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### Recognizing FASD-Related Speech and Language Deficits in Internationally Adopted Children

BY TATYANA ELLESEFF

**F**etal Alcohol Spectrum Disorder (FASD) is a syndrome that causes great controversy. Rather than a clinical diagnosis, it is an umbrella term for the range of neurological, cognitive, developmental, behavioral, communicative, and social deficits that can occur due to maternal alcohol consumption during pregnancy. A child with alcohol-related deficits will not receive a diagnosis of FASD, but rather will be diagnosed with one of the following: Fetal Alcohol Syndrome (FAS), Partial Fetal Alcohol Syndrome (pFAS), Alcohol Related Neurodevelopmental Disorders (ARND), Static Encephalopathy (SE), or Neurobehavioral Disorder (ND).

While it is recognized that alcohol-related disorders can cause a wide array of birth defects, the exact statistics on FASD as well as exact diagnostic criteria is a source of great debate among a variety of medical professionals. Unlike a number of other syndromes (such as Fragile X, Prader Willi, Angelman, etc.), presently no objective measures – such as blood tests or tissue analysis – exist to reliably diagnose alcohol-related deficits. To make a diagnosis, medical professionals primarily rely on observations: a pattern of growth deficits; central nervous system abnormalities; craniofacial malformations. Physicians also rely on records documenting maternal alcohol abuse during pregnancy and/or around the time of conception.<sup>1</sup>

<sup>1</sup> Stratton, Howe, & Battaglia, 1996.



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With respect to statistical data, it is conservatively estimated that 1% of U.S. children are affected by FAS.<sup>2</sup> However, the occurrence of FAS among internationally adopted children, especially those adopted from Eastern European countries, is estimated to be staggeringly higher.<sup>3</sup>

Further contributing to the public and professional confusion about FAS are various myths regarding its detection, such as the belief that FAS will be obvious as soon as the child is born, or that FAS is only present if there are clearly affected facial features. In fact, the specific facial features considered by many to be key diagnostic identifiers of FAS – e.g., features related to the shape of the eyes, ears, and lips; including short palpebral fissures, thin upper lip, and smooth philtrum – are only minor and inconsequential medical abnormalities which occur infrequently in children with alcohol-related deficits, and tend to change in appearance due to age-related structural skeletal changes.<sup>4</sup> Consequently, according to current research, ARND, SE, and ND are far more prevalent but no less severe than diagnoses of FAS or pFAS.<sup>5</sup>

Despite all the available research, very limited information exists for parents and professionals regarding how alcohol-related speech and language deficits manifest in children. This article will provide an overview of how prenatal alcohol exposure affects social, communicative, and cognitive development. It will explain by whom alcohol-related deficits are diagnosed as well as which professionals can help create a comprehensive remediation plan for a child diagnosed with them. Finally, it will discuss how assessment and treatment approaches for alcohol-related deficits can improve a child's optimum capacity for functioning in academic and social settings.

## Effects of Alcohol on Brain and Speech Development

To begin, it is important to understand the impact of alcohol on developing brain structure and chemistry. Alcohol is a teratogen, or a substance which can potentially cause structural and functional congenital malformations. Exposure to alcohol in utero can significantly change brain formation, alter cortex development, disrupt neuronal quantity and pathways, and affect the production of neurotransmitters.<sup>6</sup>

<sup>2</sup> May & Gossage, 2001.

<sup>3</sup> Landgren et al., 2010; Miller et al., 2006.

<sup>4</sup> Astley et al., 1999.

<sup>5</sup> <http://depts.washington.edu/fasdprn/htmls/fasd-fas.htm>

<sup>6</sup> Shore, 1997.

Researchers have identified a number of brain differences in individuals with alcohol related deficits, including: thin/absent corpus callosum, change in fibers/reduction in cells of the hippocampus, reduction in volume or the frontal lobe, the basal ganglia, and the cerebellum as well as many other changes. These differences result in the following respective functional alterations: language and memory deficits;<sup>7</sup> increased risk for chronic stress, anxiety, and depression;<sup>8</sup> motor planning and control deficits;<sup>9</sup> and executive function deficits.<sup>10, 11</sup>

In addition to affecting the brain and other vital organs such as heart, eyes, etc., alcohol-induced malformations may also structurally affect various speech and language mechanisms<sup>12</sup> and may cause cleft palate,<sup>13</sup> velopharyngeal insufficiency (nasal voice), or ear malformations that can increase the risk of conductive (fluid in the ear) or sensorineural (cranial nerve damage) hearing loss.<sup>14</sup> Other structural anomalies, such as undersized jaw (micrognathia), can cause teeth misalignment or malocclusions and affect speech production.<sup>15</sup>

With respect to early development, many infants with FAS are born with low weight and show poor growth in utero and after birth.<sup>16</sup> A large number will present with delayed developmental milestones, decreased muscle tone, and poor muscle coordination. Other issues often include failure to thrive, feeding and/or swallowing deficits, poor self regulation (e.g., increased levels of irritability; excessive crying), sleeping difficulties, increased sensitivity to sensory stimuli (e.g., hypersensitivity to light/sound), strong startle reflex, seizures and tremors, and attachment and bonding issues.<sup>17</sup>

One of the more prominent deficits in children with alcohol-related deficits is delayed and impaired language ability. In early childhood, language impairment typically manifests via delayed language

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<sup>7</sup> Guerri et al., 2009; Mattson, S.N. et al, 1994; Riley et al., 2004.

<sup>8</sup> Berman & Hannigan 2000; Guerri et al., 2009; Norman et al., 2009.

<sup>9</sup> Riley, McGee, & Sowell, 2004.

<sup>10</sup> Spadoni et al., 2007; Teicher et al., 2002.

<sup>11</sup> Executive Functions (EF) are higher level cognitive processes involved in inhibition of thought, action and emotion. They include self-regulation, task initiation, task organization and planning, cognitive flexibility, working memory and recall.

<sup>12</sup> Stromland & Pinazo-Duran, 2001; Stromland, 2004.

<sup>13</sup> Munger et al., 1998.

<sup>14</sup> Church & Gerkin, 1988; Church & Kaltenbach, 1997.

<sup>15</sup> Church et al., 1997; Jackson & Hussain, 1990.

<sup>16</sup> Abel & Sokol, 1987.

<sup>17</sup> Carmichael Olson, H. et al., 2007; Carmichael Olson, H. & Montaque, R., 2011.

<sup>18</sup> Mattson & Riley, 1998.

development and/or impaired language acquisition (e.g., delayed onset of babbling; delayed age of first words production and/or word combinations, etc.), which in some percentage of cases may be secondary to decreased/impaired cognitive functioning.<sup>18</sup> As these children grow older, they experience slower and inconsistent language gains compared with unaffected children. Early developmental patterns, such as poor feeding skills and low muscle tone, also leads many children with alcohol-related deficits to struggle with speech production and articulation (e.g., poor pronunciation, etc).

Depending on the type and severity of alcohol-related nervous system damage (central and/or peripheral), language impairment may be evident across all domains (e.g., comprehension, expression, memory, etc.) or affect select few areas (e.g., verbal reasoning, social interactions, etc.). Alcohol-related language deficits often include reduced and immature vocabulary (understanding words as well as using words in sentences), reduced grammar skills, short sentence length, limited conversational skills, difficulty with word usage (such as an inability to make antonyms, synonyms, associations, etc.), difficulty with understanding abstract language (inability to comprehend idioms; words with multiple meanings), and immature storytelling abilities.

As these children reach preschool age, their language impairments become more apparent and parents begin to note memory, attention, and information processing deficits in addition to impaired expressive language abilities. Additional motor, cognitive, behavioral, and social-emotional warning signs begin to emerge, which may include but are not limited to: sensory integration deficits, excessive tantrums and emotional reactivity, hyperactivity, poor impulse control, and diminished judgment (e.g., child is too friendly with strangers).<sup>19</sup>

During school years, many children with FASD display impairments in the areas of reading, writing, and mathematics, and are subsequently diagnosed with learning disabilities. As they get older, significant challenges may also be noted in the other areas, such as problem-solving, social/emotional, and executive functioning.<sup>20</sup>

## Diagnosis and Remediation: Multidisciplinary Approach

For accurate and comprehensive diagnosis, it is very important that this condition be diagnosed by a multidisciplinary team, especially because

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<sup>19</sup> Carmichael Olson, H. et al., 2007; Carmichael Olson, H. & Montaque, R., 2011; Mattson & Riley, 1998.

<sup>20</sup> Coggins et al., 2003; Olswang, Coggins, & Timler, 2001; Timler, Olswang, & Coggins, 2005.

the subsequent management involves implementing and following through on the appropriate recommendations of various team members – including a physician, psychologist, a speech language pathologist, and an occupational therapist.<sup>21</sup>

The initial team member responsible for making the medical diagnosis is a physician, preferably one who specializes in working with medical issues common to internationally adopted children and is trained in FAS detection. The next team member is the psychologist, who can create a profile of the child's deficits in the areas of cognitive, behavioral, and socio-emotional functioning and make recommendations regarding remediation strategies. In a vast majority of cases, it is also necessary to refer the child to a speech language pathologist (SLP) and an occupational therapist (OT) in order to understand and address the full extent of their deficits. The speech language pathologist will assess and document the child's speech/language challenges, while the occupational therapist will be able to assess his or her adaptive functioning, fine and gross motor skills, and sensory integration.

Due to the controversy related to this diagnosis, oftentimes an education lawyer serves as an additional team member. A lawyer's services may need to be retained in order to help the parents obtain appropriate support services within their child's school system. Finally, for older youth with FAS, it is imperative that a transitional advocate be consulted regarding the best ways of assisting and supporting them with post-school transition.

Once the diagnosis of alcohol-related deficits has been confirmed and the necessary services have been obtained, only a small number of related multidisciplinary team professionals will need to see the child on a regular, long-term basis. These professionals are typically the psychologist, the speech language therapist, and possibly the occupational therapist. They are now the primary team members responsible for a design and implementation of a comprehensive remediation plan to assist the child with successful social and academic functioning.

## Speech-Language Assessment of Children with Alcohol-Related Deficits in the Schools

According to a study published in the journal *Developmental Disabilities Research Reviews*, the prevalence of FAS among younger (e.g., 6- to 7-year-olds) school-aged children in the United States “may be as high as 2-5%.”<sup>22</sup> However, children with alcohol-related deficits tend to “slip between the

<sup>21</sup> Lang, 2006.

<sup>22</sup> May et al., 2009.

cracks” when it comes to qualifying for and receiving services.<sup>23</sup> Public school professionals commonly report lack of knowledge on FASD and do not know how to appropriately plan for affected children.<sup>24</sup> As the result these children tend to be underserved because their learning and behavioral difficulties are not always recognized and understood by educators.<sup>25</sup>

So how can we ensure that these children receive the appropriate diagnosis and services? For starters, it is important to collect detailed background information on the child, which can help determine the potential presence of alcohol related deficits.<sup>26</sup> Speech-language professionals assessing the children in question should gather all available background information, including prenatal risk factors as well as growth and developmental milestones, in order to create a behavioral and linguistic deficits profile based on caregiver and teacher reports. After determining consistency of deficits, they can then select relevant language assessment instruments based on their preliminary findings. Less cognitively demanding tests may be chosen for children with severe language deficits, while specific deficits areas (e.g., problem-solving, social skills, etc.) may be assessed in higher functioning children via targeted instruments. Based on the testing results, a comprehensive remediation plan needs to be developed to improve the child’s functioning in affected areas while accounting for behavioral and linguistic deficits.

Many children with alcohol-related disorders present with complex behavior symptoms, which include but are not limited to inattention, hyperactivity, impulsivity, anxiety, poor self-control, and social immaturity. Consequently, an effective remediation plan must also account for the child’s behavioral manifestations, with relevant modifications that may include changes in the child’s physical space, session structure, session materials, and targeted management techniques for inappropriate behaviors.<sup>27</sup> Similarly, an effective language remediation plan must identify the child’s strengths, weaknesses, and learning style(s), as well as account for “maintaining factors” – those variables that are maintaining the language disorder – which may include cognitive (e.g., intellectual disability), linguistic (e.g., word-finding problems), sensorimotor (e.g., poor hearing), and psychosocial (e.g., psychiatric diagnosis) deficits.<sup>28</sup>

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<sup>23</sup> Kjellmer & Olswang, 2013.

<sup>24</sup> Koren, Fantus, & Nulman, 2010.

<sup>25</sup> Watson & Westby, 2003.

<sup>26</sup> Elleseff, 2013

<sup>27</sup> [www.smartspeechtherapy.com/in-case-you-missed-it-how-to-successfully-address-clients-inattention-impulsivity-and-hyperactivity-in-therapy-sessions/](http://www.smartspeechtherapy.com/in-case-you-missed-it-how-to-successfully-address-clients-inattention-impulsivity-and-hyperactivity-in-therapy-sessions/)

<sup>28</sup> Klein & Moses, 1999.

Parental/caregiver education about FASD is another critical piece of the remediation plan. Not only do parents and all caregivers need to be educated on how alcohol-related deficits affect children, they must also learn how to effectively engage their child in learning at home despite these deficits.

## Conclusion

Recognizing alcohol-related speech-language deficits is the first critical step in determining the appropriate diagnosis and ultimately identifying and providing relevant services for children with these disabilities. It is important to understand that the best treatment for any child with an alcohol-related diagnosis involves a focus on functionality, as well as on building up the child's existing strengths while teaching them how to effectively compensate for their alcohol-related deficits. It is also important to understand that, depending on the severity of the child's condition, the ultimate long-term goals may not always focus solely on academic achievement, but on the best possible outcomes for independent daily functioning.

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