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Strategies - Addressing sensory needs

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Introduction

Sensory difficulties are not part of the triad of impairments which is typically used to describe autism. However, it is now recognised that many – perhaps most – autistic young people have sensory experiences which are different from those of typically developing young people. It is also clear that some of these differences cause very real difficulties. What is known as sensory integration seems to have become the predominant way of viewing sensory differences and difficulties. Many, if not all, of the commonly used strategies for supporting autistic young people with their sensory differences and difficulties are derived from sensory integration.

The young people featured in the case studies in this guidance material have a range of sensory needs. Many of the young people have been assessed by an occupational therapist. Users of this material should ideally obtain the advice of an occupational therapist in order to effectively address the sensory needs of the young people with visual impairment and autism.

For further information on sensory difficulties in autism, see Bogdashina (2003); there is also material at www.autism.org.uk/15691. (Website accessed 27/11/14.)

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Providing a low arousal environment

Introduction to low arousal

The National Autistic Society (NAS) has developed a framework for understanding and responding to the needs of children, young people and adults on the autism spectrum. It is known as the SPELL framework.

SPELL =

Structure
Positive (approaches and expectations)
Empathy
Low arousal
Links

For more information on the SPELL framework, visit www.autism.org.uk/10924. (Website accessed 27/11/14.)

It is the low arousal element that is of relevance here. Using the low arousal approach enables practitioners to

- control the sensory stimulation the young person experiences
- provide a calm and ordered environment
- and, thus, help to reduce the young person's level of anxiety and so support concentration.

For another discussion of the low arousal approach, see Bell (2013a).

A low arousal environment in use

Using a low arousal approach has implications for managing the environment. Specifically, a low arousal environment requires that practitioners

- minimise clutter
- provide effective lighting
- use colour and contrast effectively
- provide a good auditory environment.

Only two of the young people featured in the case studies in this guidance material have practitioners who are consciously using a low arousal environment. However, the practitioners involved with all the featured individuals are striving to control the sensory environment. To that extent, all the young people can be said to have a low arousal environment.

Tyler is provided with a low arousal environment, i.e. one which is calm and quiet.

In the past, Bob has often become overloaded with sensory information, sometimes very rapidly. This has sometimes occurred in the classroom. On top of the background sounds of humming computers, strip lights and traffic, peers talking loudly could present significant difficulty for Bob. When Bob's over-arousal reached a certain level, he typically rushed out of the room. At these times he was very likely to inadvertently push peers out of his way. As he was bigger and heavier than his peers, this posed a real risk to their safety, as they could be knocked over. Clearly, there was a need to safeguard Bob's peers. In addition, of course, it was important to address Bob's own needs effectively. He was therefore provided with a low arousal environment.

A central feature of Bob's low arousal environment is that he is now taught in a room by himself, with no peers, and with only one member of staff. This greatly reduces the sensory stimulation in his environment. For example, as Bob finds flickering fluorescent lights aversive, the lights are not usually switched on; in the classroom, having the lights switched off would cause his peers difficulties. Although Bob has reported difficulties with the humming of computers and laptops, he usually copes with this sound when other sensory stimulation is greatly reduced. A particularly useful feature of Bob working alone is that he is not exposed to the chatter of his peers, or to the spoken language of the teacher and teaching assistants.

Bob uses several rooms in the course of a week. As part of his low arousal environment, each room now contains a work station.

Bob cannot cope if the entrance hall is bustling when he arrives at school: the noise, movement and unpredictability are simply overwhelming for him. In addition, he becomes very distressed if someone bumps into him. As part of his low arousal environment, arrangements have now been made for him to arrive at school a little later than his peers to avoid the early morning bustle in the entrance hall, and thus to avoid crowded situations. Bob also leaves school just before the rest of the young people.

Dinner time at school was initially extremely difficult for Bob. It was common for him not to enter the dining hall at all. If he did enter it, he rarely stayed for more than a few minutes. As was the case in his classroom, when Bob's over-arousal reached a certain level, he typically rushed out of the dining hall. At these times he was very likely to inadvertently push peers out of his way. As he was bigger and heavier than his peers, this posed a real risk to their safety, as they could be knocked over. Clearly, there was a need to safeguard Bob's peers. In addition, of course, it was important to address Bob's own needs effectively. Staff now understand that the dining hall is over-arousing for Bob and he is no longer expected to eat his dinner there. He has his dinner (a packed meal which he brings from home) in one of the rooms he uses during lesson times. He is supported by one member of staff who does not engage with Bob unless Bob initiates contact.

As noted above, Bob cannot cope if someone bumps into him. He is also unable to tolerate light touch that is intended to be communicative (e.g. to obtain his attention). However, Bob quite often asks someone to rub the top of his back, and seems to need this rubbing to be very firm. Another aspect of his low arousal environment is that very effort is made to ensure that Bob does not encounter light touch.

The practitioners supporting Bob are now very aware of his sensory difficulties. They understand the need to

- control the sensory stimulation in his environment
- provide a calm environment in which he feels safe and secure and which enables him to access educational activities, i.e. a low arousal environment.

Bob's low arousal environment is used alongside

- providing a work station work stations
- providing a schedule / timetable schedules
- reduced spoken language
- simplified spoken language.

Bob also understands that he can leave any situation at any time and use a safe haven if he becomes too stressed, anxious or overloaded to cope.

The strategies described here have been very effective. As far as his low arousal environment itself is concerned, the key features are

- providing a room where he works alone
- using work-stations
- (usually) keeping strip lights switched off
- arriving at school a little later than his peers and leaving a little earlier
- having dinner in a room on his own
- avoiding light touch.

Since the introduction of his low arousal environment, Bob

- has been considerably more relaxed / less stressed
- no longer leaves rooms hurriedly; thus his peers are safeguarded
- has engaged more frequently, for longer periods and more effectively in educational activities.

Thus, Bob's low arousal environment has made a very significant contribution to his positive behaviour, emotional wellbeing and learning.

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Providing sensory integration activities

Sarah has a sensory integration programme provided by the occupational therapist. One element of this is the use of a prone board: a cushioned, wheeled board which has a length of rope attached. Sarah lies full length on this, and is pulled at high speed around the building. She responds with apparent delight by giggling and indicating she wants the activity to continue.

Jasper has been assessed by an occupational therapist. She recommended some sensory integration activities, including the use of a tyre on a rope, a weighted vest and swings. The teaching assistants have found that the weighted vest enhances Jasper's engagement in educational activities.

Winnie has been assessed by an occupational therapist who recommended some sensory integration activities. Winnie enjoyed two of these activities and seemed to benefit. The teaching assistant (TA) continues to use them. One activity is walking up a slope in the school grounds. Initially, the TA simply walked up the slope with Winnie, and immediately back down again, and repeated this several times. Winnie did not engage well with this: her behaviour indicated she could not understand why she should repeatedly turn round and go back the way she had just come. The TA now incorporates this exercise into a longer walk with Winnie around the playground and adjoining grassed area, ensuring that they walk up the slope at least 4 times during each walk. When the weather is very poor, the TA takes Winnie up a flight of stairs in the school; however, Winnie finds the stairs harder than the slope and it is difficult to incorporate the stairs into a longer route. She tolerates going up the stairs and back down again only once, though on days when she is relaxed she participates once in the morning and again in the afternoon.

Winnie's other sensory integration activity is walking while carrying a small back-pack containing two rather heavy mail-order catalogues. Again, the TA usually takes Winnie for a walk outside, though she avoids the slope and follows a different route. In poor weather, they follow a route inside the school building. Although this necessitates turning round in the school hall and then retracing their steps, Winnie does not appreciate that this is the case and is motivated to participate.

As Winnie finds walking calming, she is taken for a walk if she starts to become stressed / anxious when the noise level in the classroom rises. This is described in calming the young person by taking him / her for a walk.

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Increasing the length of time the young person sits on a chair

Before Jivan is asked to sit on a chair, he uses a physiotherapy ball for about two minutes. This has been recommended by the occupational therapist. The teaching assistant supports Jivan to lie over the ball which she then rolls gently, encouraging Jivan to balance himself and stay on the ball. This prepares Jivan to sit on his chair to and thus prepares him to participate in educational activities. During educational activities, Jivan sits on a Move "n' Sit Air Cushion which is placed on his chair. Staff believe the cushion enables him to sit for longer than would otherwise be the case; they believe it enhances his engagement in educational activities.

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Improving sitting posture

When in class, Stacey often sat in a slouched position, swung on her chair or rocked. The occupational therapist believed Stacey's poor sitting posture indicated a need for increased vestibular and proprioceptive input, to help her increase her postural security and therefore give better internal awareness of where she is in her immediate surroundings. The occupational therapist therefore gave advice about improving sitting posture: Stacey now has an inflatable wedge Cushion designed to improve sensory input. This cushion has made a significant difference to Stacey's sitting posture. In addition, because she is now more stable and secure, Stacey can give more of her attention to educational activities. Thus it enhances her engagement in educational activities: she now engages more effectively and attends for longer. In turn, this means she is now learning more effectively.

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Enabling the young person to fulfil a sensory need appropriately

Stacey sometimes pinches her peers. Staff believe she does not intend to hurt them. Instead, they view this behaviour as habitual and fulfilling a need for a good deal of sensory input. An item which provides similar sensory input has therefore been introduced in the expectation that it will fulfil the same function for Stacey. Pinching and using the item are mutually exclusive, and so staff expect that using the item will replace the pinching. The item used is the Eggcersiser. This is a hand exerciser which is available in four different strengths: extra soft, soft, medium and firm. Stacey has been provided with a medium one. When she pinches another young person, Stacey is calmly guided away and given the Eggcersiser. In addition, consideration is being given to making the "spaces" between educational activities more supportive for Stacey. In the spaces, Stacey is likely to have opportunities for physical exercise and opportunities to use her Eggcersiser.

The intention is that by providing her with more exercise and plenty of opportunities to use the Eggcersiser, Stacey will obtain the sensory input she needs and that this will reduce incidents of her pinching her peers.

Amanda sometimes puts her hands through the hair of a member of staff. She appears to like this sensory activity and to find it calming. However, as she also pulls people's hair, this behaviour is regarded as problematic: when Amanda starts to put her hands through someone's hair, it can be difficult for that person to determine whether Amanda will persist with this behaviour or escalate into hair pulling; in addition, as Amanda is aged 13 years, putting her hands through the hair of a member of staff is seen as inappropriate.

Now, when Amanda starts to put her hands through the hair of a member of staff, the practitioner offers Amanda an opportunity to interact appropriately by, for example, exchanging high-fives.

Because exchanging high-fives is a brief activity, Amanda is then provided with a sensory activity which enables her to fulfil her sensory need appropriately. The activities used for this purpose are

- those using Theraputty or Thera-Bands
- receiving sensory brushing on her hand / arm / back
- receiving a deep pressure hug.

When she receives brushing, Amanda points to where she would like to receive this, and says "up" and "down" without prompting.

A deep pressure hug is provided if it is clear to the practitioner that Amanda is very anxious. She finds this very relaxing.

The sensory activities listed here have been recommended by the occupational therapist (OT). Practitioners are strongly advised to obtain the advice of an OT before using items such as the Eggcersiser, Theraputty or Thera-Bands, or activities such as sensory brushing or deep pressure hugging.

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Ensuring a sensory need does not interfere with learning

Dominic appears to need the sensory stimulation provided by spinning rapidly. He has access to a swivel chair at break times. Typically, he spends about half of each break sitting on the chair, spinning it as quickly as possible. However, although the school's ICT suite is furnished with swivel chairs, Dominic sits on a fixed chair during ICT lessons. This is because, as soon as he sits on a swivel chair, he spins. Thus he would be unable to focus on the lesson. By enabling Dominic to spin at break times, but not during ICT lessons, staff are ensuring a sensory need does not interfere with his learning.

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Supporting the young person to engage in messy tactile activities

Practitioners supporting young people with visual impairment and autism quite frequently describe these individuals as being tactile defensive. Some of the young people featured in the case studies in this guidance material are supported to engage in tactile activities and thus to become less tactile defensive.

Sebastian is regarded as tactile defensive: he dislikes messy activities, such as modelling with Play-doh, and handling ingredients when preparing food. He is supported to engage in messy activities with a counting strategy that informs him when to expect the current activity to end. When the programme was first introduced, Sebastian was required to engage in handling Play-doh to the count of 4. At this stage, he was told to "Roll the Play-doh while I count to 4." Sebastian was judged to have sufficient receptive language to understand this. At the count of 4, the activity was terminated and Sebastian washed his hands. Gradually, the count was increased to 10. In addition, as the count increased, the rate was slowed, until he was engaging for about 1 minute. On every occasion, as soon as counting reached the target, the activity was ended, and Sebastian immediately washed his hands. At this stage, the procedure was modified; Sebastian was told to "Roll the Play-doh while I count to 10. I'll count to 10 twice." Again, Sebastian was judged to have sufficient receptive language to understand this. Counting was accelerated again; as soon as 10 was reached, the teaching assistant (TA) said "Once. Counting to 10 again." As soon as 10 was reached the second time, the TA said "Twice. Finished." Again, as soon as counting reached the target, the activity was ended, and Sebastian immediately washed his hands.

At present, this strategy is still being used with Sebastian. The TA now counts slowly to 10 three times and then ends the activity. He is thus engaged with the activity for 3 – 4 minutes. Generalisation is now being addressed by using the same approach in food technology lessons when Sebastian handles messy food items.

This strategy is, in effect, a desensitisation programme: Sebastian is gradually exposed to messy activities for longer periods of time. It is not clear what this strategy is achieving. Sebastian certainly engages for longer in messy activities when the strategy is used. However, it is not known whether he would do so if the strategy were removed. Nor is it clear whether the strategy is actually addressing his tactile defensiveness; it is possible that he would still find new messy activities aversive.

Ali is described as tactile defensive and generally avoids messy activities. Nevertheless, he uses his fingers to feed himself soft foods such as mashed potato, vegetables in gravy and yogurt. He does not yet use cutlery. For the present, the occupational therapist has recommended that staff do not provide Ali with messy tasks.

For more information about touch, see McLinden and McCall (2002).

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Promoting tactile exploration

A young person who has little or no sight may have difficulty exploring objects by touch: it can be difficult for the individual to

- locate an object to explore in the first place
- find the item again if he / she drops it.

It is tempting to support the young person to engage in tactile exploration by handing him / her each object, and by physically prompting him / her to feel it. However, such support does not promote independent tactile exploration; there is a risk that the young person will

- "switch off" and take no active part in the process at all
- even come to resist all such activities.

Using the hand-over-hand approach to physically prompt young people to explore by touch is certainly not recommended, and should be avoided. The hand-under-hand approach is preferable, but it still means the practitioner takes the initiative and has at least some control over the activity. Truly active independent exploration requires that the young person takes the initiative and has complete control.

An approach used with Winnie is designed to allow her to take the initiative and to have complete control. This involves placing her in a well-defined space and providing her with a box of objects. The space is a corner of her classroom. Physical structure, is used to support her understanding of the nature of the activity: she sits on a PE mat that she does not encounter at any other time. The two sections of wall in the corner of the room are lined with soft-play items, up to height of about a metre; similar items are used to define the other sides of a square with sides of about 2 metres. This well-defined space enables Winnie to feel secure, as her peers cannot approach closely.

A sound-making toy is used to encourage Winnie to enter the space and sit on the floor. Once she has engaged with the sound-making toy for about a minute, the teaching assistant removes it and places a box of objects on the mat so it is touching Winnie's right leg. After a pause, during which it is assumed Winnie is processing the situation, she puts her right hand in the box, finds an object, removes it and explores it. Initially, she typically manipulated an object very briefly, using only one hand, and sometimes her mouth; she then cast the item. She now uses both hands, transferring from one to the other and often explores the item for a minute or two before dropping it, rather than casting it. In addition, she sometimes seeks again and finds an object she explored and then dropped a few minutes earlier.

The objects placed in the box for Winnie to explore are linked to one of the term's literacy or numeracy topics. The aim is that the objects remain constant throughout the term. However, if Winnie is not sufficiently motivated by an object, it is removed and another one put in its place.

For more information about touch, see McLinden and McCall (2002).

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Promoting attention to stimuli using a sensory environment

Many young people with visual impairment and autism do not readily attend to the stimuli practitioners regard as important, and promoting attention to specific stimuli can be very difficult. Specialist environments, where it is possible for practitioners to isolate and control the different sensory inputs, can help with this. Several terms are used to describe these specialist environments. They include light room, dark room, white room, sound and light room, Snoezelen, sensory room or multi-sensory room.

In fact, such specialist environments do not necessarily need to occupy an elaborately equipped room set aside for this specific purpose. They can be set up, using just a few items, in the corner of a room. For the sake of clarity, the term used here is sensory environment.

A sensory environment may have several functions, including to

- eliminate stimuli that the young person finds aversive
- gradually increase the young person's tolerance of a particular stimuli
- reduce distractions
- enable practitioners to establish which stimuli provide the young person with the most pleasure and interest; building on that knowledge, it may then be possible to use the sensory environment to:
    - encourage the use of residual vision
    - facilitate engagement, interaction and communication with other people
    - promote the understanding of cause and effect.

Many young people with visual impairment and autism benefit from what may be known as a chill out room or space or safe haven, where they can calm down when overloaded with stimulation, stress or anxiety. A sensory environment is sometimes used for this purpose, which fits well with the non-directive approach some practitioners have. However, this is not appropriate: a young person's safe haven should always be available to the individual. This cannot be the case if it is used by other young people.

In addition, some young people with visual impairment and autism are very rigid and find it very difficult to use any space for more than one purpose. Such an individual is unlikely to be able to use a sensory environment in more than one way, especially if he / she is first introduced to it as somewhere to relax. If a practitioner then attempts to use the room in a structured way, the young person may become very confused and a crisis could result. Young people with visual impairment and autism benefit from spaces which have clearly defined uses. For a more detailed explanation of this, see the explanation of physical structure.

A sensory environment can be used to promote attention to specific stimuli. This is the case, for example, with Jivan, who attends a mainstream school. He is visited for half a day each week by a mobility officer. She uses part of this time to take Jivan to the multi-sensory room in a local special school. Although sensory environments are commonly provided in special schools, few mainstream schools have:

- more than a few young people at most who would benefit from a sensory environment
- the space or resources to provide a sensory environment.

Jivan's weekly visit to the multi-sensory room provides him with an opportunity to experience sensory stimulation that is unavailable to him at other times. He shows anticipation and enjoyment of the visit each week. The mobility officer uses a UV light box and fluorescing objects in the room. This helps Jivan to disregard items that are of no visual significance and to move towards the fluorescing object. It encourages his use of residual vision in a meaningful and enjoyable way.

Charles typically spends a considerable amount of time twirling at high speed and head weaving, and has little interest in objects. His teacher has started to use the sensory environment to encourage Charles to attend visually to objects. At present he is very interested in the bubble tube which he has learned to switch on. Each time Charles presses the switch, the bubble tube remains on for 10 seconds, during which time Charles watches it intently. The teacher plans to extend the time Charles engages with the bubble tube and will soon present to Charles a range of other lights to establish what else he finds motivating. When the teacher has identified another item that interests him, she will introduce it, initially as an alternative to the bubble tube.

In the sensory environment Charles now focuses more readily on something that is external to his own body, and his self-stimulatory behaviour has reduced in this situation. His teacher believes the sensory environment is beneficial for Charles as other sensory stimuli can be eliminated, enabling him to focus on the bubble tube without being distracted.

Charles finds the bubble tube calming. Therefore, on days when he is disturbed, he is supported to stay calm by providing access to the sensory environment. Fortunately, the structured use of the environment to encourage Charles to engage with objects is compatible with its use to support him to stay calm.

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Promoting sensory understanding using TacPac®

TacPac® is an activity pack that combines touch and music to promote (amongst other things) sensory understanding. Sarah is included with other young people in sessions using TacPac®.

Sarah apparently engages willingly in these sessions, at times joining in with the music. She accepts the tactile experiences, which indicates she is not tactile defensive. During Tacpac® sessions Sarah frequently communicates with the member of staff supporting her, using single words and short phrases. She does so in anticipation of the next part of the session; she also repeatedly asks about forthcoming events. Although Sarah appears to relax physically, during Tacpac® sessions, her frequent questioning about forthcoming events indicates she remains quite anxious.

It is possible to view Sarah's Tacpac® sessions as being a feature of her responsive environment.

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Supporting the young person with clothing

Jivan, in common with many sighted autistic young people, has sensory difficulties with clothing. For example, although he transitions between home and school in a jumper, he removes this as soon as he arrives at school; he does not wear shoes indoors; and the only shirts he tolerates are those with short sleeves. In addition, Jivan cannot tolerate clothes with bulky seams, or labels in clothes; all labels are removed from his clothes.

Clothes with prominent seams or labels and those that are tight or rough-textured quite commonly cause difficulties for young people with autism. It is possible to obtain clothing which is less likely to pose problems.

School uniforms can be very difficult for some sighted autistic young people. If a young person with visual impairment and autism has sensory difficulties with clothing it may be necessary for staff to consider whether it is appropriate to insist that the individual wears school uniform. In some cases it may be possible to adapt the uniform so the young person can wear it without difficulty.

Some young people with visual impairment and autism need support with acquiring independent dressing / undressing skills.

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Supporting the young person to wear spectacles

A young person with visual impairment and autism may have difficulties tolerating spectacles. Speculation suggests the following may be factors in this

- the young person may associate the spectacles with having the sight test, which itself may be aversive: it involves someone coming in very close and using unfamiliar and possibly threatening equipment
- the young person may find the sensory stimulation of the spectacle frames on the ears and nose intolerable; this might be the case even if there were no lenses in the frames
- assuming the young person tolerates the frames touching the ears and nose, he / she may not adjust to the effect the spectacles have on clarity of vision
- wearing spectacles may also increase the risk that the young person will experience sensory overload.

None of the young people featured in the case studies in this guidance material have difficulties tolerating spectacles. Nevertheless, practitioners should be alert to the potential barriers to wearing spectacles for young people with visual impairment and autism. If a young person finds it difficult or impossible to wear spectacles, practitioners should attempt to understand all the factors involved. It may then be feasible to put a programme in place to support the young person to wear spectacles.

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