

SENSORY INTEGRATION DIFFICULTIES

an extract from Porter, L. (2008) *Young children's behaviour*
Elsevier, Sydney.

The second most common disability after communication delays and impairments is sensory integration (SI) difficulties. Despite their prevalence, SI difficulties are often unrecognised because they span a bewildering array of symptoms (as listed in the Box below). Children with SI difficulties have problems processing or organising information that they receive through their senses and producing an efficient or meaningful response to that information (Kranowitz 1998). They have problems filtering out irrelevant sensory information and making sense of relevant input.

The affected senses can span a combination of hearing, vision, touch, taste, smell, the vestibular (the balance mechanism in the inner ear), and the proprioceptive sense (which provides information from our joints about our body position). Some children take in too much information and over-react to stimuli and therefore become alarmed or too alert (which is akin to the state we get into when we are already late for an appointment and have lost our keys). Other children take in too little information through their senses; therefore, they under-react to sensory information and seek more stimulation. A third group do either at various times or across the different senses. This last group of children can be very confusing, as sometimes they need more stimulation and sometimes less, or they might seek more stimulation but then be unable to handle it (Kranowitz 1998).

Signs of sensory integration difficulties

Over-sensitive (over-reactive)

Touch

Avoid touching or being touched
by objects or people
Fuss over clothing and footwear
Sensitive to slight bumps or knocks
Pull away from light touch
Avoid getting messy hands
Are distracted by touch sensations

Movement (vestibular sense)

Avoid moving, are fearful, hesitant
Anxious when tipped off balance
Cautious when climbing stairs with
alternating feet (past the usual age)
Low activity levels
Get nauseated from movement
Feel vulnerable when their feet
leave the ground, fearful of heights
Dislike active running games
Difficulty catching a ball
Easily fatigued

Under-sensitive (under-reactive)

Unaware of touch, pain, temperature
or how objects feel
Constantly hurt themselves or
others without realising it
Touch objects constantly
Messy eater and dresser

Crave fast, spinning, bouncing
and jumping movements
Constantly move and fidget
Use too much force with toys
or when touching other children
Hang upside down constantly
Dart from one activity to another
Take foolhardy risks when climbing
Rock or bang their head when stressed
Move without caution or with
poor coordination

Movement (vestibular sense)

Difficulty learning new motor skills
 e.g. riding a push toy or tricycle
 Difficulty using tools such as scissors,
 eating utensils, crayons, pencils
 Walk on toes, to minimise
 contact with surfaces

Weak muscles (low tone)

Body position (proprioception)

Are physically rigid, tense, stiff. uncoordinated
 Anxious when tipped off balance

Movement is clumsy, inaccurate
 Slump and slouch over table
 Deliberately bump into objects
 Deliberately fall over
 Jump off unsafe heights
 Difficulty dressing
 Prefer tight bedding and clothing

Visual skills

Become overly-excited when there
 is a lot to look at
 Shield eyes from visual input
 Avoid eye contact
 Over-react to bright light
 Irritable in crowded, visually noisy
 places e.g. supermarkets
 Look away from tasks

Touch everything to learn about it,
 as cannot interpret visual cues
 May misread others' facial
 expressions and gestures
 Difficulty coordinating eyes for
 following (tracking) moving objects
 Stare intently at objects or people
 Difficulty naming or matching
 colours, shapes and sizes
 Difficulty completing puzzles

Auditory (listening) skills

Cover ears to close out sounds or voices
 Distracted by sounds that go
 unnoticed by others
 Distressed by noises

Ignore voices
 Difficulty following verbal instructions
 Uncertain of the source of sounds

Taste

Object to certain textures and
 temperatures of foods

Mouth inedible objects

Smell

Object to strong odours e.g. ripe bananas
 Notice odours that are imperceptible to others

Ignore unpleasant odours

The behavioural and emotional effects of sensory integration difficulties are often misinterpreted as deliberate disruptions or emotional over-reactions. In fact, they are a reasonable response by the children to feeling overwhelmed or stressed. Affected children tend to be:

- excessively irritable;
- unable to calm themselves by the usual methods e.g. thumb sucking;
- inflexible and controlling;
- intolerant of changes in routines;
- uncomfortable with making transitions between activities;

- easily frustrated;
- impulsive and prone to accidents;
- susceptible to marked variations of mood;
- prone to emotional outbursts or tantrums;
- in need of extensive help to get to sleep.

Socially, because under-reactive children lack understanding of pain, they can have less empathy for others. At play, they tend to wander around aimlessly, without becoming engaged in purposeful activity or they engage in repetitive play for extended periods of time. They often prefer to play with objects rather than people. As a result, these children are often neglected or ignored by peers.

Over-reactive children also have difficulty getting along with peers, particularly in crowded conditions, when they become disorganised and therefore may choose to withdraw. This is interpreted as unfriendliness which leads to social neglect, while their alarm and resulting aggression when touched results in peer rejection.

The behavioural outbursts that result when children are overwhelmed by sensory input are an educational issue, not a behavioural one. The behaviours are not volitional. That is, they are not a failure of self-control, any more than children with a significant vision loss can control that they do not see obstacles. For children who are blind, we would remove the obstacles or teach the children where they were; so too for children with sensory integration difficulties, we need to adjust their sensory load (or 'diet') to make it less overwhelming and teach the children strategies for managing their emotional reactions to overload.

CALMING ACTIVITIES

Those children who are too alert (who over-react to stimulation) need help to settle their nervous systems. Useful activities include rhythmical linear movement (as with swinging, or jumping forwards and backwards over a line, rope or on a trampoline); giving deep pressure massage; having the children perform heavy work tasks such as wheeling a laden wheelbarrow or sweeping; placing a wheat bag on their laps during quiet activities; or using earplugs or headphones for those who over-react to auditory input (Soden 2002). These activities can both calm children down and give them experience with benign sensations so they no longer interpret these as threatening and can cease over-reacting to them.

At times when children are required to sit still and listen at preschool or school, those who are overly alert will be able to achieve this only by repeatedly telling themselves to keep still. However, with this constant stream of self-talk going on, they will be unable to hear their teacher. To overcome this, you can give them a fidget toy. This will allow them to move subtly, thus stimulating an automatic response in their brain to limit their movement. The result is that they are free to listen. (If many children want such toy, you could give one to each child, or ask the children's suggestions for how to organise turns.)

To prevent these children's nervous system becoming too aroused during group activities, they need to sit on the outer edge of the group or, in

line-ups, stand at either end of the group so they are not unexpectedly jostled. (There is very little justification for insisting that young children line up anyway, so that practice could be abandoned altogether.) Finally, if the children do become overwhelmed, they need permission to withdraw to a quiet area to calm themselves.

ALERTING ACTIVITIES

Those who under-react to sensory input need extra exposure to a range of physical and tactile experiences so they learn to be aware of these and to discriminate various sensations. Appropriate activities include sucking thick liquid through a straw, identifying an unseen item in a feely bag, massage, messy play, swinging by their arms, trampolining and swimming (Soden 2002). Those children who are tactile defensive (who over-react to touch) can be helped to participate in finger painting or clay moulding by covering the substances with plastic wrap until the children become desensitised.

OCCUPATIONAL THERAPY

Sensory integration therapy from a specialist occupational therapist can be useful. Young children gain the most benefit from this therapy, as their nervous systems are still developing and thus are highly responsive to treatment.

BEHAVIOURAL GUIDANCE

Children with sensory integration difficulties are not being deliberately disruptive. They simply *cannot* calm their nervous system by willpower alone. Of the strategies already mentioned throughout this book, the key ones include the following.

- Express your empathy for children's distress and courage at constantly having to deal with a frightening and confusing world of sensations (Kranowitz 1998).
- Provide structure and routines to help children with SI difficulties to organise themselves.
- If your relationship permits and the children appreciate it, give them some physical comfort such as a hug or hand holding when they become overwhelmed.

The children can benefit from activities such as being wrapped firmly in a towel or rug, having them squeeze into a small space, curling up under an A-frame with a blanket draped over it or into a large cardboard box. Relaxation activities can also be useful.

FURTHER READING

Kranowitz, C.S. (1998). *The out-of-sync child: Recognizing and coping with sensory integration dysfunction*. New York: Perigee.

Porter, L. (2006). *Children are people too: A parent's guide to young children's behaviour*. (4th ed.) Adelaide: East Street