Dyscalculia Infosheet

Dyscalculia is a difficulty with mathematics

Children and adults with dyscalculia often have difficulties with understanding and manipulating numbers and learning mathematical facts.

Dyscalculia is also known as a specific learning disorder in mathematics. Dyscalculia is a brain-based (neurological) disorder or disability. People with dyscalculia often have difficulties mastering number sense, facts and calculations.

Children and adults with dyscalculia often have a family history of dyscalculia or other learning difficulties.

What are the indicators of dyscalculia

- Poor ability to recognise numbers.
- Difficulties with basic math skills such as counting, sequencing and operations.
- Problems with remembering maths facts.
- Persistent use of ineffective math strategies.
- Older students will show increased anxiety with mathematics and negativity.
- Older students may continue to have some issues with maths facts and number sense as well as having difficulty with multi-step problems.

Intervention to support a person with dyscalculia

Students with dyscalculia can improve their mathematical skills. Early identification and early intervention can make a significant impact for students with dyscalculia to ensure they do not fall too far behind in the development of their mathematical skills.

Students benefit from explicit and structured instruction in mathematical skills and concepts using manipulatives.

Students with dyscalculia will generally need lots of opportunities to practise mathematics and so can benefit from working with learning support teachers, systematic mathematics programs or working with experienced tutors.

How is dyscalculia identified?

An **educational assessment or diagnosis** can be an important step in identifying strengths and weaknesses, assessing the best approach to intervention and ruling out other causes and comorbidities for a child or adult who has difficulties with mathematics.

Dyscalculia is generally diagnosed by a psychologist. (The diagnosis of a specific learning disorder cannot be made by someone who assesses vision, hearing, movement or any other skill in isolation.)

The psychologist will investigate learning strengths and difficulties. Tests used in an assessment may include standardised measures of: intellectual ability and cognitive skills, expressive and receptive language ability, underlying processing strengths and weaknesses and academic achievement across a range of domains.

Before a diagnosis of a **specific learning disorder in** mathematics (or dyscalculia) is able to be made, it is essential that the child or adult being assessed has received at least six months of intervention focused on improving their mathematics skills.

> **"prior to a formal assessment, it is important to ensure that children are provided with well-designed instruction targeting the area in which the child is struggling. This instruction should be explicit, systematic and cumulative and needs to form the basis of an intervention that continues for at least six months."**
>
> Understanding Learning Difficulties Guide for Parents, 2019

Before seeking an assessment or diagnosis of dyscalculia it is also important to check eyesight and hearing. A GP or audiologist can assist with screening of hearing and an optometrist can screen eyesight.

Adjustments to support a person with dyscalculia

Students and adults with dyscalculia can benefit from adjustments made to their school or work environments.

> **"An 'adjustment' is a measure or action taken to assist a student with disability to participate in education and training on the same basis as other students."**
>
> Students with Disability, The Australian Curriculum

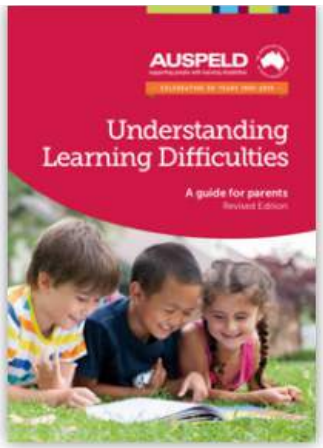
Adjustments to learning are very important for students struggling with mathematics and should be implemented in conjunction with appropriate intervention.

Adjustments need to be tailored to the individual and will change over time.

Adjustments include:

- assistive technology such as calculators
- mathematical apps and software
- extra time to complete tasks
- allow use of memory aides for mathematical facts (eg, times table charts)
- break mathematical problems into steps
- provide concrete apparatus and manipulatives
- provide list / diagram of the steps in key maths processes
- pre-teach key vocabulary and provide maths dictionary
- make allowances for poor working memory in relation to giving instructions and general school organisation
- directly send parents/carers important information, homework and assessment tasks

More information



AUSPELD Understanding Learning Difficulties: A Guide for parents

AUSPELD Specific Learning Disorders Flowchart

International Dyslexia Organisation: Fact Sheets

Understood.org