



the Child Dental Patient with

Autism spectrum disorders (ASD)



Definition

- Autism spectrum disorders include a wide range of disorders - like autism, Asperger's syndrome, childhood disintegrative disorder and pervasive developmental disorder not otherwise specified.

Prevalence

- 3.3-3.6 in 10000 for Caucasians
- 16-21.1 per 10000 Japanese
- steadily increased over the past two decades
- 4x males than females

Etiology

- Both genetic and environmental factors :
 - mitochondrial defects, cytosine dysregulation, high maternally-derived intrauterine androgen concentrations
 - families with an older child suffering from ASD
 - older ages of parents
 - maternal metabolic conditions: diabetes mellitus, hypertension, obesity
 - extremely preterm babies, low birth weight

Characteristics

- delayed or inexistent verbal skills
- difficulty in developing social relationships
- inflexible adherence to rituals
- mental retardation / normal or above range intelligence (like in Asperger's syndrome)
- pervasive absorbing interest in special topics
- repetitive movements; self-stimulation (hand-flapping, rocking etc)
- developing daily routine activities
- resistance to changes

Oral health problems

- harmful behavioral problems
- dental anomalies
- difficulty in maintaining oral hygiene
- food habits (award- based behaviour management systems)
- medication



- High caries prevalence
- Gingivitis/ periodontitis

Behavioral problems

- bruxism
- tongue thrusting
- lip, tongue, cheek biting
- ulcerations
- auto-extraction of teeth
- self-mutilation

Dental anomalies

Non-specific malocclusions:

- dental crowding
- anterior open bite
- crossbite
- overjet
- tendency to Class II and III

Difficulty in maintaining oral hygiene

- mental retardation
- poor tongue coordination
- dislike of toothpaste taste
- difficulty in performing oral hygiene
- lack of the necessary manual dexterity
- prolonged food retention in the oral cavity
- difficulties of the trainers/parents in children' toothbrushing

Food habits

- preferences for soft and sweetened food
- tendency to pouch food inside the mouth
- chewing with the mouth open
- alimentary rewards used during therapies

Side effects of drugs used in ASD

- **CNS Stimulants** (Methylphenidate Dextroamphetamine, Mixed amphetaminesalts, Pemolin) – xerostomia
- **Antidepressants** (Fluoxetine, Sertraline) - xerostomia, dysphagia, sialadenitis, dysgeusia, stomatitis, gingivitis, glossitis, discolored tongue, bruxism
- **Antihypertensive** (Clonidine) - xerostomia, dysphagia, sialadenitis

Side effects of drugs used in ASD (2)

- **Anticonvulsants** (Carbamazepine, Valproate) - xerostomia, stomatitis, glossitis, and dysgeusia.
 - Excessive bleeding if medication is combined with either aspirin or non-steroidal anti-inflammatory drugs
- **Antipsychotics** (Risperidone, Clozapine, Olanzapine, Haloperidol) - xerostomia, sialorrhea, dysphagia, dysgeusia, stomatitis, gingivitis, tongue edema, glossitis, discolored tongue.

Attention!

- Caution when prescribing narcotic analgesics to children who are on haloperidol:
 - drowsiness
 - reduced motor control
 - xerostomia

Major problems in providing dental treatment to autistic children:

Lack of co-operation

Inability to establish appropriate patient-dentist interaction

More problems...

- difficulties in controlling these children
- limited access to dental services
- lack of preventive treatment



often **emergency** treatment is sought (when patient experiences dental pain)

⇒ filling/extraction

⇒ mental association between pain/discomfort and visit to the dental office

More problems...

- Unresponsive to demonstrations
- Resistance to personal contact and communication
- 'tell-show-do' technique can't be always used (lack of social and emotional capacity)

Important for the paediatric dentist

- Experienced, empathetic, professional and appropriate dental care - ESSENTIAL
- Dental appointments schedule as not to disrupt the daily routine of the child
- Positive reinforcement; verbal praising, token rewards
- Use of pharmacological agents when needed
- Visual teaching model for improving oral hygiene
- Custom-made polymer mouthguards for reducing self-injurious behaviour

Dental health education

- information/guidance on reducing the frequency of sugary foods and drinks
- good oral hygiene (electric toothbrush may help)
- high fluoride content toothpaste
- early dental visits for advice and care → DENTAL HOME

Pharmacological management

- Nitrous oxide
- Diazepam
- Hydroxyzine
- Chloral hydrate
- Diphenhydramine



limited to moderate success rate

Dental treatment under GA

- Indications:
 - resistance to establish personal contact
 - ineffective sedation techniques/ atypical response patterns
 - high complexity dental treatment needed
 - unsuccessful behavior modification

Important for the orthodontist

” less patient-reliant, more patient-resistant “ appliances

- appliances with simple construction
- quick and comfortable movement of the teeth
- requiring minimal patient compliance