

# SEND AWARE

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## Dyslexia Special 2013

### Reading depends on good Hearing- Warbles

Currently most people who work on dyslexia believe that the main cause of reading difficulties is failure to acquire the skill of separating the sounds of words into their separate phonemes to match with the letters that represent them ie they have a linguistic 'phonological' weakness. It is certainly true that most dyslexics have this problem. The basic requirement of reading is to translate letters into their sounds, so the phonological theory merely restates that they cannot read. More interesting is to find out why they have this problem. What is the brain difference that underlies it?

Letter sounds are distinguished from each other mainly by changes in speech amplitude and frequency. We can understand speech because the auditory system is adapted to pick up these amplitude and frequency modulations (AM & FM). So we have been measuring how well adult dyslexics and good readers can

hear simple changes in amplitude (AM) & frequency (FM); the stimuli sound like warbles.

We found that the dyslexics were indeed significantly less sensitive at hearing these warbles. Whether you are a dyslexic or good reader, your sensitivity to these simple sounds seems to help determine how well you can develop phonological skills. Thus it seems that your basic auditory AM & FM sensitivity plays a very important part in the development of phonological skill.

In the auditory system M-cell function is to track these FM and AM variations in speech sounds. Like those in the visual system, auditory magno-cells seem to fail to develop quite normally in dyslexics. Hence dyslexics often have difficulty distinguishing similar sounds such as 's', 'sh', 'th', 'f'.

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### WHAT TO LOOK FOR TO AID DETECTION

- Difficulty gaining basic literacy skills- difficulty producing written work
- May have gained some reading skills but struggles to spell
- May keep a low profile or may have behaviour challenges
- May appear clumsy and disorganised
- May struggle to produce the level of work that their verbal ability level suggests
- May manifest in difficulty recalling or retaining information, such as times tables in mathematics
- May have wonderful comprehension skills but poor decoding skills
- May work incredibly slowly and never finish written work
- Other challenges include: working memory, speech, auditory / visual perception, motor skills and sequencing.

### INSIDE THIS ISSUE:

- What to look for in dyslexia
- Strategies to support children with dyslexia
- What parents can do to help their child
- Maths and dyslexia versus dyscalculia
- Quick checklist of a dyslexia profile
- Checklists included for both dyslexia detection and dyscalculia

## KEY CHARACTERISTICS AND THEIR EFFECT IN SCHOOL

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If they confuse sounds like this, it is not surprising that they often fail to match the sounds correctly with the letters that stand for them, and this may underlie their phonological deficit.

Several methods have been developed for training young children's auditory skills to hear these amplitude and frequency changes more easily, such as teaching them rhyme, rhythm and music. Music skills turn out to be important for learning to read as well as to appreciate music. Also adaptive computer programmes that emphasise the sound changes have been developed that show promise for helping dyslexics with auditory weaknesses.

### In school

*Literacy difficulties:* these can colour a child's whole view of school and learning. Imagine being asked to sing in front of a group of people (your peers or not) and the stultifying fear that engulfs most of us thrust into this situation. This is the feeling experienced by many children in class when asked to read aloud. They are not concentrating on the other children reading because they are desperately trying to read their passage before the teacher reaches them. They are unable to understand other children who may be struggling themselves and they will lose the flow of the passage.

*Memory difficulties:* imagine the amount of instruction and information given out every day in your

classroom. Children with working memory challenges will struggle to hold information and do what you want them to do. They will appear disorganised as they will not be able to sequence instructions. They will find recall under timed conditions stressful and will avoid answering as a result.

*Processing speed:* children who process slowly will struggle to blend when reading. They will need a high level of support to break words down into more manageable-sized chunks to help them with recall and fluency. They will not be able to assimilate information as quickly as other children and will appear confused about what they should be doing and how they should be approaching more complex tasks.

### This is what children with dyslexia say:

- \*Check if I have understood before I start
- \*Let me ask questions more than once
- \*Do not give instructions too fast
- \*Give me time to do the work-do not keep me in at break-time if I have tried to finish
- \*Make sure I can see the board and hear you
- \*Do not remove supports too quickly
- \*Do not shout, embarrass or single me out

## WHAT FAMILIES CAN DO TO SUPPORT THEIR CHILD

Parents and families have a crucial role to play. Although not every school, as yet, has a dyslexia specialist in place, we do at Huntingtower. This means that we can quickly evaluate a child's needs and assess whether there are aspects of dyslexia that are impacting upon your child's progress in school. However this also means that, as parents, you need to be giving your child the right support.

Dyslexia can be affected positively and negatively by the environment both in school and at home. To ensure that a child can develop good skills, even if there is a profile of dyslexia, parents need to:

- \*Talk to their child, encourage them to ask questions, to talk through their day at nursery, school or wherever
- \*Offer opportunities to visit a range of places and have different experiences that can help children to make links between words, sentences and language
- \*Read to your child as well as hearing them read. Encourage them to ask you questions about what you are reading to them
- \*Give lots of opportunities to become inquisitive about topics, to research, and to talk

# MATHS AND DYSLEXIA VERSUS DYSCALCULIA

Dyscalculia is used to describe specific difficulties with mathematics. In many ways it is the mathematical equivalent of dyslexia, which is a specific difficulty with literacy.

We know that there is considerable overlap between dyslexia and dyscalculia. There is somewhere between 20-60% of children with both. Deficits in language and working memory may well create problems in the acquisition of both mathematics and literacy skills. However, the two disorders can also exist in isolation from each other.

It is generally agreed that mathematical competence depends on the effective functioning of:

- \*Language skills
- \*Visuo-spatial skills
- \*Memory

In dyscalculia the language of mathematics can be challenging: *more, less, bigger, twice, before, after, the same as, enough*. This can also be evident in language related to

## OUTCOMES-HOW BRIGHT IS THE FUTURE FOR CHILDREN WITH DYSLEXIA?

We know more than ever before about dyslexia and its impact upon a child's development, including emotional issues. Previous government initiatives looked to put support in school for interventions and to develop greater understanding of what dyslexia-friendly teaching looks like. There has been media interest and programmes involving celebrities sharing their life stories and their experiences of growing up with dyslexia. There are specialist services in local authorities, colleges and universities provide support, counselling and aids for children and young adults studying at their institutions. We must continue to be vigilant, to assess and put interventions in place so that no child is overlooked. The future can be bright if we work to make it so. Together we can do this.

Time, position, relation and size: *the day after tomorrow, fewer than, bigger than my one*.

Language difficulties also affect the understanding of what they are saying: *two plus two equals four, first I write down three, then I carry four*. Words do not mean the same in mathematics and need explaining and making concrete: *counting backwards, take away food, ten to two or ten times two?*

A child with dyscalculia may not be able to make a visual representation of a maths concept: *teens numbers are said one way and written another, letters do not represent the sound we make when we say them*. Children may not be able to judge measurements or distances and so struggle to know what units to use. Setting out maths is crucial and relies on spatial skills.

Where memory is concerned, a child with dyscalculia may have difficulty storing and retrieving information for calculation, they may not keep the correct order for calculating, leading to errors. Children may know the answers in mental maths but not be able to remember the questions! Long term memory challenges mean that children cannot recall the basic number facts that underpin everything that we do: *6x3 is the same as 3x6, double 12 is 24, half 24 is 12*.

Attitude and emotional responses to maths colour our approach into adulthood. For more information:

[http://www.interdys.org/DC\\_Impact\\_of\\_Dyslexia\\_on\\_Math.htm](http://www.interdys.org/DC_Impact_of_Dyslexia_on_Math.htm)

<http://www.dyscalculia.org/>

<http://aboutdyscalculia.org/>

*A checklist is attached to help to identify potential maths issues. Use this to assess the likelihood of dyscalculia.*

# CHECKLIST-ONE, SOME, OR ALL OF THESE

Learning **strengths** to use:

## VISUAL MEMORY:

- Pictures
- Colours
- Humour
- Drawing
- Art
- Background
- Shapes
- Position on page
- Clothes
- Facial expressions

## AUDITORY MEMORY:

- Voice tone
- Accents
- Music
- Rhythm
- Own voice (verbalising)
- Tapes/CDs/Video

## VIDEO MEMORY:

- Visual
- Sound
- Movement
- Colour
- Order of events
- Place

## 3D MEMORY:

- Visualisation
- Construction
- Design
- Colour
- Movement

## MOTOR MEMORY:

- Making
- Doing
- Tracing
- Copying
- Gross movement
- Touching

*Checklist attached for your information*

## WHO IS THERE TO HELP?

<http://www.dyslexia.uk.net/>  
<http://dyslexiaaction.org.uk>  
<http://www.dyslexiahelp.co.uk/>  
<http://www.bdadyslexia.org.uk>  
[www.dyslexiasuccess.com/](http://www.dyslexiasuccess.com/)  
<http://dyslexialincolnshire.org.uk/>  
<http://www.patoss-dyslexia.org/>  
<http://www.dyslexiatraininginstitute.org/>  
<http://www.arkellcentre.org.uk/>  
<http://www.dyslexiaden.co.uk/Local-Groups.html>  
<http://www.thedyslexia-spldtrust.org.uk/4/resources/17/resources-for-schools/>

*This is not an exhaustive list but check the credentials of any site before taking it at face value*

Need more advice? Want to know more? Come and see DB!



**SUMMER IS AROUND THE CORNER!**