

Handwriting and Dyspraxia

**Lois M Addy MA (Ed) BSc (Hons) Psych. Dip COT SROT
Senior Lecturer. School of Professional Health Studies. York St. John College.**

Lois Addy is a Senior Lecturer in the School of Professional Health Studies at York St. John College, which is part of the University of Leeds. She is a qualified occupational therapist who has worked in the field of paediatrics for over 20 years. She is co-author of 'Write from the Start' Perceptuo-motor handwriting programme, The 'Speed-Up! Kinaesthetic handwriting programme', and 'How to Understand and Support Children with Dyspraxia' all by LDA Ltd. She is also co-author of the book 'Including children with dyspraxia' by Routledge Press.

One of the primary symptoms of dyspraxia is poor handwriting. This is due to poor motor skills, perceptual dysfunction and erratic organisation and motor planning. Due to the volume of writing required in school today, difficulties in this area have a profound effect on the child's academic performance and subsequent confidence. The following suggestions provide some practical advice to alleviate some of the anxiety and concerns brought about by poor handwriting.

Posture

It may seem simplistic to mention posture but it is very important that children are seated with feet securely on the floor and knees and hips bent at a 90° angle. The height of the table should equate to the elbow height when seated. In classrooms today furniture is standard; however we do not have standard-sized children so foot blocks or different furniture may be required.

Positioning of paper

The paper should be positioned at a slight angle in alignment with the child's arm be this a left or right diagonal. Children should be encouraged to hold their paper with the opposite hand, if this proves difficult buy a sheet of thin non-slip matting (Dycem) to position the paper and encourage the placement of the opposite hand by drawing a stencil of the ideal position using a permanent marker pen.

Pencil Grip

It is common to see children with dyspraxia holding the pencil awkwardly, and struggling to achieve a tripod grip which incorporates the thumb, index and middle finger. This is often due to poor sensory feedback and motor planning difficulties. To help to achieve this grip try:

- Pencils with triangular barrels such as hand huggers
- Pencil grips available from LDA, Early Learning Centre
- Mould individualised pencil grips to aid finger position using FIMO clay which hardens when in the correct position
- Introduce the finger pen available through KT Sales Ltd which is a 3 cm ball point pen which fits onto the tip of the finger and encourage the tripod position
- Introduce the ring pen (Nottingham Rehab) which helps to position the pen correctly in alignment with the index finger
- Try this alternate position; place the pencil between the index and middle finger with the main shaft of the pencil on the upper surface of the hand, the pencil is then controlled by the thumb while positioning the wrist on the writing surface. This is effective and comfortable.

Heavy Pressure

Heavy pressure through the writing instrument can slow writing output significantly. We know that many children with dyspraxia struggle to monitor pressure through their limbs due to what is termed poor proprioception, therefore we need to help the child to develop an awareness of the amount of pressure placed through the limbs, the upper limbs in particular.

The following will help:

- Regularly undertake a series of exercises whereby pressure is placed through the upper limbs, i.e. crawling games, wheelbarrows, ladies press-ups, elephant walks etc. These should ideally be incorporated into a daily schedule
- Provide a light-up pen which can be bought cheaply from stationary shops. Challenge the child to write so that the light does not come on.
- Play a game of MI5; provide a pad created by placing a layer of paper alternately with carbon paper. Ask the child to write a secret message so that only one agent can read it. Initially the pressure may make the child write so that the message can be seen on 3 or 4 copies but by encouraging the child to self-monitor pressure will reduce.
- Use a hard leaded pencil such as HB so that writing is not easily smudged.

Light Pressure

Some children with dyspraxia will have the opposite problem to that described above in that they will not apply enough pressure through the writing instrument. This will affect control and will make writing appear 'spidery' and poorly formed. To help with this:

- Provide an angled board. The angle should be approximately 25° this will ensure that the wrists are positioned on the writing surface.
- Provide weighted wrist-bands which would provide additional sensory feedback to the wrist area, increasing the child's awareness of their hand, wrist and arm position.
- Lower the table slightly so that the hips are flexed more than 90°. This enables the child to obtain the assistance of body weight to assist with pressure through the writing instrument.
- Use softer leaded pencils such as 2B so writing appears darker

Fine Motor Control

The combination of poor sensation, inadequate tactile sensation and poor pressure awareness will result in poor motor control and the child may need to practice simple motor tasks to develop an ability to track and scan ahead

To develop this:

- Introduce puzzles such as mazes; grade these in complexity
- Use electronic tracker games where a buzzer sounds if the wire is touched, these usually come with 3 levels of difficulty
- Use dot to dot puzzles
- Button and bead threading games
- Cutting out complex outlines with scissors
- Pattern making using geoboards
- Construction activities such as Lego and Knex
- Encourage creative activities such as collage, papier mache.

Writing alignment

As many children with dyspraxia struggle to plan and organise their movements, they will also find writing across the page in a left to right horizontal direction very difficult. Guidance is therefore needed to help them with writing alignment:

- Always use lined paper rather than a line guide which easily moves.

- Mark a margin at the left hand side in a clear colour or place starting points at the left margin to reiterate where each line of writing should start.
- Create coloured lines on plain or pastel coloured paper encouraging the child to write on a different colour each line (this can be done easily using a computer with colour printer)
- If a child has significant difficulties in this area, create coloured bands across the paper (rather than lines) encouraging the child to write within each band before proceeding to the next.
- Provide 'Right line' or 'hint-print' paper which incorporate lines which are slightly raised giving a tactile reference when writing each letter.

Letter Formation

It may seem incomprehensible why children with dyspraxia cannot seem to reproduce familiar letter shapes and forms even when these are placed directly in front of them. This is due to poor form constancy, a vital perceptual skill. To develop an appreciation of form it is important to use a variety of multisensory activities to reinforce the child's appreciation of shape and size:

- Play games which reinforce shape and size i.e. sorting boxes, ball games, shape stencils, Spirograph,
- Create shapes using dough or clay encouraging the child to mould and knead the material into a clear shape (this reinforces tactile sensation).
- Create letter forms out of play-doh and see if the child can detect what the shape or letter form is with their eyes closed (this reinforces proprioception and tactile sensation)
- Encourage the establishment of individual shapes before introducing new ones i.e. clearly produce a circle before an oval or square.
- Use 'Rol n' Write Alphabet' sensory forms to help with direction of form
- Using an index finger create letters and shapes in trays of sand, shaving foam, or silly soap.
- Write letters on rough sandpaper using a variety of medium i.e. soft leaded pencils or wax crayons (the fine vibrations reinforce kinaesthetic sense)
- Develop an appreciation of form using sections from the 'Write from the Start Perceptuo-Motor Handwriting Programme' especially sections 1A-2A.
- Encourage sequencing in respect to size (jigsaw puzzles can be bought from LDA Ltd)
- Use outlines to reinforce letter shapes i.e. broken lines, dot to dot.
- Use the Charles Cripps 'A Hand for Spelling' programme to reinforce letter shapes

Letter orientation

It is often a common complaint that children with dyspraxia frequently invert or reverse letter forms so that confusion arises between p/d, b/d, p/q, t/f, m/w, u/n. In addition letters may be formed in reverse with the letter 'o' being produced in a clockwise direction rather than anti-clockwise. To help this;

- Use 'Rol n' Write' forms which help the child to appreciate the direction of writing
- Introduce Finger Phonics books from the Jolly Phonics series which provides an indented image of each letter to help formation
- Provide a starting arrow to show which way a letter should be produced ie the letter c is orientated in an anticlockwise direction and the letter b requires a clockwise orientation.
- Join letters as early as possible (even in Reception) this significantly helps with orientation
- If the p and b continue to be used interchangeably open formation to **b** **p**
- Use odd one out games to help the child to determine discrepancies in orientation.
- Write letters in the air using whole arm movements with eyes closed to reinforce kinaesthetic appreciation of letter orientation.

- Develop a sense of directional orientation using games such as ‘Bop it Extreme II’ available from most Argos Stores

Spatial Organisation

The majority of children with dyspraxia will struggle to judge distances and assess space, this will not only effect gross motor skills but will also have a bearing on handwriting. Spaces between words may be omitted or placed erratically. This results in text becoming increasingly illegible. It is therefore crucial to teach the child how to provide adequate spaces between words and to space letters appropriately. To do this:

- Use the ‘Write From the Start Perceptuo-Motor Handwriting Programme’ especially section 2B.
- Practice writing on grid paper placing each letter in a square and a space between each word.
- Introduced joined writing very early in the child’s education, this is guaranteed to improve spatial organisation
- Place a finger tip after each word before writing the next word.
- Play games which involve judging distances i.e. obstacle courses
- Use board games which involve spatial organisation such as connect 4, peg board patterns etc
- Play ‘How many steps?’ standing with the child, ask ‘how many steps will it take you to reach that chair? The child then guesses. They are then encouraged to take those steps and monitor their own movement. Initially the child may grossly under or overestimate the distance, but with time the estimations gradually become more accurate.

Writing Flow

Children who do not have adequate feedback as to their body position will lack a sense of rhythm. This will be apparent in their walking which may be heavy and awkward. Poor rhythm will also have a bearing on handwriting and children with dyspraxia may be so intent on forming the letters correctly that writing lacks flow, becomes very laboured and is increasingly slow resulting in limited output. This becomes an increasing concern when the child progresses through Key Stage 2 and onto Key Stage 3 where there is an increased expectation in the volume of written work and speed of output.

- Introduce a variety of letter patterns i.e. CCCCCCCCCC and attempt these to music, alternately follow a programme such as Callirobics™
- Introduce programmes such as ‘Joining the ABC’ by Charles Cripps, ‘Movement into Handwriting’ By Prue wallis Myers or ‘Structured Cursive Writing’ by Chasty and Phillips.
- Enjoy the activities in the ‘Write Dance’ programme by Ragnhild Oussoren Voors
- The Speed_up!’ kinaesthetic handwriting programme is specifically designed to increase fluency and speed up handwriting for children aged 8 years and above.

Augmentative technology

As the expected volume of handwriting increases each school year so too will the child’s level of anxiety. It is at this time when a computer may be considered. This may be around the age of 8 or 9 years. At this point word-processing can be introduced in parallel with handwriting. The child may eventually become more proficient at using a computer over hand skills or vice versa. It is important that the computer or keyboard is carefully selected and that the right scheme is introduced to help the child develop new skills. It is not important that touch typing is achieved with all fingers but that the child’s abilities are utilised fully to appreciate the technology available to him/her. The following contacts and references will help with this process.

- www.AbilityNet.org.uk will provide an assessment and impartial advice to ensure that the right technology and software are available to the individual.
- The British Educational Communications and Technology Agency (BECTA) provide a wealth of advice about appropriate technology and supportive programmes to help the child gain new skills. Contact: BECTA, Milburn Hill Road, Science Park. Coventry CV4 7JJ Tel: 024 7641 6994
- Read Penso, D.E. (1999) 'Keyboarding Skills for Children with Disabilities' Whurr Publishers
- Consider schemes which introduce computer skills and word processing such as the Usborne Series i.e. Windows 98 for Beginners (1999) by Anna Milbourne, from Usborne Publication Ltd

The recommendations provided above are not an exhaustive list by any means and there are numerous other sources where information can be gained. In particular the Handwriting Interest Group specifically address handwriting issues in school's today, they offer information on handwriting programmes, research relating to handwriting, and materials which can assist in improving handwriting.

Handwriting Interest Group Annual membership (UK) £15
 Sue Henderson Administrator HIG
 5 River Meadow
 Hemingford Abbotts
 Huntingdon
 Cambs
 PE29 9AY
<http://www.handwritinginterestgroup.org.uk>

Resources

A Hand for Spelling

by Charles Cripps
 Programme which teacher spelling and handwriting together.
 Available from LDA
 Duke Street
 Wisbech
 Cambs PE13 2AE Tel: 01945 463441
www.LDAlearning.com

Bop It Extreme II

Argos Stores

Calliobics™ by Liora Laufer

These are a unique concept in handwriting exercises. They consist of repetitive simple writing [patterns](#) (straight and curved lines) to music. The music relaxes the participants and adds rhythm to their exercises. With music the exercises become fun instead of tedious penmanship chore. Music also benefits participants who learn better through auditory, instead of visual means.

P.O. Box 6634
 Charlottesville, VA 22906
 1-800-769-2891
 FAX 1-434-293-9008

Disney Wrist Sweat Bands (can be weighted to encourage wrist to be placed down on paper)

Available from: Toys R Us

Dycem Matting

Nottingham Rehab supplies

Ludlow Hill Road

West Bridgford

Nottingham

NG2 6HD Tel: 0115 936 1911

Finger Pens

Available from: KT Sales Ltd.

6, Culverton Hill

Princes Risborough

Buckinghamshire

HP27 ODZ Tel: 01844 345891

Hand huggers

Triangular barrel pens, pencils and crayons

Available from: Sanford UK

Oldmedow Road

Kings Lynn

Norfolk PE30 4JR

Tel: 01553 761221

Handwriting Without Tears

by Jan Olsen

Psychological Corporation

Freeport WD147

Harcourt Place

32 Jamestown Road

London

Hint Print Paper

OT Ideas Inc

124 Morris Turnpike

Randolph

New Jersey 07869

Joining the ABC

by Charles Cripps

Available from LDA (Address above)

Jolly Phonics

By Lloyd, Wernham and Jolly

Formative Fun Stores and many Early Learning Centre outlets

Loops and other Groups

by Mary Benbow

Psychological Corporation

Freeport WD147

Harcourt Place, 32 Jamestown Road

London NW1 1YA

Movement into Handwriting

by Prue Wallis Myers
Drake education Associates
St. Fagans Road
Fairwater
Cardiff
CF5 3AE

Right Line Paper with raised lines

Available from Taskmaster Ltd
Morris Road
Leicester
LE2 6BR
Tel: 0116 270 4286

Ring-Pen

Available from Nottingham Rehab supplies
Ludlow Hill Road
West Bridgford
Nottingham
NG2 6HD Tel: 0115 936 1911

Speed-Up

Available December 2003 LDA Ltd
Duke Street
Wisbech
Cambs PE13 2AE

Structured Cursive Writing by Chasty and Phillips.

A structured multi-sensory handwriting programme.
Available from: Ann Arbor Publishers Ltd
P.O.Box 1
Belford
Northumberland NE70 7JX
www.annarbor.co.uk

Teaching Handwriting: continuous cursive handwriting and how to teach it.

By Henderson, E. Bodle, K. Stratton, S (2001)
The Beacon Office,
Oldfield School
Chiltern Road
Maidenhead
Berkshire
SL61XA
Tel: 01628 675876
Email: oldfieldbeacon@btinternet.com

Tri-go grips

Uniquely designed contoured pencil grip
Available from: LDA (As above)

THRASS (The handwriting, reading and spelling system)

4 double sided A3 sheets: A word-spelling copy book, a sound-spelling copy book, a word-spelling form, a sound-spelling form, 2 tapes and course notes.

Available from; Write Track

11A Kilmorey Park

Chester

CH2 3QS

Tel: 877 768 4332 Internet Site: www.otideas.com/order.htm

Write Angle

Angled board, non-slip surface, non-slip feet

Available from: Philip and Tacey

North Way

Andover

Hants SP15BA

Tel: 01264 332171

Write Dance by Ragnhild Oussoren Voors

Lucky Duck Publishing Ltd

34 Wellington Park

Bristol

BS8 2UW

Tel: 0117 9732881

Website: www.luckyduck.co.uk

Writestart Desktop

Angled board set at 20, non-slip surface

Available from: LDA (as above)

Write from the Start

By Ion Teodorescu and Lois M Addy

A Perceptuo-motor approach to handwriting. Programme consists of Book 1-120 pages, Book 2-136 pages and Teachers manual.

Available from: LDA

Duke Street

Wisbech

Cambs PE13 2AE Tel: 01945 463441

Write on Target

by Suzanne Tiburtius.

A structured fast and effective way to teach cursive handwriting.

Manchester: Dextral Books

Further information available from:

Dyspraxia Foundation, 8 West Alley Hitchin Herts SG5 1EG

Helpline Tel: 01462 454986

Admin Tel: 01462 455016

Fax: 01462 455052

Web: www.dyspraxiafoundation.org.uk

© Dyspraxia Foundation