

LEICESTERSHIRE AUTISM OUTREACH SERVICE

Developing Handwriting Skills for Individuals with Autistic Spectrum Disorder



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Handwriting and individuals with Autistic Spectrum Disorder:

There are a number of reasons why individuals with Autistic Spectrum Disorder (ASD) may find handwriting difficult. These might include:

- **Sensory Difficulties**
- **Poor Motor Skills**

Often individuals with ASD may appear able in specific areas of language and communication but are unable to transfer these skills into the area of handwriting. Although individuals with ASD may well be good at learning facts in specific contexts, often they find it difficult to generalize information into broader contexts.

Dysgraphia – is poor fine motor control resulting in poor handwriting. Although there has been little scientific evidence studying this specific area, research in the Netherlands (Journal of Autism and Developmental Disorders 2004) highlights that there is a link between Dysgraphia and individuals on the Autistic Spectrum, particularly those with Asperger's Syndrome.

Individuals with ASD might be either hyper or hypo sensitive to light, sound, crowds and other external stimulation. Many individuals with ASD do have some level of fine and gross motor difficulty. This often manifests itself in poor handwriting and difficulty with athletic co-ordination.

Processing Sensory Information:

- Responses to sensory stimulus can cause stress and anxiety as individuals attempt to interpret their environments
As individuals attempt to process sensory information their ability to concentrate and stay focused may become impaired
Individuals may well appear off task as they attempt to screen out information and sensory input others may not be aware of
- Often individuals with ASD have difficulty processing information that is presented too rapidly, producing overload and shut down of their ability to understand and respond, including following conversations and instructions
- It is important to give individuals with ASD a little extra time to respond (this is known as latency), in order for them to process information
- Individuals with ASD are often better visual learners
- Processing sensory information might also be inconsistent, reactions may vary and responses are often unpredictable

Improving Learning for Individuals with ASD:

- Often it is important to use an eclectic approach as no one particular approach has been proven to work best with all individuals
- Consistency is important, this does not mean rigidity and control but being systematic with dependable environments
- Individualised learning, where Individual Education Plans (IEPs) set out clear, achievable targets
- Providing frequent 'short rest breaks' in which the individual can engage in self directed activities
- Providing short sensory-input breaks where the individual may require additional drinks, snacks or other heightened reinforcers
- Try always to point out things the individual should be doing rather than making reference to those things they should not be doing
- Try to limit sensory overload by allowing individuals opportunity to begin before or after other individuals on specific tasks to reduce levels of anxiety and allow transition from previous tasks
- Providing time restraints can sometimes provide individuals with a clear indication of tasks, use of sand timers, 'finish' bags or boxes also help the individual to organise their thoughts within a session. This needs to be treated with caution, some individuals might respond by focussing on the timer to the detriment of the task, whilst other individuals exhibit more levels of anxiety and prefer open-ended time activities
- Use the individual's strengths
- Use of simple relaxation techniques to reduce anxiety

Use of Motivators and Rewards to Improve Learning for Individuals with ASD

- Displayed and celebrated examples of individual's own work
- Individuals are often best motivated by using things that are of special interest to them or by incorporating special routines

Posture and Motor Development to Assist Individuals with ASD in Accessing and Improving Handwriting Skills:

- **Postural control** – often the inability to hold the body so as to provide the stability that is required for the upper extremities, i.e. the arms and the hands to move in a controlled manner
- **Motor control and motor memory** – The means of controlling the arms and the hands. Our eyes and our muscles guide our movements. Children with difficulties in this area will rely heavily on their eyes to check the movement, where children have other sensory impairment and their attentions are distracted, distorted or overloaded this can cause attention difficulties and writing becomes a very slow, and in some cases, painful process
- **Motor Planning** – This is the ability of the brain to organise and carry out a sequence of activities and actions. There are many different elements to writing. The ability to see individual letters, to form the letters and place them

in sequence within individual words. Often individuals with impairments in this area may see tangles, disjointed or unconnected images

Specialist Equipment to Assist in Teaching Handwriting for Individuals with ASD:

- Access to Occupational therapy advice
- Angled writing boards or the use of folders to lean on / raise writing
- Specialist seating, desks, cushions, footstools as advised by physiotherapists and occupational therapists to gain most suitable writing positions
- Using an adult as a scribe, encouraging a child to provide a sentence for an adult to write so that a child can copy
- Specialist pencils / crayons / pens: Specialist pencil grips and holders
- Specialist scissors
- Paper holders “Page up” support, when encouraging children to copy write from texts or other sources
- “Hold and Read” paper grips to prevent Pages turning when copying materials or when writing in books
- Left-handed scissors / pens if required
- Supportive technology – talking speech output devices, spell checkers
- Specialist / picture dictionaries
- Specialist IT support, writing with symbols (WWS), clicker, textease and so on

Handwriting Exercises to Assist in Developing Fine Motor Control:

1. Mickey Mouse Ears – place fists next to ears, squeeze, fingers open close
2. Desk Push Ups – hands flat on desk, thumbs and pointer tips facing each other (creating a triangle), bend elbows, nose into triangle created between hands, then up again and repeat
3. Windshield Wipers – arms above head, cross straight arms then put bottom arm over top hand
4. Scissor Cuts – same as above only arms are pointed straight down with palms up
5. Shoulder Shrugs
6. Door Knob Turns – arms in front, elbows slightly bent, turn hands towards thumbs at wrists and return to position
7. Good Morning – hands held opposite elbows, lift in a single motion over the head, return to waist
8. Finger Opposition – hold fingers next to ears, touch thumb to each finger (i.e. pointer, middle, ring, pinkie) and back again
9. Butterflies – hold arms straight in front of body, make an X with thumbs, palms facing out, make small circles to the right and to the left

Other Exercises Include:

- Dough work – rolling, squeezing actions
- Use of Therapy Putty – different strengths to improve and develop fine motor control
- PE games and activities involving pushing, pulling, twisting, turning at wrist, elbow and shoulders
- Development of pincer grip with small objects and equipment
- Songs and rhymes to develop fine motor control, for instance, Tommy Thumb; I Have 10 Fingers; Two Little Dicky Birds and so on...
- Tiddlywinks
- Finger Puppets

Handwriting Hints:

- Start to write on a green dot end on a red
- Copy over yellow writing
- Use layered carbon papers to improve pencil pressure to write the 'hidden message'

Multi-Sensory Mediums to Encourage Handwriting:

(These need to be tested with each individual, their reaction to sensory stimulus may mean that they are unwilling to have dirty hands, touch hard or soft materials and so on)

- Liquid foods, custard, gloop
- Dough
- Corn flour
- Lentils, beans and pulses, pasta
- Shaving foam
- Sand – wet and dry
- Glitter glue
- Pastels
- Poster paints
- Sponges
- Colouring pencils
- Felt tip markers, crayons and stampers
- Chubby crayons and chalks
- Different size and thickness of paint brushes
- Finger paint
- Etch-a-sketch and Magna Doodles
- Sellotape paper to prevent movement
- Different types of paper – lining paper, envelopes, wallpaper, scrap books and paper, writing and coloured papers
- Writing on steamy windows or mirrors

- Threading
- Lacing
- Magnetic writing boards
- White boards and chalk boards

Activities to Promote Handwriting:

- Dough work to strengthen muscles and improve fine motor control
- Picking up small objects and transferring them to a pot or container to improve pincer grip, i.e. picking up dried peas, pasta, small beads and putting them in yoghurt pots
- Play finger games and rhymes with an adult or peer
- Copy simple rhythmic sounds by using the fingers to drum out beats on tables and instruments
- Can copy simple rhythmic sounds by using the fingers to drum out beats on tables and instruments
- Paper tearing and crumpling
- To pile small bricks into a tower using both hands to encourage fine motor control and across the body movements
- Exploring different materials and surfaces and building up a profile of likes and dislikes, rough, smooth attributes etc
- Turning pages in books and reading materials of different thicknesses, card and board books, thick paper books, magazines, comics and newspapers
- Holding a range of objects of different sizes and shapes in hands
- Writing and following shapes in the air
- Encouraging children to make marks on paper using a variety of mediums
- Ascribe meaning to marks – answers questions such as “tell me what you have written?”
- Colouring inside large outline / picture / shapes
- Use of inset puzzles
- Peg boards
- Practicing scribbling activities
- Drawing vertical strokes on paper with crayons
- Colouring inside two pictures on the same paper
- Colouring inside more than two pictures on the same paper
- Is involved in playing with things and observing things that make circular movements
- Cutting and sticking activities to promote fine motor skills, following cutting pathways
- Sticking pictures and symbols to support writing – encourage simple sequencing activities
- Uses fingers, crayons and other writing materials to make circular marks in sand, on paper, on white boards and so on
- Can place small objects in a line
- Practises drawing using a variety of mediums, horizontal lines
- “Pathways”, “Tracking” exercises writing left to right, straight lines round and round, zigzag, beginnings of letter shapes

- Over writing large adult writing (yellow marker or red for children with visual impairment)
- Use of child friendly fonts
- Colouring inside pictures, adult then points out individual features of the picots for the child to colour i.e. “colour the dog’s ears, the dog’s eyes, the dog’s nose” and so on
- Copy writes / writes their own name
- Development of simple phonic knowledge linked to letter shapes (letter shape, name and sound it makes)
- Uses the beginnings of their phonic knowledge to begin to write simple words, for example the initial sound of an object
- Use initial sound bags to reinforce initial sounds of objects
- Writes simple key words (supported by key word list / searchlights)
- Attempts to use writing for different purposes, for instance, captions on wall displays, simple lists, thank you letters and so on
- Modifying worksheets, reorganising to prevent sensory overload or to provide bigger print to enable individuals with fine motor difficulties access to materials
- Access to adaptive technologies

Strategies to Promote Handwriting Skills:

- **“Hand over Hand”** – this technique, allows the individual to experience the sensation of writing guided by an adult
- **“Modelling and Holding” (Marion Blank)** – Blank believes that writing, whether in the form of handwriting or keyboarding, demands motor skills. For most individuals with ASD, fine motor skills are often their weakest areas. She says, *“Left to their own devices, when they are asked to handwrite, the letters often are simply big shapeless masses sprawled across the page. Left to their own devices, when children are asked to keyboard, they engage in seemingly random movements, hitting keys in meaningless fashion that ends up with little more than jamming the keyboard”*.
- Blank tells how modelling and holding provide an alternative method to encourage handwriting skills:
 - Modelling by the adult, as the child watches, the adult produces a single letter such as a ‘c’
 - The adult then supports the child’s hand or hands to execute the movement
 - Supporting the hand is different to ‘hand over hand’. By supporting the hand the adult never moves the child’s hand to execute the copy, the holding is limited solely to support and the adult waits until the child executes the actions

This frees the child of having to determine where and how to position their hands and stops them engaging in extraneous, non task related activities. It also conveys the message that the adult is calm and in control

References:

Marion Blank

“Light on Literacy: The Reading System for Children with Autism”

DfES

“The National Literacy Strategy – Developing Early Writing”

Leicestershire LEA
Autism Outreach Service

“Supporting Pupils with Autistic Spectrum Disorders in the Literacy Hour – A Teacher’s Guide”

www.pathfindersforautism.org



Autism Outreach Service
Specialist Teaching Services
Room 600
County Hall
Glenfield
Leicestershire
LE3 8RA

sts@leics.gov.uk

Tel: 0116 305 9400