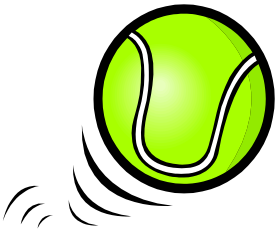
North Cheshire and Mersey
NHS Foundation Trust

Occupational Therapy and
Physiotherapy Service



Motor Skills
The Handbook for Referrers

(Version 2)

Contents

Typical Motor Development

Dependant on social, hereditary and environmental factors a child will follow a 'normal' developmental pattern. The table 'Milestones of Typical Development' shows the typical development of motor skills for children of primary school age.

Age	Fine Motor/Visual Perception	Gross Motor	Personal/social
4-5 Years	• Draws a person with 3 different body parts • Draws a recognisable house • Builds a tower of ten or more cubes • Builds 3 steps with 6 cubes after demonstration • Brings thumb into opposition of each finger in turn • Matches and names primary colours • Copies cross (X) and also letters 'V', 'H', 'T', and 'O' • Cuts out a big circle with scissors	• Walks up and down stairs with one foot to a step (adult fashion) • Can stand walk and run on tip toe • Stands on preferred foot for 3-5 seconds • Hops on preferred foot • Arranges and picks up objects from the floor by bending from the waist with knees straight • Can catch a beanbag (may trap against the body)	• Removes pullover garments • Puts socks on • Washes and dries hands • Understands taking turns and sharing • Can dress and undress except for laces, ties and tiny buttons • Cuts easy foods with a knife and fork

Age	Fine Motor/Visual Perception	Gross Motor	Personal/social
5-6 Years	• Picks up and replaces minute objects • Good control when writing and drawing with pencils and paint brushes • Decision made on dominant hand • Copies a square and triangle • Copies 'V', 'T', 'H', 'O', 'X', 'L', 'A', 'C', 'U', 'Y' • Writes a few letters spontaneously • Draws a person with 6 or more body parts and facial features • Cuts out a simple picture • Draws a house with door, windows, roof, and chimney • Starts to colour neatly within outlines • Counts fingers on one hand with index finger of the other hand • Prints first name	• Walks easily on a narrow line • Skips on alternate feet • Can stand on one foot for 8-10 seconds right or left • Can hop 2-3 metres forwards on each foot • Can catch a beanbag without trapping against the body • Can aim to throw a beanbag onto a target 5/10 times • Can ride a two wheeled bike without stabilisers	• Cuts most foods with a knife and fork • Washes and dries face and hands • Undresses and dresses alone • Plans and builds constructively in/out doors

Age	Fine Motor/Visual Perception	Gross Motor	Personal/social
6-7 Years	• Prints all numbers 1-9 without a model to copy (may be reversed) • Prints first and last name • Discriminates left from right • Good control over pencil, with change in direction • Can thread small beads onto a cord confidently • Can manipulate small coins to post, with either hand • Can use scissors to cut more complex shapes	• Can catch a tennis ball (two handed) away from the body • Can aim and throw accurately • Can stand on either leg for 15-20 seconds • Walk along a narrow line on tip toes • Can jump in sequence with feet together with controlled landing	• Using a knife and fork confidently with good coordination • Ties shoelaces and school tie independently • Can follow a set of simple instructions (2-3 commands)
7-10 Years	• Prints all numbers and letters (without reversal) • Becomes competent in cursive handwriting • Can manipulate and place pegs competently in a peg board with either hand • Can manipulate scissors competently	• Can stand and balance on either leg for 30 seconds and beyond • Walks along a narrow line heel to toe • Hops in sequence on either leg with controlled landing	

Delayed or Impaired Motor Development

There may be children within the general population who do not achieve typical developmental milestones. As stated above, this may be due to **social, hereditary and environmental factors**. This must be taken into account when considering whether a child is not meeting an age appropriate skill.

In addition, a child who has a medical condition/physical disability or learning difficulty may also present with a motor delay. For example a child with Cerebral Palsy may have a variety of difficulties affecting movement, and as a result may be very uncoordinated.

A child with a learning difficulty for example, may be 8 years of age, and working at a learning age of 5. Therefore it will be expected that their motor skills will be at age 5 level even though the child is 8 years old. **Referral for this child would therefore be inappropriate and a motor skills curriculum (both fine and gross motor) for their learning level should be applied.**

Developmental Coordination Disorder (DCD)

There will be children within the school population who present with motor coordination difficulties which can not be attributed to either a medical condition/physical disability or a learning difficulty. Their chronological and learning age will be the same, yet their motor skill development will be significantly below this.

The definitions of DCD:

*The child's motor coordination on fine and gross motor tasks should be **significantly** below the expected level on the basis of his or her age and general intelligence (ICD 10, World Health Organisation).*

Criteria for Referral:

Referral will be accepted if the child has functional difficulties with 2 or more of the following:

- Maintaining a good sitting or standing position for activities/ concentration to task.

- Dressing skills (changing for PE, tying shoelaces, fastening buttons and zips)
- Feeding (use of cutlery at lunchtime, drinking from a cup)
- Classroom skills (e.g. handwriting, use of scissors/tools etc).
- Organisation of self following a verbal command.
- Co-ordination (in gross motor activities e.g. ball skills, balance skills etc)

AND the problems are more significant than any learning difficulty they may have.**AND** the child does not have a diagnosed condition, which would influence their development of, and performance in, co-ordination skills.

This group of children will require referral to the Occupational Therapy and/or Physiotherapy service.

Referrals will only be accepted on the standard Woodview Child Development Centre referral form with the additional Teacher and Parent Questionnaires completed.

Postural Stability
(Core and shoulder stability)

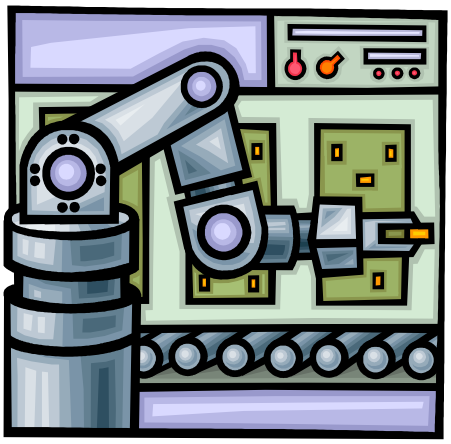
Postural Stability refers to the ability of the movement control systems to keep a particular segment of the body steady. Postural stability is made up of **core and shoulder stability.**

Core stability is the strength and stability in the trunk and pelvis required to attain and maintain upright postures for function.

Shoulder stability is the strength and stability around the shoulder girdle required to carry out intricate fine motor activities such as handwriting tasks.

Problems with motor control can stem from poor postural stability

Think of your body for a moment as a robot whose job is to etch small marks into a specific area. If your robot arm is attached to a wobbly, unbalanced, or weak base, how can it be in just the right place and use just the right small movements to do its job?



Postural Stability

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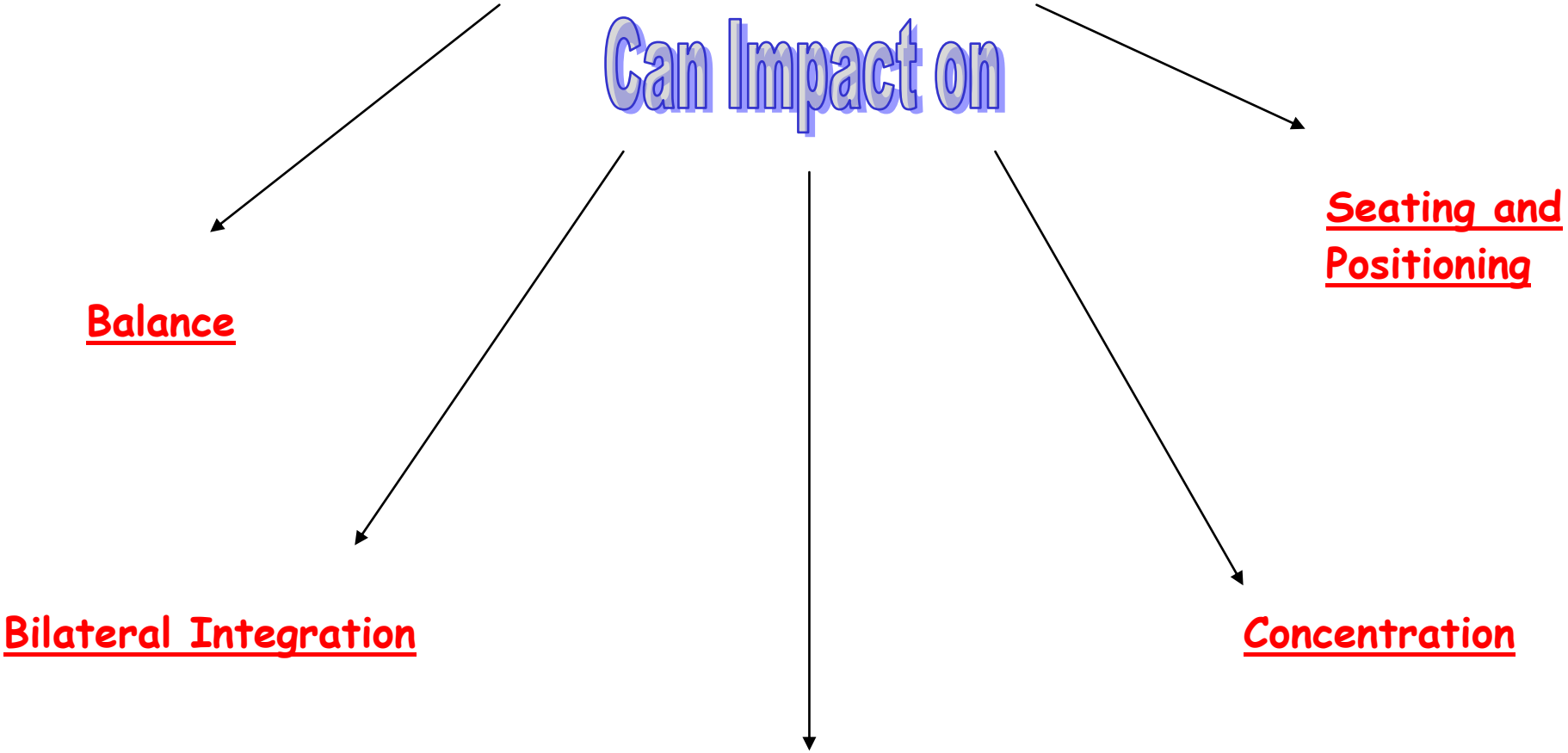

1. Balance

Achieving body balance is the ability to maintain **static** and **dynamic** balance. This should typically develop by school age (4-5 years).

- **Static Balance** – The ability to maintain a posture when balancing in a standing or sitting position e.g.:
  Standing on one foot – with eyes open, upgraded to with eyes closed.
- **Dynamic Balance** – Is the ability to maintain postural control during movement tasks e.g.:
  1) Heel-toe walking with eyes open, upgraded to with eyes closed.
  2) Walking along a balance beam, gradually reducing the width of the balance beam.

2. Bilateral Integration

Bilateral integration refers to the ability to co-ordinate both sides of the body in activities**.**

Basic bilateral integration tasks tend to involve both sides of the body doing the same movements (e.g. rolling out playdoh, catching a ball).

More advanced bilateral integration skills involve **reciprocal co-ordination** of the two sides, each side completing an opposing action to the other (i.e. one hand stays still while the other one moves). Reciprocal co-ordination is necessary for complex tasks such as using cutlery, using scissors, and hand writing.

For treatment advice and activities, please refer to the bilateral integration leaflet.

3. Seating and Positioning

Proper seating at school is very important. Lots of children with DCD have problems with posture as a result of poor postural stability. This can impact on the child's ability to keep a stable base to produce controlled arm and hand movements. This group of children will find it tiring sitting for long periods and will tend to 'fidget', slouch or lean on the table. All of which will interfere with attention and the ability to coordinate a task.

A good seated position should be with hips well back in the chair. The chair being of a size that allows sitting with hips, knees and ankles all at 90°. Chairs with flat seats are preferable to seats that are rounded. The table height should be 2" above the elbow when the child is in a seated position.

Many children can benefit from working at an elevated writing surface. This helps to support posture and places the wrist in a comfortable writing position. Sloped writing surfaces and 'Posture Packs' (sloped surface, with wedged cushion) are commercially available. (Please see information leaflet enclosed).Alternatively, a ring binder folder can be trialled prior to purchase.

If a child within your class has noticeable seating difficulties and finds it difficult to attend in class (as a result of poor postural stability), they should be encouraged to take regular movement breaks, e.g.

- Handing out textbooks
- Taking the register to the office
- Sharpening their pencil
- Cleaning the whiteboard

4. Handwriting Difficulties

A child with poor postural stability may present with handwriting difficulties e.g.

- **Pencil grip/control** – A child may struggle to develop a tripod grasp on their pencil and therefore this may affect their control over the pencil, letter formation and the pressure they apply to the paper.

- **Development of cursive writing** – When postural stability is reduced the ability to control the flow of handwriting is restricted therefore a child may struggle to move on from print to cursive writing.

- **Legibility** – As a result of poor postural stability the child may commence a piece of handwriting to a high standard, yet the longer they are required to apply themselves to task, the handwriting quality is compromised or they may struggle to complete it.

Motor Planning

Motor planning is the ability to plan the movement(s) needed to carry out a particular activity. We use previous experiences to help us to plan and organise how we move.

Children with motor planning difficulties (also called dyspraxia) have the ability to learn a new skill but tend to require extra practice before they master it. Once the child has learnt a new skill they may also have difficulty applying it to a new situation. For example the child may master shoelaces, yet struggle to tie a ribbon in their hair.

For further examples of how to help a child with motor planning difficulties please refer to the motor planning leaflet.

Organisational Skills

Motor planning difficulties can impact on a child's abilities to organise their day. They may struggle with the concepts of time and routine. Organising their clothes for dressing, packing their school bag and remembering equipment required for the day may also be difficult.

These children may be 'visual learners' and respond better to a combined visual and verbal prompting, rather than solely relying on verbal instruction.

Resources

The following is a list of websites which provide a range of equipment and other useful resources:

www.**backinaction**.co.uk/
This website provides

- 'Posture Pack' (sloped writing surface with wedge cushion) which helps to correct posture.
- Move 'n' Sit cushion – an air filled wedge cushion, which provides a sense of movement whilst seated to support children who tend to 'fidget', hence aiding concentration.

www.**specialdirect**.com
Provides:

- A range of equipment to support the development of motor skills
- A range pencil grips and pens/pencils to support the development of handwriting
- Sloped writing surfaces to enhance posture for table-top activities

www.**whistlingtortoise**.co.uk
Provides:

- Move 'n' Sit cushion – an air filled wedge cushion, which provides a sense of movement whilst seated to support children who tend to 'fidget', hence aiding concentration.
- Theraputty – Used for strengthening the hand an wrist to improve fine motor skills
- Self-opening scissors –For improving scissor skills for children with a weak or poor grip

www.**bbc**.co.uk/schools/typing/
An interactive typing tutorial to support children to develop typing skills.

www.teachernet.gov.uk/publications
The Early Years Foundation Stage. A publication which can be downloaded from the website above - providing details of the stages of development for early years settings.

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Acknowledgements

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