Providing vision examinations to patients with Autism Spectrum Disorder–
Tools and strategies to provide high quality care

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Course description:
Patients with Autism Spectrum Disorder often have unmet needs for vision care. This course will integrate information from research, an interdisciplinary clinical model, and clinical experience to describe supports and modifications for examination procedures. Case presentations and video clips will illustrate real-world applications of strategies.

Learning Objectives:
1. Identify three core characteristics of Autism Spectrum Disorder (ASD).
2. Name five vision problems commonly associated with ASD.
3. Identify five modifications to vision examination procedures to support the patient with ASD.

Outline:
I. Autism Spectrum Disorder (ASD)

A. Background
1. Autism
   a. *Definition* - a group of developmental brain disorders characterized by problems in social interaction, communication and sensory processing as well as repetitive, stereotyped behaviors
   b. Symptoms usually start before age 3 yrs; vary greatly
   c. Prevalence – averaging 1 out of 110 children
2. Categories
   a. Autistic disorder
   b. Pervasive Developmental Disorder – Not Otherwise Specified (PDD-NOS) – individuals have some, but not all of characteristics
   c. Asperger's syndrome
      i. Symptoms milder, later-onset
      ii. May be very verbal
      iii. Struggle with social interaction – problems with nonverbal cues, problems understanding own or others' emotions, over focus on narrow topics of interest

B. Common core characteristics.
1. Delays in both understanding and using language (receptive/expressive)

2. Unusual responses to sensory stimuli
3. Resistance to change and insistence on routines
4. Difficulties with social interactions

C. Traditional symptoms
1. Social and emotional un-relatedness
2. Intolerant to change /Issues with transitions
3. Absence or delay of language of communication skills
4. Lack of eye contact

D. Emerging symptoms of ASD
1. Impaired small motor skills
2. Motor planning problems
3. Dysphasia - impairment of the power of expression by speech, writing, or signs, or impairment of the power of comprehension of spoken or written language
4. Apraxia - unable to perform tasks or movements when asked,
5. Auditory processing problems
6. Fluctuating sensory dys-regulation both hypo and hyper, including hearing, taste, smell, touch, sense of balance, sense of position in space, etc.
7. Gastrointestinal dysfunction –diarrhea, gas, constipation
8. Eating disorders – severe dietary self-limitation, chewing, swallowing problems, pica (eating inedible items), nutritional deficits
9. Hypersensitivity to food and environmental elements experienced as allergies and/or behavioral reactions
10. Hyperactivity
11. Hypotonia – low muscle tone, upper body weakness
12. Sleep disorders

II. Vision Problems in Patients who have ASD

A. Vision symptoms are severe, pervasive in patients who have ASD
B. Specific vision problems
1. Abnormal ocular motility function – poor fixation, pursuits, saccades
2. Reduced convergence
3. Hyper- and hypo-sensitivities and vacillations to visual stimuli
   a. Flicking fingers
   b. Hand flapping
4. Integration of vision with auditory, proprioceptive, kinesthetic, vestibular and kinesthetic information
5. Visual spatial processing
   a. Body awareness
   b. Locating one's own body in space
   c. Spatially relating objects to self and to other objects
   d. Higher order visual-spatial abilities including conservation of space, visual-logical reasoning, representational thought

6. Abnormal head/body posture - inability to process spatial information due to oculocentric, headcentric and bodycentric localization; postural instability; toe walking
7. Lateral vision – looking at the corner of an eye
8. Difficulties integrating central and peripheral visual information

III. General strategies for success

A. Supports and modifications to support the patient
1. Anticipated difficulties in working with patients with autism
a. Fragmented attention and ability to sustain/engage with clinician or therapist
b. Language challenges – nonverbal or minimal speech, "scripting" – lots of language, but not related to task at hand
c. Difficulties with transitions from test to test
d. Triggering a behavioral response – tantrum, meltdown
e. Difficulties with motor planning and motor abilities
f. Tactile sensitivity and resistance to wearing glasses, goggles or patches
2. Clinical pearls to address poor attention
a. The importance of affect
b. Pacing, pacing, pacing
3. Language Challenges
a. Receptive Language Supports
i. Instructions for tests
Communicating clearly
The importance of visual supports
ii. Use of gestures to communicate
iii. Visual Schedule
b. Expressive Language Supports
i. Picture Point Communication Board – laminated paper with icons or words patient can point to including
Yes No
I need a …break, bathroom, food, drink
All done
ii. Iphone and Ipad applications from the Apple App Store
Yes No
I Converse request bathroom, food, break, drink, help
4. Problems with transitions
a. Visual Schedule with photos or icons
b. First-Then visual schedule App
c. Social Story
5. Dealing with behavioral meltdowns
6. Other supports
a. Proprioception (pressure) support for dysregulation
b. Adjustments to motor based task

IV. Implementation – selecting the right strategy for the patient's needs

A. Applying strategies to specific examination procedures
    1. Visual acuity
        a. Working with nonverbal patients
        b. Interpreting data and trouble shooting
    2. Refraction
    3. Accommodative tests and binocular tests
    4. Ocular health assessment
        a. Anterior Segment evaluation and IOP measurement
        b. Posterior Segment evaluation
B. Case examples and Videos
C. Key points
    1. Don't be afraid to modify a procedure to meet the patient's social, communication, cognitive and/or motor challenges
    2. Affect is the "glue" to increase attention and engagement
    3. Autism impacts a family not just the child