



# DYSCALCULIA: KEY POINTS

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## Other Difficulties That Can Coexist with Dyscalculia

Children with learning and attention difficulties often have more than one condition. There are several conditions that frequently coexist with dyscalculia. Additionally, the symptoms of certain conditions can sometimes resemble those of dyscalculia, which can make it more difficult to diagnose. Therefore, testing for dyscalculia should be part of a comprehensive evaluation to simultaneously identify any other learning or attention challenges.

Here are some conditions that often occur alongside dyscalculia:

### 1. Dyslexia

It is common for children to have both dyslexia and dyscalculia. In fact, research shows that between 43% and 65% of children with math difficulties also have reading disabilities. This is because both dyslexia and dyscalculia are cognitive processing disorders that affect different areas of the brain, but often share certain challenges, especially in areas of language processing and symbol recognition.

### 2. ADHD (Attention-Deficit/Hyperactivity Disorder)

Dyscalculia and ADHD often occur together. Sometimes, children with ADHD make errors in math due to difficulties with attention to detail or staying focused on tasks. For example, a child may struggle to stay organized or may miss critical steps in a multi-step math problem because they are easily distracted. Some experts recommend reassessing math skills once ADHD symptoms are better managed, as improved focus can help reduce errors.

### 3. Executive Functioning Difficulties

Executive functions are essential cognitive skills that impact learning. These include working memory, flexible thinking, planning, and organization. Deficiencies in these areas can make math difficult. For example, a child may have trouble remembering math facts or organizing their work, which can interfere with their ability to solve problems effectively.

Different types of professionals can assist children with dyscalculia in various ways. Some work in schools, while others offer private services.

Here are some professionals who may help:

- **Special education teachers**
- **Math tutors or educational therapists**
- **Child psychologists**
- **Pediatric neuropsychologists**

While there are no medications specifically for dyscalculia and no specialized teaching programs, children with dyscalculia can benefit from multisensory math instruction. This approach uses all of the child's senses to help them develop skills and understand concepts. It also helps teach math concepts systematically, where one skill builds on the previous one, helping children with dyscalculia form stronger connections to what they are learning.

Support may include assistive technologies or accommodations, such as using a calculator, extra time on tests, or fewer problems assigned for homework. These supports can level the playing field, helping your child access the math curriculum.

Your child may also receive support at school if their teacher provides informal accommodations to assist them in class or with assignments and tests. Additionally, your child might benefit from academic intervention through **Response to Intervention (RTI)**.

## How You Can Help Your Child with Dyscalculia

You play a unique and important role in providing the support and motivation your child needs. From working with the school to developing math skills at home, you can help your child stay motivated to overcome their challenges.

Here are some things you can do:

- Review multisensory math techniques you can use at home.
- Explore software, apps, and tools that can assist your child with math.
- Look for free online assistive technology tools for math.
- Find board games that help develop math skills.
- Learn ways to help your child build their self-esteem.
- Read about how your child can advocate for themselves in elementary and middle school.
- Get recommendations on how to advocate for your child at school.
- Discover your child's strengths.

## Key Points

### 4. Math Anxiety

Children with math anxiety experience intense fear or nervousness about doing math, often leading to avoidance or poor performance on math tests. This anxiety can sometimes be mistaken for a lack of ability, but it is more often related to an emotional reaction to the difficulty of math tasks. Some children may have both math anxiety and dyscalculia, further complicating their learning experience.

### 5. Genetic Disorders Associated with Dyscalculia

Dyscalculia has been linked to certain genetic disorders. These include:

- **Fragile X syndrome**
- **Gerstmann syndrome**
- **Turner syndrome**

These conditions may involve specific learning challenges, including difficulties with math.

### Possible Causes of Dyscalculia

While researchers are still working to understand the exact causes of dyscalculia, certain factors seem to be related to how the brain functions and is structured. Here are some possible causes:

### 1. Genetics

Research shows that some variation in math scores can be explained by genetics. In other words, genetic differences may influence whether a child develops dyscalculia. It is common for dyscalculia to run in families, suggesting that inherited genetic factors may play a role.

### 2. Brain Development

Brain imaging studies have shown differences in brain function and structure in individuals with dyscalculia. These differences are found in areas related to numerical and mathematical processing, such as surface area, thickness, and volume in certain parts of the brain. There are also differences in how brain areas associated with memory, planning, and problem-solving are activated during mathematical tasks.

- **Dyscalculia** is a common learning difficulty that affects children's ability to learn math.
- **Signs of dyscalculia** may look different depending on the child's age.
- There are many **strategies and tools** available to help children with dyscalculia make progress in school and in life.

### 3. Environmental Factors

Dyscalculia has been associated with fetal alcohol syndrome, premature birth, or low birth weight. These factors can interfere with brain development and may contribute to the development of dyscalculia.

### 4. Brain Injury

Studies have shown that injuries to certain parts of the brain can result in what researchers call acquired dyscalculia. This suggests that brain damage can lead to difficulties with math skills, even in children who had normal mathematical development before the injury.

### How Dyscalculia Is Diagnosed

To determine if your child has dyscalculia, an evaluation is required. This can be done at school for free, or you may choose to pay for a private evaluation.

There are specific tests for dyscalculia, but these should be part of a broader evaluation that also looks at other areas. Learning and attention difficulties often co-occur with dyscalculia, so it's important to get a comprehensive understanding of the child's challenges to make an accurate diagnosis.

Evaluations are typically conducted by professionals such as:

- **School psychologists**
- **Child psychologists**
- **Pediatric neuropsychologists**

A psychologist may also assess other potential issues, such as ADHD or mental health concerns like anxiety or depression, as children with learning difficulties are more likely to experience these issues than their peers.

The evaluator might ask for a family history and may ask you to complete questionnaires about your child's strengths and weaknesses. Teachers may also be asked to provide observations from the classroom.

A diagnosis allows your child to receive the appropriate supports and services at school, such as special math instruction, accommodations, or modifications to help them access the curriculum.

### How Professionals Can Help with Dyscalculia