Dental Care for Children with Hearing and Visual Impairment and Autism Spectrum Disorders

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Hearing Impairment

• The ability to detect sound frequencies is partially or completely impaired

• 25-45 dB : mild

• 45-70 dB : moderate

• 70-90 dB : severe
Types

• **Conductive Hearing Impairment:**
  Problem in the middle or outer ear
  Often reversible and treatable
  Example: Chronic Ear Infection/ Perforated Ear Drum

• **Sensory-neural Hearing Impairment:**
  Problem in the Inner Ear, Cochlea, VIII cranial nerve
  May be present at birth
  It is usually permanent and can be corrected sometimes with hearing aids, cochlear implant
Incidence

• ~10% of US Population
• 5 per 1,000 children

• Deaf Culture
Etiology

- Hereditary – genes DFNA / DFNB
- Syndromes
- Trauma: Head/Ear
- Infection during pregnancy: Rubella, Syphilis, CMV
- Prematurity
- Measles, Mumps, Meningitis, HIV
- Ototoxic drugs
- Aging / Exposure to Noise
Microtia
Cochlear Implant
COCHLEAR IMPLANT:
BEFORE & AFTER...

BEFORE

HAPPY DEAF CHILD,
NORMAL ASL USING
MEMBER OF
DEAF COMMUNITY.

A cartoon from Silent News, a newspaper for the deaf based in Rochester, showing one attitude towards the hearing world.
Hearing aids

Need to be adjusted to prevent feedback from amplified sounds in dental office
Dental Considerations- How to communicate?

• Determine severity, ability to read lips / sign language

• Increased patient anxiety- Have parent/guardian in room

• Use face shield rather than mask so patient can see lips

• Speak clearly (no need to shout) and maintain eye contact

• Written communication: Text message/ email

• American Sign Language Interpreter
American Sign language (ASL): Visual, Spatial and Gestural
ASL Interpreters

• Required under Americans with Disabilities Act? NO

• Under Title III, places of public accommodation, it says there should be effective communication

• Patient requests, are you required? NO

• Act calls for “reasonable accommodation”
Interpreter services

- Look and speak to patient and not interpreter
- Interpreter is merely translating the message into another format
- Interpreter will not clarify message
- Speak slower so interpreter can keep up; use natural pauses
- Also useful for parent/guardian with hearing impairment
- Cost is covered by office
Remote Interpreters Apps
Visual Impairment - Blindness

1 20/200
2 20/100
3 20/70
4 20/50
5 20/40
6 20/30
7 20/25
8 20/20
9
10
11
Etiology

- Cataracts
- Glaucoma
- Uncorrected refractive errors
- Macular degeneration
- Diabetic retinopathy
- Childhood blindness – Vitamin A Deficiency
- Injuries: Brain/ Eye
- Anophtalmia: Congenitally missing one or two eyes
- Trachoma: Chlamydia infection of the eyes
Trachoma

Distribution of trachoma, worldwide, 2010
Anophtalmia
Co-morbidities

- Intellectual Disability
- Autism
- Cerebral Palsy
- Epilepsy
- Hearing impairment (Dual Sensory Impairment)
Dental management: *Gain trust*

- Introduce office staff and familiarize patient with their voices
- Describe office space
- Move obstacles out of patient’s path
- Guide to chair/ Offer help
- Be careful and warn patient when reclining on chair and turning light on
- Notify when leaving and re-entering room
- Background music is good distraction for blind patient
Dental Management

• Increased patient anxiety- Parental room presence

• Describe each step and procedure during visit

• Modified Tell-Show-Do technique. Use smell and touch senses

• Familiarize with sound of suction, hand piece and dental equipment

• Warn patient about not making sudden head movements

• Oral hygiene needs to be supervised by parent/caregiver
Guide Dogs: Protected by American with Disabilities Act
Walking Stick
Autism Spectrum Disorders (ASD)

- Neurodevelopmental disorders of social interaction, language, behavior and cognitive function

- Includes:
  - Autistic Disorder
  - Childhood Disintegrative Disorder
  - Asperger’s
  - PDD
Incidence

- 1: 68
- M:F is 5:1
- 5-10% genetic etiology
- Diagnosed as early as 2 years
- Familial pattern
- 40% have Intellectual Disability
- 30% have Seizure disorder
- Vaccines not associated with Autism
Red Flags

• Parents concerns/observations:

Language Delays

• No babbling or pointing by 12 months
• No single words by 16 months
• No two words spontaneous phrases by 24 months
• Often thought to be deaf- Does not respond to name
• Regression of any previous language skills

• Standard Autism Specific Screening at 18 and 24 months
Symptoms - Deficits in Social Interaction and Communication

- Avoids eye contact/does not smiles
- Don’t like to be touched
- Attached to objects rather than persons
- No pretend play/ plays alone
- Nonverbal/limited language
- Echolalia (repeats words)
- Frequent tantrums
Symptoms- Repetitive compulsive patterns of behaviors and restricted interests

- Attached to routines-sameness
- Fixed Diets- Pica
- Stereotyped repetitive motor movements: rocking, hand flapping, spinning self or objects
- Obsessive Interests
- Self Injurious Behavior- Aggression
Symptoms - Sensory aversion

- Sound
- Light
- Smell
- Taste
- Textures
- Touch
- Noise
- Movement
Symptoms - Affected motor skills and hyperactivity

• Some autistic children have poor motor skills and toe walking
Medical Management

• **Early intervention therapy:** Speech, behavioral, physical therapy, socialization, sensory integration

• **Medications for:** Aggression, Repetitive behavior, Hyperactivity, Anxiety, Seizures

• **Positive physical supports** - deep pressure calming effect
Weighed Vest
Oral Presentation

- Xerostomia
- Attrition - Bruxism
- Acid erosion - GERD
- Tooth sensitivity
- Strong gag reflex
- Dental trauma risk due to seizures and motor challenges
- Gingival overgrowth from seizure medication
- Poor oral hygiene - Gingivitis
- Traumatic ulcers - gingival defects from self injurious behavior
Self injurious behavior (SIB)
Pre-appointment inquiry about toilet training, toothbrushing, haircuts, academic achievement and language can give the dentist insight into the child’s ability to respond positively to behavior guidance techniques.
Pre-appointment interview

- Anticipated behavior
- Past Dental Visits
- Best time of day for appointment
- Patient Interests
- Bring technology or favorite toy to appointment
- Office Tour- “Practice visit”
Visual Schedule

Going to the Dentist

1. Dentist
2. Wait
3. Sit
4. Look
5. Count Teeth
6. Brush Teeth
7. Squirt Water
8. Suck Water
9. Rinse Mouth
10. Toy Prize
Social Stories- My Healthy Smile App
Dental Management

• Be patient
• Provide time
• Use sibling as model
• Start with simple procedures
• Same room/same staff
• Basic Behavior Guidance
Tell-Show-Do / Desensitization
Parental room presence/absence

Nitrous Oxide
Distraction/ Music

Positive Reinforcement
Dental Management

- Document in chart what works with patient
- Educate parents/ clarify “myths”
- Review dietary habits/ alternate rewards
- Oral Hygiene/ toothbrush supervision
- Fluoride supplementation
When To Refer?
Advanced Behavior Guidance

- Protective stabilization
- Sedation
- General Anesthesia