

Comment on the IACC draft strategic plan NOT-MH-08-021

Eileen Nicole Simon, PhD, RN

11 Hayes Avenue, Lexington MA 02420-3521, phone 1-617-512-0424

eileen@conradsimon.org

Introduction

Auditory system impairment should be added to the core clinical characteristics of children with autism, especially as an impediment to language development. Evidence of disturbed auditory function in children with autism has been provided by many research studies. The inferior colliculi (in the midbrain auditory system) have higher blood flow and metabolism than any other area of the brain and are vulnerable to any factor that disrupts aerobic metabolism, including toxic substances like mercury and lead [1]. Research on auditory problems should be prominently sought in the IACC plan, and research on oxygen insufficiency at birth should be a focus for some of the following reasons:

- (1) Prominent lesions of the inferior colliculi were part of a pattern of symmetric damage within the brainstem caused by six or more minutes of total oxygen deprivation at birth in experiments with monkeys [1].
- (2) Loss of the ability to comprehend spoken language following injury of the inferior colliculi has been described in several case reports [1, 2]. How much more serious impairment of function of the inferior colliculi should be for an infant [3].
- (3) Brain maturation did not follow a normal course in monkeys subjected to asphyxia at birth, and many of the areas of the brain that did not develop normally correspond to brain regions now found in fMRI scans reported to represent under-connectivity [1].
- (4) Monkeys subjected to asphyxia at birth displayed initial lack of motor control from which they appeared to recover. Poor manual dexterity remained into adulthood [1].

Vision: The plan needs to seek understanding of the increased prevalence of autism.

Mission: The mission must include measures to identify preventable environmental hazards.

Core values: Collaboration should include discussion of written comments submitted for IACC meetings. Obstetric complications are associated with development of autism and effects of birth injury must not be ignored [1, 3, 4, 5].

Cross-cutting themes: The final common pathway in the brain affected by all etiological factors (genetic and environmental) associated with autism should be looked for [1].

The following comments are based on my suggestion that umbilical cord clamping within seconds following birth should be investigated as cause of the increased prevalence of autism during the past 20-25 years, <http://www.conradsimon.org/IACCjuly15summary.pdf> :

I: When Should I Be Concerned?

Was your baby crying (or breathing) before the umbilical cord was clamped?

II: How Can I Understand What Is Happening?

Language is learned “by ear” and may be difficult for a child with any impairment of the auditory system.

III: What Caused This To Happen And Can This Be Prevented?

Prospective parents should refuse umbilical cord blood banking, and they must insist that a birthing plan be adhered to that includes waiting for pulsations in the umbilical cord to cease

before clamping. Plans should be made in advance for resuscitation with the umbilical cord attached.

IV: Which Treatments And Interventions Will Help?

Efforts to help a child hear the boundaries between syllables and words may be helpful [1]. Children with Kanner autism often learn to read early, which may represent a strategy taken by the child to hear syllable and word boundaries. This was the case with my own first-born son, whose first diagnosis was “mild” cerebral palsy.

V: Where Can I Turn For Services?

Long-term care insurance is more important than universal health care insurance. An effort must be made to make long-term care insurance mandatory for every child born [1].

VI: What Does The Future Hold?

The current protocol for clamping the umbilical cord immediately at birth is a clear medical error. The obstetric profession is beginning to recognize this, but the obstetric clamp ought to be scrapped. Statistics for “respiratory depression” at birth are similar to those for autism. Respiratory depression at birth implies oxygen insufficiency at birth with risk of auditory system impairment.

Development Process for the IACC Strategic Plan for Autism Spectrum Disorder Research

Since the Autism Summit in 2003, I have tried to urge investigation of oxygen insufficiency at birth as a possible cause of auditory and language problems in many cases of autism. I submitted comments for both the May and July meetings of the IACC this year, but see nothing in the draft strategic plan that addresses complications at birth.

Is there any way that well-educated parents might have a chance for greater participation in the focus of research for the IACC? My research into developmental language disorder began 44 years ago, when my 2-year-old son who had been diagnosed with “mild” cerebral palsy was severely dysarthric. Three years later his younger brother, Conrad, was diagnosed as autistic, and he was a classic case of Kanner autism with fluent echolalic speech and excellent pronunciation. Conrad needed to be resuscitated at birth, which is why my focus has been on brain impairments resulting from oxygen insufficiency.

References

1. Simon EN (2000-2008) <http://www.conradsimon.org/>
2. Pan CL, Kuo MF, Hsieh ST. Auditory agnosia caused by a tectal germinoma. *Neurology*. 2004 Dec 28;63(12):2387-9.
3. Simon EN. Auditory agnosia caused by a tectal germinoma. *Neurology*. 2005 Jul 26;65(2):339 [letter]; author reply 339. Online at <http://www.neurology.org/cgi/eletters/63/12/2387>
4. Cederlund M, Gillberg C. One hundred males with Asperger syndrome: a clinical study of background and associated factors. *Dev Med Child Neurol*. 2004 Oct;46(10):652-60.
5. Glasson EJ, Bower C, Petterson B, de Klerk N, Chaney G, Hallmayer JF. Perinatal factors and the development of autism: a population study. *Arch Gen Psychiatry*. 2004 Jun;61(6):618-27.