

## **Autism and Brain Injury**

The case for associating autism with brain injury has been clearly established since the late 50's and early 60's in spite of protestations from some sources that the cause of autism is not clear to them.

The association of brain injury to pregnancy and birth difficulties, whilst it was first suggested in the late 50's and early 60's, is now being advocated from sources worldwide.

What is not clear however, is the reason for increases in the numbers of diagnoses of conditions relating to brain injury over the last decade. Clearly recognition that children originally labeled as "slow" or "backward" in earlier times or "schizophrenic" in the early 1900's, were brain injured, has contributed to a growth of diagnosis with today's terminology, but does not fully explain the total rise in the incidence of brain injury worldwide.

Until clear unequivocal investigation is undertaken which reaches an unquestionable conclusion, then discussion on cause and effect remains exactly that "discussion".

The direction of any such far reaching investigation has to lie in, the correlation of, examining data relating to pregnancy of the mother in terms of recorded adverse incidents during pregnancy, recorded adverse incidents during the birth procedure, and recorded adverse incidences in early childhood against reported outcomes recorded after an 18 month to 2/3 year period.

The author after many years of contact with families having two or more children affected with outcomes due to brain injury, suggests that environmental conditions have led the mother to give birth to children subsequently diagnosed with a neurological problem.

Anecdotal evidence from the mother suggests that in every case an incident occurred during the pregnancy and birth procedure. At first sight this could lead to a judgement that genetics plays a major role. This could very well be the case, and ultimately with progress in the field of genetics, this situation could be an unequivocal fact. However current investigation has identified 10 genes in autistic children, which may be pertinent to their condition, out of 30-40,000 genes in the human genome. Whilst this is a significant finding, this research still remains in its infancy.

The author suggests that environmental conditions may play a more significant part in the final outcome.

Infective diseases may lead to brain pathology with symptoms that would lead to a diagnosis of autism, some diseases alter the composition of neurons leading to death, others alter the functioning of the neuron coding.

Neurons, collectively, form the brain whose function it is to enable interaction with the outside world, since it is able to receive stimuli, process, memorise them, and to react. The central nervous system is based on the organisation of neurons and the distribution of their axons and dendra forming nerve networks. In the development stage, each neuron makes its network following a plan, the genetic factor, but each neuron reacts to external stimuli, the environmental factor, to create each specific network. This means that the development of the brain is not entirely dictated by the genes of individual neurons, but is influenced by environmental or epigenic factors, and this is increasingly true the more complex the organism involved. In human beings genes provide the basic circuitry but only external stimuli can form neuron maps. Where neuron maps are disorganised due to receipt by the neurons of disorganised stimuli, sensory inputs, then output is affected. It is the affected output presented by the individual that gives rise to the diagnosis of autism, dyslexia and any other condition.

Earlier authors have reported that, illness in pregnancy, ingestion of toxic substances during pregnancy, and malnutrition play their part in leading to the need for intervention in the birth procedure, i.e. assisted birth using mechanical devices and the need for emergency caesarian section. The rise of elective caesarian section is also giving cause for concern.

The contraction of viral and bacterial infections in pregnancy due to an insufficient immune system and infection fighting cells, is a possibility and in some health systems mothers are tested during pregnancy for this possibility. Antibiotics are given to the mother to safe guard against infection where reduced immunity is identified.

An interesting piece of research was announced at a recent International autism convention in Boston by Professor Judy Van de Water, Associate Professor in the Division of Rheumatology/Allergy at University of California, Davis. After conduction investigations on the immune systems of autistic children, with non-autistic children as controls, found lower levels of immune signaling proteins called cytokines in the blood of the autistic children than in the control group.

Ingestion of toxic substances is to be discouraged, as well as encouragement for a healthy diet, and supplementation with appropriate minerals and vitamins.

Earlier in this piece, I alluded to authors expressing lack of knowledge as to origins of autism, and I am minded to having read a number of published reports on investigations to disprove the connection between vaccinations and the onset of autism. One such author expressed his view as to be unaware of the causes of autism. I am also aware of the fact having read the reports, that I was unable to find anywhere in the text that the researchers had not discarded that cohort of investigated individuals, that inevitably had been brain injured during pregnancy and birth procedures.

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