

# EXECUTIVE FUNCTIONING

EXECUTIVE FUNCTIONING IS A COMMONLY MISUNDERSTOOD AREA OF NEURODEVELOPMENTAL CONDITIONS SUCH AS ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD), AUTISM SPECTRUM DISORDERS AND TOURETTE SYNDROME (TS). PEOPLE WITH TS OFTEN EXPERIENCE DIFFICULTIES WITH EXECUTIVE FUNCTIONING WHICH CAN IMPACT THEIR DAILY LIFE.

## WHAT IS EXECUTIVE FUNCTIONING?

The executive functions are core life skills that help us perform tasks and aid our independence. They also help us regulate our behaviours, emotions and responses. Executive functioning involves three key mental skills:



**WORKING MEMORY:** Keeping information in mind and putting it to use



**FLEXIBLE THINKING:** Seeing problems from multiple angles and finding different ways to solve them



**SELF-CONTROL:** Being able to stop before responding on impulse

We all use these skills every day to learn, work and manage everyday life. People of all ages and abilities can experience executive functioning difficulties for various reasons, which can make it hard to focus, follow instructions and regulate emotions.

## HOW DO CHILDREN USE EXECUTIVE FUNCTIONING IN SCHOOL?

To participate in school, children are continually required to use and develop executive functioning skills, such as:

- Paying attention and focusing
- Monitoring performance during a task, e.g. checking work and spotting mistakes
- Starting and completing new tasks and independently generating new ideas
- Shifting focus from one situation/task/activity to another
- Controlling impulses and being able to stop a behaviour at an appropriate time
- Holding on to information in the mind (working memory)
- Keeping a workspace organised, e.g. school bag, homework folder, desk
- Setting goals, planning steps and carrying out tasks systematically

## HOW DO ADULTS USE EXECUTIVE FUNCTIONING AT WORK AND HOME?

Executive functioning is a core capability that helps us manage life, work and caregiving effectively. We all need planning, self-control and flexibility for self-regulation – the ability to draw on the right skills at the right time, manage our responses to the world and resist inappropriate reactions. This includes both conscious efforts that we are aware of and automatic responses. Self-regulation relies on a strong foundation of executive functioning skills to help with everyday life and tasks, such as:

- Identifying the steps to conduct a job search
- Creating a household budget
- Prioritising work projects and time management
- Attending appointments
- Arranging family/childcare schedules

## HOW CAN EXECUTIVE FUNCTIONING DIFFICULTIES AFFECT PEOPLE WITH TS?

*Considering all the mental skills that children use in school and adults need in everyday life, it is easy to understand how executive functioning difficulties can impact upon learning, progression and wellbeing. Executive functioning difficulties may also affect self-esteem and anxiety, as they can be misunderstood as laziness or carelessness.*

### DID YOU KNOW?



Many people with TS also live with an ADHD diagnosis and/or associated traits, which can also impact executive functioning. This makes it tricky to find out which executive functioning challenges are linked to TS and which are linked to ADHD. For children with both ADHD and TS, struggles with working memory and controlling impulses can be especially difficult.

## WHAT STRATEGIES ARE AVAILABLE TO HELP IMPROVE EXECUTIVE FUNCTIONING DIFFICULTIES?

There are many ways to support both children and adults with TS who experience executive functioning difficulties. Strategies vary depending on the area/s that need support, as well as the age of the person with TS. Executive functioning skills develop continuously in all children as they get older and continue to develop into adulthood. While executive functioning is easier with a strong foundation from childhood, it is never too late to improve your executive functioning skills!

Considering different options for support can be helpful for teachers, parents and carers. It is also important for

children and young people with TS themselves to become curious about their strengths, challenges and strategies that work for them to support their growing independence. What is often most helpful is to be curious with children about what works for them and to help them identify useful strategies so they can use them again.

For adults, things that can help with personal executive functioning are reliable support systems, predictable routines and, if possible, minimisation of distractions. There are also things that the people close to you in your life, including your family, friends and colleagues can do to help.

# STRATEGIES TO SUPPORT CHILDREN WITH TS WHO EXPERIENCE EXECUTIVE FUNCTIONING DIFFICULTIES

Drawing on lived experience and [Harvard University's Centre of the Developing Child recommendations](#), there are a variety of strategies, activities and games to support and strengthen key executive functioning skills:

## EXECUTIVE FUNCTIONING SKILL

## STRATEGIES TO DEVELOP AND SUPPORT CHILDREN

### PLANNING

- Use visual strategies such as mind-maps and bullet points
- Provide additional structure such as a writing frame to support a story
- Use technology, e.g. setting reminders on a phone



### ORGANISING

- Use visual timetables to prompt what is needed each day for school
- Give prompts and reminders
- Ensure good modelling of organisational skills from others
- Discuss how an activity can best be organised
- Help the child to find a good time and space for working
- Label drawers, section folders, etc
- Establish good routines, e.g. getting bag packed for school before bed



### WORKING MEMORY

- Provide clear instructions that build on consolidated knowledge
- Build automatic knowledge to reduce working memory demands, e.g. number bonds and tables facts
- Teach list-making and note-taking
- Use other strategies for remembering information such as rhymes
- Incorporate pre-teaching and repetition
- Provide visual support around the room to act as reminders for particular tasks
- Highlight key information, e.g. the numbers in maths word problems
- Allow adult support to repeat information when needed



### STARTING TASKS

- Provide clear instructions with visual support
- Remind about the first thing to do and ask child to repeat it
- Ensure the task feels manageable by breaking down into small steps and giving a clear structure
- Let the child know that you will return to them in a set time period, e.g. use a timer
- Provide opportunities for the child to discuss their ideas with a talking partner for more imaginative tasks before starting, e.g. writing a poem



## SWITCHING ATTENTION

- Give warnings about the ending of an activity, including visual support, e.g. use a timer
- Practice “Now and Next” approaches, which help the child to prepare for what is coming next
- Reduce distractions such as background noise
- Present activities in stages
- Allow reasonable adjustments to support concentration during listening, e.g. doodle pad, fiddle toy
- Use a particular signal to indicate the need to switch attention, e.g. “Are we listening?” with clapping



## CONTROLLING IMPULSES

- Provide sensory support, e.g. fiddle toys, sensory cushions, lap pads
- Allow movement breaks during tasks
- Practise tolerating urges using fun games, e.g. resisting chewing a sweet
- Take turns to play games
- Show compassion and value of the fast-acting brain to support self-esteem and self-awareness
- Give social skills support



## SELF-MONITORING & WORK COMPLETION

- Set monitoring activities such as checking their own or examples of writing for punctuation
- Use fun activities to encourage looking for detail, e.g. ‘spot the difference’ games and ‘Where’s Wally?’
- Ensure tasks are manageable and that the child feels there is time for self-monitoring
- Provide opportunities for self-monitoring small parts of an activity
- Help the child to allow themselves brain breaks/ movement breaks when needed
- Recognise and reward effort and persistence



**For adults with TS, small changes to habits and every day routines may help with executive functioning. These include changes to the environment, using short-term incentives for motivation and building skills. It may be helpful to learn skills and set goals (long-term, short-term or daily) with the support of a coach:**

## EXECUTIVE FUNCTIONING SKILL

## STRATEGIES TO DEVELOP AND SUPPORT ADULTS

### PLANNING

- Use daily planners and lists
- Try a “now, next, later” list to plan your day as you go
- Use post-it notes to identify steps, so they can be easily rearranged
- Draw out a mind map of things to do, breaking down larger tasks into smaller tasks
- Rating tasks on a 1–10 scale for effort needed can help to work out where harder tasks can be split up into several more manageable tasks with lower ratings
- Use a diary and calendar – decide the days you will do certain tasks and write them in
- Ask for help from someone who’s good at planning
- Practice the skill by starting with something fun to plan



## ORGANISING

- Establish set places to keep things
- Create a daily routine that works for you
- Use visual aids such as colour-coding and labels
- Make use of alarms and alerts for upcoming events



## WORKING MEMORY

- Create a checklist
- Record reminders and instructions on your mobile device so you can re-listen
- Use visual cues in your environment
- Prioritise sleep



## STARTING TASKS

- Remove distractions e.g. turn off notifications from social media
- Break down large tasks into smaller, more manageable steps
- Turn open-ended tasks into close-ended tasks with a clear endpoint
- Build in variety or choice



## SUSTAINING ATTENTION

- Limit access to distractions e.g. shut-down time-wasting websites
- Screen out unpredictable distractions e.g. listen to quiet music
- Pair an unpleasant task with something pleasant
- Set a “personal best” goal



## CONTROLLING IMPULSES

- Remove temptations
- Try mindfulness exercises to improve self-awareness and regulation attention and impulses
- Before starting something take a few minutes to think about it, building in “wait time”
- Generate options and consider pros and cons of each option
- Allow a small reward in exchange for giving up a big one
- Announce your goal to a friend



## SELF-MONITORING & WORK COMPLETION

- Use short-term incentives for motivation, such as by creating a “reward menu” or a preferred activity to do once the work is done
- Share goals with a friend or family member
- Create a system for analysing mistakes
- Learn to ask for feedback from others
- Use a problem-solving template
- Identify potential roadblocks and systematically eliminate them





## SUMMARY

Executive functioning is the use of mental skills such as our working memory, flexible thinking and ability to control impulses to assist us in everyday life. For adults and children with TS, some or all of these skills may be challenged at different points in life. Fortunately, there are many strategies for parents, carers and teachers to help children with TS develop executive functioning skills and support their learning and participation in education. There are also many individual strategies adults with TS can use to help improve their executive functioning skills and manage day to day life.

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