

## Executive function in learners with CHARGE syndrome

Executive function difficulties are recognised as being present in many learners with CHARGE, and this is perhaps one of the aspects that will have greatest impact on learning in addition to their multi-sensory impairment.

These are a set of processes that all have to do with managing oneself and one's resources in order to achieve a goal. They develop primarily during childhood and adolescence and through to young adulthood with periods of acceleration, typically between the ages of 5-8, 15-19 and 20-29 years.

### What does executive function involve?

Executive function (and self-regulation) skills are the mental processes that enable each of us to plan, maintain attention, remember instructions, and complete steps towards achieving an end goal in an organised way. They involve:

- Inhibition: the ability to control one's own behaviour and stop actions/thoughts, with the opposite being impulsivity
- Shift: being able to move with ease from one activity or situation to another, and to work flexibly
- Emotional control: modulating one's emotional responses
- Problem-solving
- Working memory: this involves holding short-term information in your mind and using that information to accomplish a task
- Planning- identifying and organising a sequence of events to achieve a particular goal. This is linked to the ability to solve new and complex problems
- Organisation of oneself and organising materials
- Self-monitoring/ self-regulation

### Where might difficulties be encountered?

- Social and emotional development
- Monitoring and regulating behaviour
- Transitions between activities, different environments and people
- Working independently
- Initiating activities and interactions
- Self-help and self-organisational skills
- Completing a task independently
- Maintaining a well-regulated sensory state

### What strategies might be helpful?

- Clear and consistent use of structure and routine
- Teaching self-organisational and self-help skills with use of a visual timetable/ calendar
- Use of concrete supports
- Tasks broken down into steps with a clear beginning, middle and end
- Plan ahead to ensure the child or young person is well-prepared
- Highlight any expected changes
- Ensure carefully planned transitions with additional support where needed

- Teaching functional life skills
- Use of a concrete component (e.g. photographs, visual calendar etc.) to aid recall, encourage initiations, and clarify meaning
- Develop templates for often repeated procedures
- Provide a 'bridge' between the familiar and unfamiliar
- Encouragement to complete a task more independently; providing support at the beginning of a task and then reducing the level of support, but being available to help re-focus on the task when she becomes distracted
- Ensuring all teaching is provided in a real context
- Support for the child or young person's emotional development (See handout on '*Emotional self-regulation and CHARGE syndrome*')
- Structured activities to develop social relationships (e.g. circle of friends, lunch dates)
- Access to sensory breaks when needed
- Continuing to increase communication skills
- Using positive behavioural support to reward and encourage positive behaviour
- Establish a response to help support the 'stop' function

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