

“Autism Treatment: Anemia Could be a Factor”, States Tampa Dr. Mane

ADHD and all the Autism Spectrum Disorders (ADHD, Aspergers, Tourettes, OCD, Autism) are childhood neurobehavioral disorders. Many times these disorders are so complex and can be so emotional that we lose sight of basic neurophysiology. Certainly we all agree that these disorders have a neurological component. As such, it should be remembered that all neurons (nerve cells) need fuel and activation to survive. Fuel is glucose and oxygen. Here we focus on oxygen. Neurons need oxygen. Anemia from iron deficiency causes hypoxia (lack of oxygen).

Anemia ([AmE](#)) or **anæmia/anaemia** ([BrE](#)) (from the [Ancient Greek](#) Ἀναμία *anaîmia*, meaning “without blood”) is defined as a qualitative or quantitative deficiency of [hemoglobin](#), a molecule found inside [red blood cells](#) (RBCs). Since hemoglobin normally carries [oxygen](#) from the lungs to the [tissues](#), anemia leads to [hypoxia](#) (lack of oxygen) in organs. Since all human cells depend on [oxygen](#) for survival, varying degrees of anemia can have a wide range of clinical consequences. Anemia is also caused by a lack of iron in the body.

It would, therefore, be logical to evaluate children suffering from Autism Spectrum Disorders, or with cognitive skill deficit for iron deficiency anemia. And in fact, the literature supports this. Below are two articles in the scientific literature speaking about this topic.

1: Autism. 2002 Mar;6(1):103-14

Iron deficiency in autism and Asperger syndrome

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This research considers the prevalence of iron deficiency in children with autism and Asperger syndrome and examines whether this will influence guidelines and treatment. Retrospective analysis of the full blood count and, as far as available, serum ferritin measurements of 96 children (52 with autism and 44 with Asperger syndrome) was undertaken. Six of the autistic group were shown to have iron deficiency anaemia and, of the 23 autistic children who had serum ferritin measured, 12 were iron deficient. Only two of the Asperger group had iron deficiency anaemia and, of the 22 children who had their serum ferritin measured, only three were iron deficient. Iron deficiency, with or without anaemia, can impair cognition and affect and is associated with developmental slowing in infants and mood changes and poor concentration in children. This study showed a very high prevalence of iron deficiency in children with autism, which could potentially compromise further their communication and behavioural impairments.

1.Food Nutr Bull. 2003 Dec;24(4 Suppl):S104-10

Effect of iron-deficiency anemia on cognitive skills and neuromaturation in infancy and childhood.

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Iron-deficiency anemia in infancy has been consistently shown to negatively influence performance in tests of psychomotor development. In most studies of short-term follow-up, lower scores did not improve with iron therapy, despite complete hematologic replenishment. The negative impact on psychomotor

development of iron-deficiency anemia (IDA) in infancy has been well documented in more than a dozen studies during the last two decades. Two studies will be presented here to further support this assertion. Additionally, we will present some data referring to longer follow-up at 5 and 10 years as well as data concerning recent descriptions of the neurologic derangements that may underlie these behavioral effects. To evaluate whether these deficits may revert after long-term observation, a cohort of infants was re-evaluated at 5 and 10 years of age. Two studies have examined children aged 5 years who had anemia as infants using comparable tools of cognitive development showing persisting and consistent important disadvantages in those who were formerly anemic. These tests were better predictors of future achievement than psychomotor scores. These children were again examined at 10 years and showed lower school achievement and poorer fine-hand movements. Studies of neurologic maturation in a new cohort of infants aged 6 months included auditory brain stem responses and naptime 18-lead sleep studies. The central conduction time of the auditory brain stem responses was slower at 6, 12, and 18 months and at 4 years, despite iron therapy beginning at 6 months. During the sleep-wakefulness cycle, heart-rate variability--a developmental expression of the autonomic nervous system--was less mature in anemic infants. The proposed mechanisms are altered auditory-nerve and vagal-nerve myelination, respectively, as iron is required for normal myelin synthesis.

It's important to always be as specific as possible to treatment for these children. Specificity answers the question as to why Johnnie improved with iron supplements but Tommy did not. Testing for iron deficiency anemia is simple and inexpensive. Don't just put your child on Iron without evaluating him first. Specificity yield the best results and efficient use of resources.

Dr. Mane offers one on one consultation as well as Group Seminars for parents and children who suffer from Autism Spectrum Disorders. If you are interested in scheduling a consultation or to attend a seminar please call 813-935-4744.

For more information about Dr. Nelson Mane, D.C. and his treatment approach for ASD go to <http://www.manecenter.com/ADHD.htm>.