

## **SKY Autism (Malvern)**

### **Information processing**

In order to understand how a young person on the autism spectrum experiences the world it is important to understand how he/she processes information. Three concepts that help explain how an individual with autism processes information are Executive Function, Weak Central Coherence and Theory of Mind. Differences in these areas account for many of the observable characteristics of autism.

### **Executive Function**

Executive functions are an important set of skills that let people plan, organise and complete tasks. These skills allow us to:

- concentrate,
- plan and organise a course of action,
- think before acting,
- predict consequences,
- hold several things in our short term (“working”) memory,
- multitask

### **The “air traffic control room”**

The role of Executive Functions can be compared to an air traffic control room. Just as air traffic controllers enable many planes to use an airport without colliding, so Executive Functions equips us with the ability to remember, focus, plan and respond appropriately to multiple “messages” in our environment. For individuals with autism, it can be like the air traffic control room is finding it difficult to understand messages, to organise and prioritise them and to initiate an appropriate response.

### **Executive functions in the middle years**

Evidence suggests that impairments in executive functions experienced by young people on the autism spectrum are particularly noticeable during the years of transition between childhood and adolescence. This is likely due to the increase in demands and expectations of independence and self-management that typically occur during this period. For example, keeping track of due dates for assignments and bringing the required materials for each class can be challenging for many young people with autism.

### **Thinking at school**

Some young people with autism may have difficulty with complex thinking that requires the ability to make swift connections between different trains of thought. Others may have difficulty maintaining their attention on required tasks, or organising their thoughts and actions. These difficulties are compounded by problems encountered with drawing on knowledge gained from prior experiences in order to plan their response to a situation. This difficulty with “generalisation” is common among young people with autism.

“I cannot hold one piece of information in my mind while I manipulate the next step in the sequence.” Temple Grandin

Providing and encouraging the use of visual organisational tools can help to counter the challenges presented by self-management difficulties. Visual schedules build on children with autism's strong visual learning and thinking style and help them to understand and meet expectations. They have the potential to promote independence, build confidence and raise self-esteem. **The National Autistic Society (UK) have published a thorough information sheet on the various uses of visual supports.**

### **Self-regulation**

An individual with autism's information processing differences also impacts on their ability to self-regulate. Self-regulation refers to a person's capacity to control their impulses and emotional responses. It is inseparably linked with a person's executive function skills.

### **Being calm and focused**

Self-regulation enables a person to remain focused and conform to the expectations of a situation or task. Self-regulation also helps a person to problem solve, persevere through challenges, make choices, and flexibly adapt their responses across a range of contexts.

**A young person's ability to self-regulate can be impacted by their sensory processing and anxiety levels.**

A range of therapy approaches are focused on helping young people with autism to develop self-regulation skills. These strategies are designed to be very practical and can be applied easily at home or school. Therapy approaches usually focus on teaching the child to recognise and respond to their own body's distress signals and to replace their initial responses with positive behaviours. Two examples of programmes designed to improve self-regulation are:

### **The Alert Program**

### **The Incredible 5 –point scale**

## **Weak Central Coherence**

Central coherence refers to the ability to derive overall meaning from a mass of details. It enables people to understand context and engage in big-picture thinking. "Seeing things in context is so natural to [typically developing] people that most do not even notice their brain does this effortlessly."

Some individuals with autism may attend to specific details at the expense of understanding the overall picture or gist of a situation or experience, and therefore may be considered to have "weak central coherence". A young person on the autism spectrum may need the social expectations and implied, or generally understood, demands of a particular set of actions or tasks to be explained and broken down into small, achievable steps.

"When your brain cannot simultaneously integrate information, it has to sort through the information sequentially...this sequential reasoning slows down the processing, leaving the individual missing much of the rapidly changing information...this is very draining and often leaves people on the spectrum struggling to keep up".

Weak central coherence can present both challenges and strengths for individuals with autism.

### **Detail focused strength**

Happe and Frith (2006) call **weak central coherence** “a detail-focused cognitive style” and state that weak central coherence is not just a failure to extract global form and meaning, but is also “an outcome of superiority in local processing”.

Many people with autism excel at focusing on extreme detail, and so are able to pick out a tiny element from a mass of complex data or objects. An intense focus on specific topics or activities can be beneficial in honing skills and knowledge and can positively impact on the individual’s future recreational and career prospects.

### **Needing extra time**

It is important to assess each young person’s skill level before putting additional supports in place but in general, weak central coherence can be accommodated by providing additional time to process information. Taking time to explicitly explain the expectation of a situation and utilising individualised visual supports is also helpful.

### **Theory of mind**

Theory of Mind can be summed up as a person’s ability to recognise and comprehend the thoughts, beliefs, desires and intentions of other people. Young people on the autism spectrum may have difficulty recognising and processing the feelings of others. This is sometimes referred to as “mind-blindness”.

As a result of mind-blindness, people on the autism spectrum may:

- have difficulty predicting and interpreting the behaviour or emotional state of others
- have difficulty understanding the unique perspectives of others
- not realise if another person’s behaviours are intentional or unintentional
- have problems inferring the intentions of others (including animals)
- lack understanding of how their own behaviour impacts how others think and/or feel

### **ASD and empathy**

Challenges with theory of mind often lead others to conclude that individuals on the autism spectrum do not empathise. Current research however confirms that empathy, the ability to recognise, comprehend and connect with another person’s emotional state and frame of mind, is multifaceted.

Whilst an individual with autism may struggle with certain forms of empathy, others remain intact. Rogers (2007) notes:

“ our data would suggest that when individuals [with autism] are given the information that allows them to understand the point of view of others, they have as much concern and compassion as unaffected individuals.”

Whilst individuals with autism may have diminished cognitive empathy (that is an intellectual understanding of feelings) their affective empathy (their own felt emotional response to another's feelings) may not be impacted. Therefore a young person on the autism spectrum may have difficulty identifying and "reading" the emotions and perspectives of others, but their level of personal distress and concern for another person is ample.

### **Theory of mind and being social**

Challenges in theory of mind can lead to the misunderstanding that a young person on the autism spectrum is socially disinterested or aloof.

Activities which aim to teach children to read other peoples' social cues (such as facial expressions or body language) may be beneficial. (The Emotional Toolkit is useful)

### **An information document produced for SKY Autism (Malvern) by Jackie Sainsbury, SEND Consultant at Atley Consulting**

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