

Study of learning and memory problems in OCD helps young people unlock potential at school

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Adolescents with obsessive-compulsive disorder (OCD) have widespread learning and memory problems, according to research published today.

The findings have already been used to assist adolescents with OCD obtain the help they needed at school to realise their potential - including helping one individual go on to university.

OCD in children and adolescents is a distressing condition, which is often chronic and persists into adulthood. Almost 90% of these young patients have problems at [school](#), home, or socially; with difficulties doing homework and concentrating at school being the two most common problems. Children and adolescents are well set up for learning and, indeed, can quickly pick up new foreign languages, computing skills or motor tasks, such as riding a bike, much quicker than older adults. But if an adolescent is not learning well in school, they are likely to become stressed and anxious.

Researchers at the University of Cambridge have previously shown that there are core problems of cognitive inflexibility in adults with OCD. Since flexibility in problem-solving is an important skill for performance in school, they wanted to study whether adolescents with OCD had difficulty in this area. Cognitive flexibility becomes important when trying to find the correct solutions to a problem, particularly when your first attempt at solving that problem does not work. To reach the correct solution, you have to switch to a new approach from the one you have previously been using.

In healthy individuals, there is a balance between goal-directed control and habit control, and this balance is crucial for daily functioning. For example, when learning to drive, we focus on specific goals, such as travelling at the right speed, staying within the traffic lines and following safety rules. We often have strategies to perform these tasks optimally. However, once we are an experienced driver, we frequently find that driving becomes habitual. In new situations, healthy people tend to use goal-directed control; however, under conditions of stress, they frequently select habitual learning.

In a new study published in the journal *Psychological Medicine*, researchers looked at whether [cognitive flexibility](#) for learning tasks and goal-directed control was impaired early in the development of OCD. The study was led by Dr Julia Gottwald and Professor Barbara Sahakian from the Department of Psychiatry.

Thirty-six adolescents with OCD and 36 healthy young people completed learning and [memory](#) tasks. These computerised tests included recognition memory (remembering which of two objects they had seen before) and episodic memory (where in space they remember seeing an object). A subset of 30 participants in each group also carried out a task designed to assess the balance of goal-directed and habitual behavioural control.

The researchers found that [adolescent](#) patients with OCD had impairments in all learning and [memory tasks](#). The study also demonstrated for the first time impaired goal-directed control and lack of cognitive plasticity early in the development of OCD.

Dr Julia Gottwald, the study's first author, comments: "While many studies have focused on adult OCD, we actually know very little about the condition in teenagers. Our study suggests that teens with OCD have problems with memory and the ability to flexibly adjust their actions when the environment changes."

Professor Barbara Sahakian, senior author, says: "I was surprised and concerned to see such broad problems of learning and memory in these young people so early in the course of OCD. It will be important to follow this study up to examine these cognitive problems further and in particular to determine how they impact on clinical symptoms and school performance."

Experiencing learning and [memory problems](#) at school could affect self-

esteem. Furthermore, some symptoms seen in people with OCD, such as compulsive checking, may result from them having reduced confidence in their memory ability. The stress of having difficulty in learning may also start a negative influence and promote inflexible habit learning.

Dr Anna Conway Morris commented: "This study has been very useful in assisting adolescents with OCD with the help they needed at school in terms of structuring the environment to ensure that there was a level playing field. This allowed them to receive the help they needed to realise their potential.

"One person with OCD was able to obtain good A Levels and to be accepted by a good university where she could get the support that she needed in order to do well in that environment."

Future studies will examine in more detail the nature of these impairments and how they might affect clinical symptoms and school performance.

More information: Gottwald, J, et al. Impaired cognitive plasticity and goal-directed control in adolescent obsessive-compulsive disorder. *Psychological Medicine*; 22 Jan 2018; [DOI: 10.1017/S0033291717003464](https://doi.org/10.1017/S0033291717003464)

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