Oral Health Fact Sheet for Dental Professionals

Adults with Autism Spectrum Disorder

Autistic disorder is the abnormal or impaired development in social interaction and communication coupled with a restricted repertoire of activity and interest. Manifestations of the disorder vary depending on the developmental level and chronological age of the individual. (ICD 9 Code 299.0)

Autism is one diagnosis on the Autism Spectrum Disorder (ASD), which includes:

- Autistic Disorder (also called "classic" autism)
- Pervasive Developmental Delay (PDD) – Not Otherwise Specified
- Aspergers Syndrome

Prevalence

- 1/80 – 1/240, with an average of 1/100. 4-5:1 males
- 41%, on average, have an Intellectual Disability (IQ < 70)
- Unrelated to race, socioeconomic status (SES), education

*There is no medical or genetic test for Autism. Diagnosis is solely on clinical diagnostic testing.

The manifestations below are relevant for individuals with classic autism:

Manifestations

Clinical

Impairment in social reciprocity

- inability to read and comprehend the feelings, experiences, and motives of others

Impaired communication skills

- delayed language development, echolalia (repeating words), trouble using and understanding gestures, body language, and tone of voice

Atypical behavior

- repetitive motions, strict adherence to routines, attachment to unusual objects, stereotypical movements, self-injurious behaviors
- may include hyperactivity, short attention span, impulsivity, aggressiveness, temper tantrums, and unusual responses to sensory input

Oral

- Bruxism (20 –25%)
- Non-nutritive chewing
- Tongue thrusting
- Self-injury (picking at gingiva, biting lips) creating ulcerations
- Erosion (many caregivers report regurgitation; medical consult may be indicated)
- Caries – similar to general population. Encourage healthy diet and low sugar intake or sugar-free substitution due to dietary and oral hygiene limitations, if present.
- Poor oral hygiene since home care measures are exceedingly difficult for many individuals.
- Many individuals with autism have very limited dietary preferences (exclusively pureed foods, no fruits/vegetables, etc.)

Other Potential Disorders/Concerns

- Epilepsy
- Depression/Anxiety
- Attention Deficit Hyperactivity Disorder (ADHD)
- Obsessive Compulsive Disorder (OCD)
- Schizophrenia

Management

Medication

- Many individuals with autism are medically healthy and take few medications.
- Many individuals with autism take vitamins, herbal, and mineral supplements.
- Medications are prescribed based on symptoms and can produce several side effects.

The list of medications below are intended to serve only as a guide to facilitate the dental professional's understanding of medications that can be used for Autism or conditions associated with Autism. Medical protocols can vary for individuals with Autism from none to multiple medications.

SYMPTOM	MEDICATION	SIDE EFFECTS
Hyperactivity, Inattention, and Impulsivity	**Stimulants**	
	Amphetamine and dextroamphetamine (Adderall, Dexedrine, Dextrostat)	Xerostomia, increase in heart rate and blood pressure, dysgeusia, bruxism, motor tics, dyskinesias.
	Methylphenidate, dexmethylphenidate (Ritalin, Concerta, Focalin)	Xerostomia, increase in heart rate and blood pressure, erythema multiforme, motor tics, dyskinesias.
	Non Stimulants	
	*Atomoxetine (*Strattera)	Xerostomia, increase in heart rate and blood pressure.
	Antihypertensive	
	Clonidine (Catapres) *Guanfacine (*Tenex, Intuniv)	Xerostomia, dysphagia, sialadenitis, dysgeusia.
Hyperactivity, Inattention, and Repetitive Behaviors	**Atypical antidepressants**	
	B*upriopion* (Wellbutrin)	Xerostomia, dysgeusia, stomatitis, gingivitis, glossitis, bruxism, dysphagia, angioedema. Suicidal risk through age 24. Corticosteroids may increase risk of CNS stimulating seizures.
	TCAs (Tricyclic Antidepressants)	
	Amitriptyline (Elavil) *Desipramine* (Norpramin) *Imipramine* (Tofranill)	Xerostomia, dysgeusia, stomatitis, sialadentitis, tongue edema, discolored tongue. Suicidal risk through age 24. Local anesthetics with epinephrine may cause severe prolonged hypertension – use with extreme caution.
Obsessive-compulsive Disorder and/or Depression	**SSRIs (Selective Serotonin Reuptake Inhibitor)**	
	Escitalopram (Lexapro) *Fluoxetine* (Prozac), *Paraxetine* (Paxil) *Sertaline* (Zoloft)	Xerostomia, dysphagia, nausea, anxiety, dizziness, nervousness, headache**,** sweating, bruxism. Suicidal risk through age 24. Do not prescibe with MAOIs.

Adults with Autism Spectrum Disorder continued

SYMPTOM	MEDICATION	SIDE EFFECTS
Obsessive-compulsive Disorder and/or Depression *continued*	**SNRIs (Serotonin-Norepinephrine Reuptake Inhibitor)**	
	Duloxetine (Cymbalta) *Venlafaxine* (Effexor, Effexor XR)	Xerostomia, dysphagia, nausea, anxiety, dizziness, nervousness, headache, sweating, bruxism. Suicidal risk through age 24. Do not prescibe with MAOIs.
	Atypical antidepressants	
	Bupriopion (Wellbutrin)	Xerostomia, dysgeusia, stomatitis, gingivitis, glossitis, bruxism, dysphagia, angioedema. Suicidal risk through age 24. Corticosteroids may increase risk of CNS stimulating seizures.
	TCAs (Tricyclic Antidepressants)	
	Amitriptyline (Elavil) *Desipramine* (Norpramin) *Imipramine* (Tofranil)	Xerostomia, dysgeusia, stomatitis, sialadentitis, tongue edema, discolored tongue. Suicidal risk through age 24. Local anesthetics with epinephrine may cause severe prolonged hypertension, use with caution.
Aggressive Behaviors	**Anti-psychotics**	
	Olanzapine (Zyprexa) *Risperidone* (Risperdal) *Paliperidone* (Invega)	Xerostomia, sialorrhea, dysphagia, dysgeusia, stomatitis, gingivitis, tongue edema, glossitis, discolored tongue, dyskinesia, dystonia, angioedema.
	Anticonvulsants	
	Carbanazepine (Tegretol)	Xerostomia, stomatitis, glossitis, dysgeusia, bone marrow suppression. Excessive bleeding may result when combined with aspirin or NSAIDs.
	Valproate (Depakote, Depakene)	Xerostomia, stomatitis, glossitis, dysgeusia, oral petechia. Excessive bleeding may result when combined with aspirin or NSAIDs.
	Lamotrigine (Lamictal)	Angioedema of mouth, lips, tongue, or face; oral lesions, xerostomia, nausea, headache, blurred vision, double vision, Stevens-Johnson syndrome (uncommon, severe).
Seizures	**Anticonvulsants**	
	Carbanazepine (Tegretol)	Xerostomia, stomatitis, glossitis, dysgeusia, bone marrow suppression. Excessive bleeding may result when combined with aspirin or NSAIDs.

Adults with Autism Spectrum Disorder continued

SYMPTOM	MEDICATION	SIDE EFFECTS
Seizures *continued*	*Valproate* (Depakote, Depakene)	Xerostomia, stomatitis, glossitis, dysgeusia, oral petechia. Excessive bleeding may result when combined with aspirin or NSAIDs.
	Phenytoin (Dilantin)	Xerostomia, gingival hyperplasia.
	Gabapentin (Neurontin)	Xerostomia, fever, mood changes, erythema multiforme, kidney failure, thrombocytopenia, viral infections, hyperkinesia, other neurologic symptoms.
	Levetiracetam (Keppra)	Hostility, irritability, mood changes, depression, anorexia, infection, gingivitis.
	Lamotrigine (Lamictal)	Angioedema of mouth, lips, tongue or face; oral lesions, xerostomia, nausea, headache, blurred vision, double vision, Stevens-Johnson syndrome (uncommon, severe).
	Muscle relaxants and antispasmodics	
	Baclofen (Lioresal)	Xerostomia (uncommon), angioedema of mouth, lips, tongue, or face.
	Diazepam (Valium)	Drowsiness, dystonia, double vision, xerostomia or hypersalivation, seizures, CNS and respiratory depression, paradoxical CNS stimulation, tiredness, syncope, fatigue, ataxia, depression, headache, nausea. Alcohol, and drugs that cause sedation, may increase the sedative effect of diazepam. Use with caution for persons with sleep apnea.
	Dantrolene sodium (Dantrium)	Drowsiness (alcohol can increase this effect), weakness, dizziness, tachycardia (increased heart rate), abnormal blood pressure, diarrhea, constipation, liver failure. Use caution in combining with drugs that cause CNS depression.
	Tizanidine (Zanalex, Sirdalud)	Drowsiness (alcohol can increase this effect), xerostomia, dizziness, hypotension, weakness, somnolence. Do not prescribe with ciprofloxacin or fluvoxamine. Fluoroquinolone antibiotics such as floxcin and norfloxacin interfere with tizanidine metabolism. Use caution in combining with drugs that cause CNS depression.

Behavioral: Difficulty cooperating in the dental chair and adhering to oral hygiene regimens

Guidance:

Before any dental care:

- Determine patient history of dental experiences. Discuss with patient (or caregiver) approaches that may lead to a more successful dental experience.
- Plan a desensitization appointment to help the individual become familiar with your office and staff, if appropriate.
- Talk to patient (or caregiver) about patient's tolerance to physical contact. Determine the patient's level of intellectual and cognitive abilities.
- Determine if additional patient management strategies may be required.

During appointment:

- Speak directly in clear, concrete terms.
- Start the oral examination slowly, gauging patient comfort level. Use of a toothbrush to start the exam may be advised, and then to a mouth mirror. If tolerated, continue introducing experiences slowly.
- Keep dental instruments out of sight and keep light out of the patient's eyes. Reduce other sensory input, such as sounds and odors that may be distracting to the patient.
- Avoid interruptions and have as few staff as needed in operatory.
- Give positive verbal reinforcement. Ignore inappropriate behavior as possible.
- Observe unusual body movements and anticipate future movements. Keep area around the dental chair clear.
- Immobilization techniques may be used only with consent to keep the patient from potential injury. Choose the least restrictive method that will allow delivery of care safely.
- Use the same staff, dental operatory, and appointment time each visit if appropriate and possible.
- Ask patient or caregiver for medication updates at each appointment. Medication changes can affect the appropriate care of the patient from a medical and/or appointment management standpoint.
- Sedation may be used with appropriate precautions and possible physician consult.
- General anesthesia may be required for complex surgical or restorative treatment.

Follow up appointments:

- Keep subsequent appointments short and to the point.

Dental Treatment and Prevention

- Consider prescribing a mouth guard for higher functioning individuals with severe bruxism or self-injurious behavior.
- Powered toothbrushes may be too stimulating for some adults and should be recommended only after determining if the adult will tolerate one.
- Seizure management during treatment: **Remove** all dental instruments from the mouth. **Clear** the area around the dental chair. **Stay** with the patient and turn to one side. **Monitor** airway to reduce risk of aspiration. **Note time** seizure begins: if seizure continues >3 mins call **EMS** – there is danger of Status Epilepticus (potentially life threatening).
- As needed for patients with xerostomia:
  - Educate on proper oral hygiene (brushing, flossing) and nutrition.
  - Recommend brushing teeth with a fluoride containing dentifrice before bedtime. After brushing, apply neutral 1.1% fluoride gel (e.g., Prevident 5000 gel) in trays or by brush for 2 minutes. Instruct patient to spit out excess gel and NOT to rinse with water, eat or drink before going to bed.
  - Recommend xylitol mints, lozenges, and/or gum to stimulate saliva production and caries resistance.

Look for signs of physical abuse during the examination. Note findings in chart and report any suspected abuse to 1-866-ENDHARM (www.dshs.wa.gov/endharm.shtml) as required by law. Abuse is more common in people with developmental disabilities and often manifests in oral trauma.

Additional information: Special Needs Fact Sheets for Providers and Caregivers

Below are references and resources which, although some are labeled for children, are very helpful for reviewing implications in adults. Autism manifests early with lifelong implications impacting the delivery of dental care.

References

- Green, D., Flanagan, D. (2008) Understanding the autistic dental patient. Gen Dent, 56(2): 167–71.
- Friedlander, A.H., Yagiela, J.A., Paterno, V.I., Mahler, M.E. (2006) The neuropathology, medical management and dental implications of autism. J Am Dent Assoc, 137: 1517–1527.
- Loo, C., Graham, R., Hughes, C. (2008) The caries experience and behavior of dental patients with autism spectrum disorder. J Am Dent Assoc, 139: 1518–1524.
- Ming, X., Brimacombe, M., Chaaban, J., Zimmerman-Bier, B., Wagner, G. C. (2008) Autism Spectrum Disorders: Concurrent Clinical Disorders. Journal of Child Neurology 23: 6–13.
- Autism and CDC
- NIH Institute for Autism Spectrum Disorders

Additional Resources

- Autism and CDC
- NIH Institute for Autism Spectrum Disorders
- MCH Resource Center
- ASTDD-Special Needs
- Block Oral Disease, MA
- Free of charge CDE course: NIDCR CDE (2 CDE hours)

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