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# The treatment of food selectivity and other feeding problems in children with autism spectrum disorders

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#### ABSTRACT

Food selectivity and other feeding problems are endemic in children with autism spectrum disorders (ASD). Additionally, many of the challenging behaviors which fall into this category are idiosyncratic to ASD. A technology is beginning to emerge regarding methods to lessen and effectively treat these issues which, if unchecked, can result in poor nutrition and difficulties in feeding. Specificity in foods consumed, choking, and aggression associated with food refusal can put the child and caregiver at risk. This paper provides a critical review of the current status of evidence-based clinical practices for this highly important set of challenging behaviors of ASD children.

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Autism spectrum disorders (ASD) are a set of neurodevelopmental conditions characterized by social and communication deficits and repetitive and restrictive behaviors (Matson, 2007a, 2007b; Matson & Boisjoli, 2007; Matson, Nebel-Schwalm, & Matson, 2007). All of these characteristics are considered to be inherited, although a good deal of genetic variability is evident (Ronald et al., 2006; Ronald, Happé, & Plomin, 2005). Among the hallmark symptoms that these persons display are signs of inflexibility, preoccupation with sensory stimuli such as visual stimulation or routines, and a preoccupation with particular smells and textures (Cuccaro et al., 2003; Matson & Boisjoli, 2008a, 2008b; Matson & Wilkins, 2008; Szatmari et al., 2006). These unusual behaviors can be persistent and can markedly affect social skills and interactions in general (Matson, Carlisle, & Bamburg, 1998; Matson, Leblanc, & Weinheimer, 1999b; Matson & Wilkins, 2007). Attempts to redirect or stop these behaviors can lead to a variety of challenging behaviors (Dominick, Davis, Lainhart, Tager-Flusberg, & Folstein, 2007; Matson, Dixon, & Matson, 2005; Matson & Logan, 1997; Matson & Nebel-Schwalm,

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2007; Rojahn, Aman, Matson, & Mayville, 2003; Rojahn, Matson, Lott, Esbensen, & Smalls, 2001; Rojahn, Matson, Naglieri, & Mayville, 2004; Singh, Matson, Cooper, Dixon, & Sturmey, 2005).

Another set of problem behaviors related to these particular issues are restricted food intake and ritualized eating (Ahearn, Castine, Nault, & Green, 2001; Schreck, Williams, & Smith, 2004). While they constitute core symptoms of ASD (Matson et al., 2007), environmental functions may also be present (Applegate, Matson, & Cherry, 1999; Matson, Bamburg, Cherry, & Paclawskyj, 1999a; Matson, Mayville, et al., 2005; Paclawskyj, Matson, Rush, Smalls, & Vollmer, 2000). However, regardless of the cause and the potential interactions of biological and environmental factors, all of these issues require systematic evaluation if effective interventions are to be implemented.

Given recent data suggesting that ASD is one of the highest incident and most debilitating of the childhood disorders, investigation into the current state of research and analysis of additional research on the topic of feeding problems in these children would appear to be warranted. The purpose of this review is to analyze the current state of the field with respect to these issues.

#### 1. Nosology

An important setting event for the discussion of feeding problems in children with ASD is to define the problem adequately. Twachtman-Reilly, Amaral, and Zebrowski (2008) stress the unique qualities of feeding problems in these children and the modification to assessment and treatment that are required to tailor these methods to the child, thus resulting in the most effective intervention. With this point in mind, it should be noted that feeding problems are much more frequent than what is observed with other children with disabilities that have some similarities to ASD such as language impairments (Dominick et al., 2007). In fact, these atypical eating styles are so common that at one time they were considered symptomatic of ASD (Ritvo & Freeman, 1978). Rituals are very common (Schreck et al., 2004), but the difficulties that appear most frequently are in the area of food selectivity, particularly with respect to the texture of the food or type of food consumed (Field, Garland, & Williams, 2003; Williams, Dalrymple, & Neal, 2000). These data are supported by Schreck et al. (2004) who compared the eating habits of autistic and normally developing children. They found that the children with autism had significantly greater feeding problems and ate a much narrower range of foods when compared to typically developing peers, Schmitt, Heiss, and Campbell (2008) examined the 3-day food record of 20 autistic and 18 typically developing boys aged 7–10 years. These authors found that this restrictive approach to types of foods consumed was based primarily on texture, but did not affect nutritional intake. The findings of Johnson, Handen, Mayer-Costa, and Sacco (2008) further bolster the results of Schmitt et al. (2008). They reported no differences in nutritional intake between 19 young autistic children and 15 regularly developing same age matched peers. However, they did note more mealtime behavior differences in the autistic group. These results are contradicted by Keen (2008), although the latter was a review versus a direct empirical test. The author asserts that early onset feeding problems, abnormally slow growth (presumable due to poor nutrition), and ASD are linked. Thus, some disagreement regarding the role of feeding problems for these persons and their nutrition and physical development exists. What does not seem to be at issue is the potential for lifelong feeding difficulties.

#### 2. Etiology

The causes of eating problems and food selectivity are complex and often interrelated. Because of this, a considerable amount of research will be required to tease out these variables. At present, such efforts have only just begun. Having noted this, we would point out that three broad domains have been identified: comorbid psychopathology, biological variables, and environmental factors. Some tentative conclusions based on the available data are possible and will be reviewed next.

#### 2.1. Comorbid psychopathology

Zucker and colleagues have been the principles looking at this issue. These researchers are eating disorders experts (e.g., anorexia nervosa-AN), and, thus, have approached the problem from the

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