourette syndrome usually develops in childhood, and is much more common in males than in females. Symptoms include tics such as eyeblinking, lip smacking, cursing, grunting, or coughing; compulsive behaviors; attention deficit disorder; anxiety; depression; and delayed speech development. About 30 percent of relatives of people with TS (compared to six percent of a sample population) exhibit anxiety, depression, obsessive-compulsive behavior, drug or alcohol abuse, eating disorders, sexual disorders, or violent behaviors.

While Tourette's is commonly believed to occur in about one in every 1,000 to 1,500 male children, one recent study indicated that it may be present in as many as one in 100 boys, and one in 759 girls.

Family pattern seen

In an article in a recent issue of the *American Journal of Medical Genetics*, David and Brenda Comings report on 16 cases in which children with "pervasive developmental disorder," a recently defined (and controversial—see ARRI 5/2) syndrome which overlaps autism, developed Tourette's, and another three cases in which a child with TS had an autistic relative. In the same journal, Jeffrey Sverd reports on 13 children with autism or PDD who developed TS. Previously, 41 similar cases had been reported in the medical literature. The researchers say the number of autistic or PDD children developing TS is far too high to be explained by chance, and that TS symptoms in these cases cannot be explained away as a side effect of drugs given to autistic children.

One of the most important findings of both research groups concerns relatives of autistic children who develop TS. A significant number of these relatives exhibit problems including attention deficit disorder, hyperactivity, alcoholism, drug abuse, depression, panic disorder and/or obsessive-compulsive disorder—the same constellation

of disorders seen in same percentage of the relatives of individuals with TS. Relatives of autistic children *without* TS, on the other hand, have no significantly elevated incidence of these disorders (with the possible exception of depression). The researchers also note that a high number of relatives of autistic children with TS exhibit tics or other symptoms of Tourette's themselves.

Half of the children with autism plus TS in Sverd's report had relatives who exhibited mild social awkwardness or isolation. Sverd says this "suggests the hypothesis that TS may be responsible for subtle disturbances of social relatedness and some cases of familial aggregation of autism-PDD."

A genetic explanation?

David and Brenda Comings speculate that Tourette's is inherited as a "semi-

dominant semirecessive" trait. People inheriting two abnormal genes would have moderate to severe symptoms of TS, while people inheriting only one gene would have mild symptoms or no symptoms at all.

The researchers now suggest that autistic children who later develop Tourette's also have inherited two TS genes. The symptoms of these children, they say, may actually be a severe form of Tourette's rather than autism or PDD. It is possible, they add, that environmental factors or additional defective genes could explain why some individuals would develop TS only, while others have autism or PDD as well.

A number of researchers have noted that autistic children who develop Tourette's tend to have a milder variation of autism,

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Update III—Auditory Training

By Bernard Rimland, Ph.D.

(This is the third article in our continuing series on auditory training.)

In ARRI 4/4 we published an Editor's Notebook article on "Sound Sensitivity in Autism," which described the work of French physician Guy Berard, whose remarkably successful training of an autistic girl was reported in the book *The Sound of a Miracle*, by her mother Annabel Stehli.

The first update, published in ARRI 5/1, reported that the first experimental evaluation of the Berard auditory device was nearing completion and that an electronic device similar in many ways to Dr. Berard's was being produced in the U.S. We also offered several suggestions we hoped would be helpful to parents of sound sensitive autistic children, many of whom wished to try auditory training.

Georgie's extraordinary response to AT attracted a great deal of media attention. *The Sound of a Miracle* appeared as the condensed book in the *Reader's Digest* for December 1990, and Georgie's story was also reported in *Woman's Day Magazine* and in a number of television programs in the U.S. and Canada. The ARI has, as a result, received well over 2,500 inquiries about AT from parents and professionals. In late June we sent a four-page letter to all who had requested information about AT.

(If you would like a copy, please see footnote.)

The first AT evaluation study, completed in the summer of 1991, was a double-blind experiment based on 17 autistic children and conducted in Portland, Oregon. Eight of the children were given Berard auditory training, and nine were given control group training. The results were presented at the Autism Society of America annual meeting in July by Dr. Stephen Edelson and myself. We regard the results as promising and encouraging, but not spectacularly positive. While none of the children showed the major improvement seen in Georgie, most of the parents who participated feel that worthwhile improvement was achieved. The changes in the various measures used were very small at the end of the 10 days of auditory training, but, as expected, increased over time, and were appreciable and significant at the end of three months.

The results of the first study are now being written up for publication and will be made available to the readers of the ARRI when completed. The results were sufficiently promising to warrant the undertaking of a second study, also to be conducted by Dr. Edelson in Portland, Oregon. If you are interested in enrolling your child in the study (all participants will be given auditory train-

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