

so as you progress makes it more difficult by trying the smaller text.

Ann Arbor Letter Tracking – a series of exercises based on the order of letters in the alphabet. Carefully follow along each line of nonsense words, looking for the first letter ‘a’, continue in the same direction and look for the first letter ‘b’ and so on until by the time you reach the end of the passage you should have found every letter in the alphabet in order. Time yourself – Can you get faster?

Saccade exercises can also be found on-line at:

www.eyecanlearn.com/tracking/saccades/

These are a series of exercises, some on-line and some suggesting you print them out, to help improve saccades. The ‘Number Saccade’ exercise is similar to the Developmental Eye Movement Test used in the clinic and can be used at ‘slow’, ‘medium’ or ‘fast’ speed.

Remember to keep your head still – just use your eyes as you follow and call out each number as it appears along the lines.

Ace Reader: Speed reader and vision training software – can be downloaded

for a free 30 day trial at www.acereader.com

Family Games:

Any game with a tracking element e.g. Snakes and Ladders or other board games.

Wii games or tablet games with a tracking element.

Other Useful Activities:

Word Searches, Dot –to-dot, tracing activities, Mazes, Colouring in all the letter ‘O’ in a magazine or newspaper.

Tip: Try printing the paper based exercises

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Please contact the Patient Advice and Liaison Service (PALS) if you require this leaflet in a different format, or would like to feedback your experience of the hospital.

Email: ruh-tr.pals@nhs.net or telephone 01225 825656 or 826319.

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Oculomotor Dysfunction & Tracking Exercises

Specific Learning Difficulties

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How do our eyes move when we read?

Reading involves complex eye movements. In order to read fluently along a line of text our eyes need to make short, rapid eye movements from one word to the next without overshooting or undershooting. These eye movements are called saccades and in between each saccade our eye movement must stop to fix on the word being read. At the end of each line our eyes need to make a sweeping movement backwards and downwards to accurately locate the start of the next line.

When these eye movements are poorly controlled or defective it affects our ability to read. We call this an **Oculomotor Dysfunction or Tracking Defect**.

What are the symptoms of Oculomotor Dysfunction?

- Difficulty reading fluently.
- Losing place or start of next line.
- Missing out words or lines.
- Repeating words or lines.
- Adding words or transposing them.
- Using a marker or finger to follow the lines.

- Finding top lines of text easier to read than middle sections.
- Moving head and/or body instead of eyes when reading.
- Poor understanding of text being read.
- Difficulty copying from white board.

How do we know there is a tracking defect?

The Orthoptist will carry out a careful examination by observing how well the eyes move together during:

- Following movements – where a moving target is fixed and followed.
- Saccades – where the eyes are moved from one target to another on instruction both horizontally and vertically.
- Anti-saccades – ability to fix on one target and when a flashing light occurs ignore instinct to look at the light but switch fixation to a second target.
- Observation of head and body movements during eye movement examination and reading.
- Developmental Eye Movement Test (DEM) – a timed test comparing the speed at which numbers are read vertically down the page to horizontally across the page.

What can we do to improve eye movements when reading?

The basic principle in any rehabilitation exercise is **repetition**. By repeating certain behaviours, in this case saccadic eye movements, we can form new neural networks in the brain.

The orthoptist will advise you on a suitable course of eye tracking exercises.

Tracking exercises

The aim with all these exercises is to practise using your eyes to make the short accurate movements required between the symbols or words whilst keeping your head and body still and without pointing or using a marker.

Rainbow Readers Books 1 & 2: A series of exercises based on symbols to improve tracking in children who lose their place, skip words or lines, reverse words or letters. Choose a different symbol each time. Carefully look along each row of symbols in turn and mark the sheet each time you find the exact symbol chosen. Watch out for subtle differences in direction or orientation of the symbol. The symbols are graded in size and spacing