

AUTISM SPECTRUM DISORDERS: AN UPDATE ON ORAL HEALTH MANAGEMENT

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| SORT SCORE | | | |
|------------|---|---|----|
| A | B | C | NA |

SORT, Strength of Recommendation Taxonomy

| LEVEL OF EVIDENCE | | |
|-------------------|---|---|
| 1 | 2 | 3 |

See page AB for complete details regarding SORT and LEVEL OF EVIDENCE grading system

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ABSTRACT

Dental professionals caring for patients with a diagnosis of autism spectrum disorder (ASD) will need to provide oral health care based on a family-centered approach that involves a comprehensive understanding of parental concerns and preferences, as well as the unique medical management, behaviors, and needs of the individual patient.

Background

With the rising prevalence of autism spectrum disorders (ASD), oral health providers will find themselves increasingly likely to care for these patients in their daily practice. The purpose of this article is to provide a comprehensive update on the medical and oral health management of patients with autism spectrum disorders.

Methods

The authors conducted a literature review by searching for relevant articles written in English in the PubMed database pertaining to the medical and oral health management of autism, including caries status, preventive, behavioral, trauma, and restorative considerations.

Conclusions

A detailed family centered approach based on parental preferences and concerns, the patient's challenging behaviors, and related comorbidities can serve to improve the treatment planning and oral health management of dental patients with ASD.

Key words: Autism, autistic, autism spectrum disorder, Asperger's disorder, autism dental management

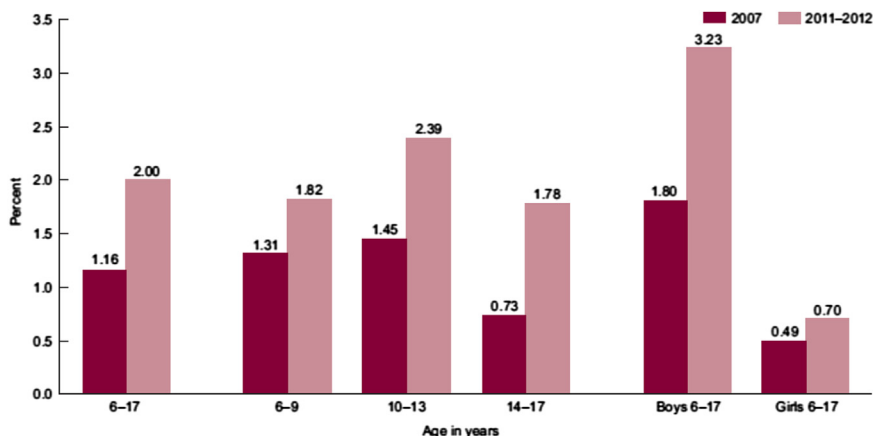
INTRODUCTION

Autism Spectrum Disorder (ASD) is the category used within the newest edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5)¹ and encompasses diagnoses such as autistic disorder, Asperger's disorder, childhood disintegrative disorder and pervasive neurodevelopmental disorder not otherwise specified. Previously these diagnoses were subsumed under the umbrella pervasive developmental disorders. Symptoms in this group of neurodevelopmental disorders can be expressed on a continuum ranging from mild to severe and, by definition, must be present from infancy or early childhood.²

PREVALENCE

While the prevalence of ASDs has risen significantly over the past decades, the ratio of affected male to females has remained between 3 and 4:1. Data from the Centers for Disease Control and Prevention's (CDC) 2009–2010 National Health Interview Survey (NHIS) estimate the prevalence based on parent report for children aged 3–17 years at 1.1%.³ That translates into approximately 1–1.5 million Americans living with

Figure 1. Derived from the National Health Statistics Reports (No. 65, March 20, 2013). This figure indicates the increase in autism prevalence by illustrating the percentage of children aged 6–17 years with parent-reported autism spectrum disorder by age group and sex in the United States, 2007 and 2011–2012.



ASD. It is not known, however, whether the steady increase seen in ASD (Figure 1) is due to heightened awareness and access to services or true increases in prevalence.

DIAGNOSTIC FEATURES

The DSM-5 reduced the diagnostic criteria from three to two areas of impairment¹: (A) persistent deficits in reciprocal social communication/interaction and (B) restricted, repetitive patterns of behavior, interests, or activities. Three severity levels further detail these deficits: 1) requiring support, 2) requiring substantial support, to 3) requiring very substantial support (Table 1). Additional specifiers are used to describe if a patient presents with or without accompanying intellectual or language impairment, a known medical or genetic condition or environmental factor, or if the condition is associated with another neurodevelopmental, mental, or behavioral disorder.

Of specific importance to dentistry is the hypersensitivity of these patients to sensory input, although hyposensitivity and indifference to pain or temperature extremes can also occur.¹ Owing to an overly sensitive nervous system, a number of individuals with ASD exhibit extreme and peculiar responses to specific sounds, light, scents, textures, or touch, all of which invariably occur as part of a dental appointment. The ensuing sensory overload can quickly lead to overstimulation and subsequent avoidance reactions. Their increased awareness of texture and smell may lead to food idiosyncrasies such as a preference for bland or particularly crunchy foods.

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Communication with individuals with ASD may be complicated by language deficits, poor comprehension of speech, or difficulties reading social cues. Additional features of ASD

include stereotyped or repetitive motor behaviors (hand flapping, rocking back and forth), repetitive use of objects (spinning coins, lining up objects), or repetitive speech. Many such patients insist on sameness, adhere to strict routines in their lives, and may have a more rigid thinking pattern. They will react adversely to even minor changes or transitions that occur as part of one's life.¹

CAUSES

No specific etiology has been identified to date, but evidence points to a combination of genetics and pre- and postnatal environmental factors such as parental age, maternal infections during pregnancy, and low birth weight.⁴ Evidence based research has ruled out vaccines as causes of ASDs and has concluded that general peri- and neonatal events increase the risk.⁵ It is known that environmental factors such as nutrition, psychotropic drugs, maternal autoimmune disease, maternal viral infection during the 1st trimester of pregnancy, or psychological stress can cause epigenetic modifications leading to neurodevelopmental diseases including ASD.⁶ It has also been suggested that focal brain inflammation caused by a breakdown of the blood-brain-barrier could adversely affect neurodevelopment.⁷

SCREENING AND DIAGNOSIS

In the United States pediatricians screen for ASD at the 18 and 24–30-month visits.⁸ Although no specific signs have been identified, lack of eye contact, poor response to name, or a marked regression in language skills or social behaviors, often during the first 2 years of life, warrant concern.⁹ The diagnosis is made by integrating information from various sources: thorough history taking, caregiver interviews, structured patient observation, and a detailed medical and neurological examination to rule out associated medical and

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