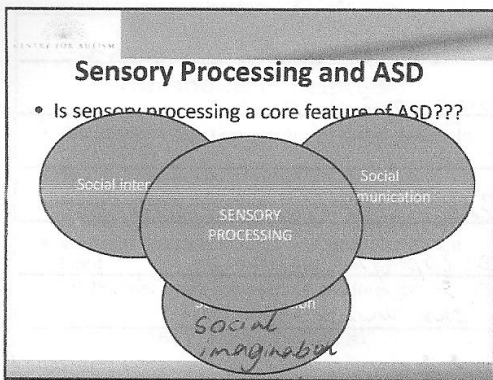


DSM IV → V Next month (May 2013)

Changing to a triad. Sensory processing will come under new criteria. Aspergers will come under ASD Δ.

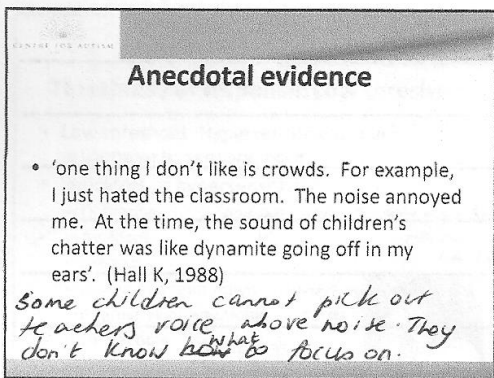




restricted repetitive interests & behaviours
↓
rigid

'Triad of differences'
Traditionally was the triad of impairments.
All 3 needed for Δ
Pre-verbal & not talking yet

Sensory processing is not needed for a Δ of ASD. It is not on diagnostic criteria.



'one thing I don't like is crowds. For example, I just hated the classroom. The noise annoyed me. At the time, the sound of children's chatter was like dynamite going off in my ears'. (Hall K, 1988)

Some children cannot pick out teachers voice above noise. They don't know ^{what} to focus on.

Autobiography by Temple Grandin & Luke Jackson.

Social interaction can be over-stimulating for someone with ASD.

visual
auditory
tactile

Children with ASD may have auditory processing difficulties.

Sensory processing will affect exp. language & touch awareness in the mouth.

e.g. moving fingers in front of eyes - to block out background distraction to control sensory input.

repetitive behaviours have a sensory basis.

Be aware of subtle signs of children not coping with sensory input in the classroom.

Anecdotal evidence

- Temple Grandin
 - Reported anxiety in response to sensory stimuli
 - Discovered that she felt calmed with deep pressure input
 - 'Hug machine'

'to get deep pressure.'

Temple Grandin DVD

Anecdotal Evidence

- 'Grinding my teeth kept disturbing, unpredictable, and meaningless outside noise from coming in. Singing a repetitive tune and humming continuously did the same. The tapping gave a continuous rhythm and stopped the unpatterned movement of others from invading'. (Williams, 1994)

Creating noise to drown out other noises.

Repetitions are a strategy for coping in different environments.

Research evidence

- Children with Pervasive Developmental Disorders have different sensory processing characteristics when compared to typically developing peers (Dunn, 2002)
- Children with ASD have significant differences in oral sensory processing when compared to children with ADHD or children without disabilities (Ermer and Dunn, 1998)
- 100% of children with ASD in a study by Greenspan and Wieder (1997) had auditory processing difficulties
- Most studies indicate at least 70% of children with ASD have sensory processing difficulties

Sensory Modulation

- The sensory processing difficulties associated with ASD tend to be sensory modulation difficulties
- 'The capacity to regulate and organize the degree, intensity and nature of responses in a graded manner to support performance' (Miller and Lane, 2000)
- '...the nervous system's process of self-regulation'
- A balance of facilitation and inhibition

modulation

- Sense systems
- ① - vestibular (movement)
 - ② - proprioception (muscles)
 - ③ - smell
 - ④ - taste
 - ⑤ - touch
 - ⑥ - visual
 - ⑦ - hearing


High functioning people are good at self regulating. we can choose what to focus on. we filter out information.

Thresholds of response

- We generally function around a normal threshold of response
- The normal amount of sensory input in the environment is enough to keep us alert, but without feeling overwhelmed
- We focus on relevant input and ignore irrelevant input
 - The ideal state for learning and interacting: *for pupils*
ALERT AND CALM-
'THE TEACHABLE MOMENT'

Thresholds of response: Low threshold

- Low threshold: Hypersensitive or over-responsive to sensory input
- Indicators of hypersensitivity
 - Defensive - *pushing others away / hitting*
 - Avoidant
 - Anxious
 - Appears to 'shut down' - *zoned out*
 - Aggressive or emotional outbursts
 - Distractible - *no filter*



running away

Many pupils have low tolerance / threshold with ASD

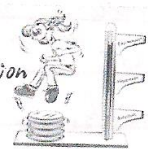
Brains trying to process everything. Can become sensory 'overloaded'

Children may behave badly to escape / get time out / quiet. or say 'I've got a headache'

The kids may not request 'can you turn it down'
 Some. They hold it together until they get home

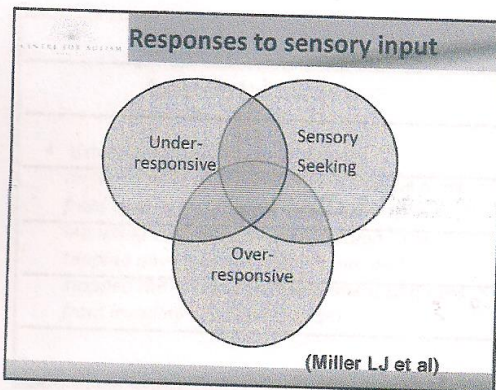
Thresholds of response: high threshold

- High threshold: Hyposensitive or under-responsive to sensory input
- 2 types of behaviour related to a high threshold:
 - Sensory-seeker** *Similar to ADHD.*
 - Appears to be hyperactive and 'on the go'
 - Distractible
 - Fidgets
 - Disruptive
 - Under-responsive** *low registration*
 - Ignores sensory input
 - Unresponsive
 - Lethargic



High need for sensory input
Need more stimulation for
awareness/learning

42 hippopotamus
 ornamatopoeia.



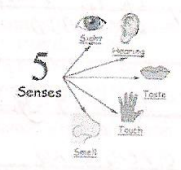
Most children fall into
the overlapping category.

we should look at
behaviours - what do they
tell us.

Letting in the zone - newspapers copying, moving,
bouncing on therapy ball - for kids with who
are under responsive.

Sensory systems

- 5 sensory systems
 - Visual
 - Auditory
 - Tactile
 - Olfactory
 - Gustatory
- Additional sensory systems
 - Vestibular
 - Proprioceptive



Some children don't like
touch when it is not in their
control e.g. teeth brushing
haircuts, dentist etc.

Give a child enough
stimulation to get them into
calm + alert state.

GENERAL EDUCATION

Tactile hypersensitivity

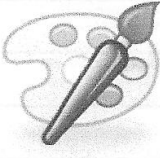
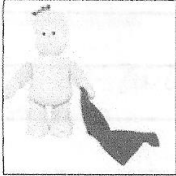
- Dislikes and avoids:
 - Messy play (e.g. Finger painting, sand play)
 - Touching unfamiliar textures
 - Physical contact with others (e.g. P.E., groupwork)
- Emotional and/or aggressive behaviours may be displayed
- Avoidant behaviours: e.g. hiding, running from classroom, avoidant strategies
- There may be a strong dislike and avoidance of certain food textures
- Dislike of some clothing fabrics

Strategies - Longer term strategies.

GENERAL EDUCATION

Tactile system: desensitisation

- Increase participation in tactile activities by gradually increasing the time and intensity of the task
- Example: Finger painting
 - Allow the pupil to wear gloves and then gradually cut the fingers off the gloves and then remove completely
 - Allow the pupil to use a long brush, then a short brush, then finger brushes, then small pieces of sponge and then fingers!
 - Gradually increase the time spent on the task (and use a visual timer)
 - Immediately follow with a favourite toy or task (use First/Then schedule)

FIRST	THEN
	

or written contract with older pupils.

Principles of Desensitisation

- **Be patient!** The process of desensitisation may take months (or even years) before achieving the long term goal.
- **Celebrate small achievements.** Recognise the small steps in the process.
- **Recognise distress.** The pupil's distress is genuine so immediately stop the activity.
- **Deep pressure input.** Provide deep input during the activity to enhance a calm state (e.g. Deep pressure to the shoulders).

Short-term strategies

Physical contact

- Allow child to stand at the back of the line
- Tape feet symbols to the floor
- Provide a mat or hoop as the child's safe area
- Ensure alternative non-contact activities are available in the playground and P.E.
- Consider seating in the classroom

Circle & time can be difficult

Sensitivity to Food Textures

- Some children may have a restricted diet and refuse certain foods due to the texture of the food
- May have a preference for dry, crunchy food
- May have a preference for soft textures
- Suggested strategies: See slides on gustatory system

Tactile system: sensory seeking

- Some children fidget as they are seeking tactile input
- This helps them to stay alert and focused
- Provide fidget toys, pencil tops, blu-tac etc.
- Attach a piece of fabric to clothing or under the desk
- Provide a 'feelie box' in the classroom and allow the pupil to access this during the day

last resort
best to meet needs at the time.

Some fidget toys can be too stimulating.
Can keep a toy in my pocket. use a social story.

Fidget toys

Vestibular System: Hypersensitivity

- Dislike and avoidance of:
 - Movement, especially rotary movement and backward movements
 - Playground and P.E. equipment
 - Fearful when wheelchair is moved unexpectedly, especially backward movement
- Gravitational insecurity
 - Dislikes having feet off the ground
 - Prefers a stable base of support
 - Prefers to stay in wheelchair; fearful when lifted from wheelchair
 - Extreme response when lifted in hoist
- Preference for sedentary activities
- Motion sickness


- roundabout, swings
avoid backward movements.
- toilet can be an issue.
use a step, toilet insert.
look at their chair. use step.

Avoidance of movement activities

- Avoid spinning and backward movements if possible
- Prepare child for movement
- Provide alternatives in the playground
 - Ball games, skipping, hopscotch, board games
- Use deep pressure input if the pupil seems nauseous or upset after movement
- Use pressure garments during movement if appropriate e.g. weighted vest or blanket

Vestibular System: Sensory seeking

- Some pupils will seek out movement during the day to keep themselves alert
- This leads to impulsive and hyperactive behaviours
 - Difficulty staying in seat
 - Walking around classroom
 - Fidgeting in chair
- It may also lead to 'self-stimming' behaviours such as rocking, spinning and hand flapping



Provision of Movement

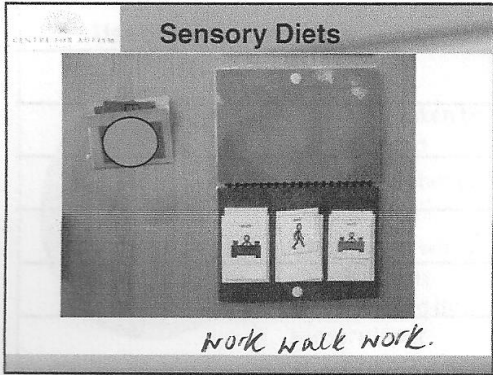
- Seating (e.g. Movin' Sit cushion, exercise ball) *- for doing homework*
- Sensory Diets (can be used to provide any form of sensory input to increase alertness during the day)
- Movement breaks
- Weighted lap cushion (proprioceptive system but may help the pupil to stay seated)
- Therabands
- Vary positions when working e.g. standing, kneeling, lying

↳ gives movement feedback.

learningpace ni.co.uk

Ball chair.

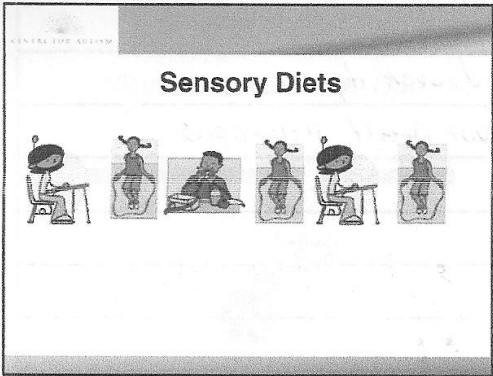
Allow them to pace when doing homework.



Showing when they can
get movement:

- Star jumps
- taking a message in school.
- make them the cleaner /
helper.

Movement is not a reward
but a need.



Encouraging sitting
at desk, but also allow
movement breaks
(Polichino et al, 2005)

Moving token

(Harberton School)

Stay Seated for
this activity

You can stand for
this activity


You are free to walk
about for this
activity

Traffic lights
red
amber
green

For pupils with good insight
Child gives token to
teacher for movement.

Auditory Over-responsiveness

- Avoids or becomes distressed in noisy environments
 - Playground
 - Dining hall
 - Assembly
- Makes noise (e.g. shouting, screaming) to block out background noise
- Distracted by background noises
- Difficulty attending to instructions in the classroom
- Difficulties in practical classes



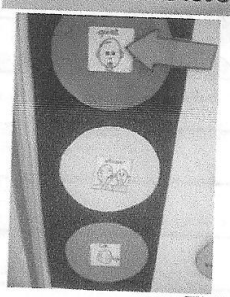
Controlling Auditory Input

- Allow the pupil to wear headphones in noisy environments *or earplugs*
- Control the noise in the classroom using a 'traffic light' system
- Visual cue card for 'time out'
- Use of visual communication strategies
- Short simple instructions
- Allow time to process
- Desensitisation

avoid over dependence.
Not for all situations

Traffic lights.

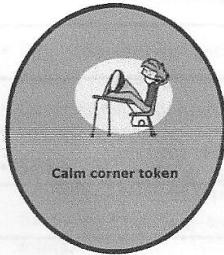
Control noise level



Harberton School

whole class approach.
can be changed when child is becoming agitated.
or child is allowed to move the arrow.

Use of calm corner (Harberton School)



- Child uses token to indicate need
- Limited number of tokens
- Can be used when child is feeling overwhelmed by sensory input

Visual Cues for 'Time Out'



Thermometer.

Auditory System: Desensitisation

- Example: Assembly
 - Allow the pupil to sit outside the hall, then at the back and then with the class
 - Gradually increase the amount of time spent in Assembly
 - Allow the pupil to wear headphones and then gradually remove
 - Provide a 'distractor'
 - Use of timers and First/Then Schedules
 - Provide deep pressure input



Auditory System: Under-responsiveness


- Some pupils are slow to respond to auditory instructions because they are in a state of under-arousal
- Provide increased sensory input to gain attention
- Use visual communication strategies
- Some pupils may hum, sing and chat to keep themselves alert

e.g. Adjet boy.

or listen to music every 1/2 hour.

Visual System

- Many pupils with ASD have a visual learning style/preference
- However, they can become distracted by too much visual information
- They may also be hypersensitive to sunlight, bright light, fluorescent lighting etc.




Visual System

- Reduce visual distractions in the classroom
 - Reduce 'clutter'
 - Consider display boards **curtains**
 - Turn off computers and whiteboard when not used **no screensavers.**
 - Store or cover classroom resources *- keep one area with walls blank.*
- Limit the amount of information on the page
- Remove fluorescent lighting
- Consider where the pupil is seated in the classroom *- back to windows + doors.*

Gustatory System

- Pupils may present with strong likes and dislikes regarding the tastes of foods
- Other pupils may prefer very bland foods, leading to a restricted diet
- Some pupils like strong flavours and may become more alert after eating strongly flavoured foods (e.g. sour sweets, mints)



*online learning - video
on Middleton website.*

Introducing new foods

- Allow pupil preferred food at mealtimes
- Introduce new food outside mealtimes and then gradually include in meals
- Follow new food with high preference object or activity
- Keep mealtimes calm and positive
- Use preferred texture of food
- Do not simultaneously introduce a new taste AND texture

Olfactory System

- Some pupils will become distressed in new environments because they are hypersensitive to smells
- Other pupils like to smell people and objects and seek out this input
- Provide a cloth with a strong scent
- Provide jars in the classroom filled with different smells

Let them sit near a window.

Use 'stop' sign and replace.

CENTRE FOR AUTISM


Proprioceptive System

- Almost all pupils will enjoy proprioceptive input; we generally do not see dislike or avoidance of proprioceptive input
- Proprioceptive input will **alert** pupils who are under-responsive in the classroom
- Proprioceptive input will **calm** pupils who are hypersensitive to the sensory input in the classroom

CENTRE FOR AUTISM

Proprioceptive Activities

- Crawling, wheelbarrow walks, animal walks
- Jumping (e.g. on trampoline)
- Push-ups
- Exercise and sports
- Weights
- Pushing and pulling activities
- Carrying books (e.g. in backpack)
- Cleaning tables and brushing floors
- Passive input (e.g. deep pressure input)
- 'Hot dog' *wrap child in a blanket*
- Stress ball or chewy tube
- Oral motor activities



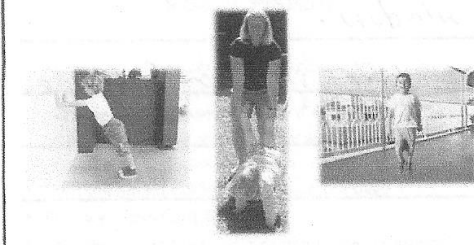
deep pressure.

online learning - sensory processing.

putting on ketchup etc.

CENTRE FOR AUTISM

Proprioceptive Activities



Remember!

- Use any activities which involve resistance or weightbearing
- Active (child-led) input is more effective than passive (adult-led) input
- Deep input with movement is often alerting e.g. Jumping on a trampoline
- Deep input without movement is often calming e.g. Head compressions

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