

Gross Motor Development Checklist

Does your child have difficulty with:

0-6 months

- Rolling over from front to back or back to front.
- Bringing feet to hands/mouth while on back.
- Holding head erect in a support position.
- Sitting (initially with support).
- Pushing body off ground with arms when lying on tummy.

6-12 months

- Roller over from front to back, or back to front.
- Crawling on belly.
- Sitting independently.
- Getting up on all fours.
- Pushing body off ground with arms when lying on tummy.
- Bringing self into a seated position unaided.
- Creeping on hands and knees.
- Transitioning into different positions e.g. sitting, all fours, lying on tummy.
- Pulling self into standing position.
- Stands momentarily without support.
- Walking while holding onto furniture.
- Taking 2-3 steps without support.
- Rolling a ball in imitation of adult.

1-2 years

- Sitting, crawling or walking independently.
- Getting up on all fours.

- Creeping on hands and knees.
- Transitioning into different positions (e.g. sitting, all fours, lying on tummy).
- Pulling self into standing position.
- Standing without support.
- Trying to run (running stiff with eyes on floor).
- Walking while holding a toy.
- Changing direction while walking.
- Rolling a ball in imitation of an adult.

2-3 years

- Transitioning into different positions (e.g. sitting, all fours, lying on tummy).
- Walking smoothly and turning corners.
- Running with control (still has wide gait).
- Climbing onto/down from furniture without assistance.
- Pulling self into standing position.
- Walking up and down steps (with support).
- Walking while holding a toy.
- Changing direction while walking.
- Picking up toys from the floor without falling over.
- Rolling a ball.

3-4 years

- Transitioning into different positions (e.g. sitting, all fours, lying on tummy).
- Imitating an adult standing on one foot.
- Imitating simple bilateral movements of limbs (e.g. arms up together).
- Running with control.
- Climbing onto/down from furniture without assistance.
- Climbing on jungle gym and ladders.
- Pedalling a tricycle.
- Changing direction while walking.
- Walking up and down stairs with alternating feet.

- Jumping with two feet together 5 times in a row.
- Walking on tip toes.
- Picking up toys from the floor without falling over.
- Throwing objects with an overarm action at a target.
- Rolling a ball.
- Catching a ball (using the whole body, not just arms).

4-5 years

- Standing on one foot for up to 5 seconds.
- Imitating simple bilateral movements of limbs (e.g. arms up together).
- Walking up and down stairs with alternating feet.
- Climbing onto/down from furniture without assistance.
- Climbing on jungle gym and ladders.
- Pedalling a tricycle.
- Kicking a ball forwards.
- Throwing a ball overarm.
- Catching a ball that has been bounced.
- Catching a ball with hands instead of using arms and body.
- Running around obstacles.
- Jumping 10 times in a row, maintaining the distance of jumps.
- Walking on tip toes.
- Walking along a line.
- Safely performing a forward roll.
- Hopping on one foot.
- Jumping over an object and landing with both feet together.

5-6 years

- Standing on one foot for 10 seconds.
- Kicking a ball.
- Walking up stairs while holding an object.
- Walking backwards heel-toe.

- Jumping forwards 10 times without falling.
- Skipping forward after demonstration.
- Running around obstacles.
- Hanging from a bar for at least 5 seconds.
- Stepping forward with leg on same side as throwing arm when throwing a ball.
- Walking along a line.
- Hopping on one foot.
- Safely performing a forward roll.
- Catching a small ball using hands only.
- Jumping over an object and landing with both feet together.

6-7 years

- Running smoothly with arms opposing legs and a narrow base of support (feet not too far apart).
- Running around obstacles while maintaining balance.
- Standing on one foot for at least 10 seconds.
- Skipping forward without demonstration.
- Stepping forward with leg on opposite side as throwing arm when throwing a ball.
- Kicking a soccer ball with reasonable accuracy.
- Walking backwards heel-toe.
- Walking on a balance beam.
- Hanging from a bar for at least 10 seconds.
- Holding and moving across monkey bars without support.
- Using a skipping rope.
- Hopping on 1 foot.
- Jumping forwards with both feet together.
- Safely performing a forward roll.
- Catching a small ball using hands only.

- Jumping over an object and landing with both feet together.
- Riding a bike without training wheels.

7-8 years

- Holding and moving across monkey bars without support.
- Safely performing a forward roll.
- Running smoothly with arms opposing legs and a narrow base of support (feet not too far apart).
- Running around obstacles while maintaining balance.
- Stepping forward with leg on opposite side as throwing arm when throwing a ball.
- Kicking a soccer ball with reasonable accuracy.
- Kicking a football with reasonable accuracy and consistency.
- Jumping over an object and landing with both feet together.
- Catching a small ball using hands only.
- Walking on a balance beam.
- Walking backwards heel-toe.
- Standing and maintaining balance on one foot.
- Using a skipping rope.
- Hopping on one foot.
- Riding a bike.

What is sensory processing?

Sensory Processing – or Integration as it is also known – is the effective registration (and accurate interpretation) of sensory input in the environment (including one's body). It is the way the brain receives, organises and responds to sensory input in order to behave in a meaningful & consistent manner.

There are 3 possible components of Dysfunction of Sensory Integration.

- **Sensory Modulation Disorder** is a problem with turning sensory messages into controlled behaviours that match the nature and intensity of the sensory information.
- **Sensory-Based Motor Disorder** is a problem with stabilising, moving or planning a series of movements in response to sensory demands.
- **Sensory Discrimination Disorder** is a problem with sensing similarities and differences between sensations.

Other factors that impact processing can include: speech and language difficulties, attention difficulties (e.g. ADD/ADHD), psychological issues (e.g. anxiety, depression), fatigue, diagnosis specific behaviour and conscious choice behaviour.

Environmental factors include: the sensory input around the child, the degree of structure of the setting, the time of day, the impact of fatigue, and the expectations placed on them by the tasks they are doing.

Why is sensory processing / motor integration important?

A new born is able to see, hear and sense their body but is unable to organise these senses well; therefore this has very little meaning to them. They are unable to judge distances or feel the shape of one object versus another. As the child is

exposed to various sensory inputs, they gradually learn to organise them within their brain and are able to give meaning to them.

They become better able to focus on one sensation and as a result performance improves. Their movement changes from being jerky and clumsy to more refined and they are able to manage multiple amounts of sensory input at one time. By organising sensations the child is able to modulate their response and as a result they seem to be more connected with the world and in control of their emotions.

When children are efficient in their processing, appropriate responses to the environment around us occurs and is demonstrated by appropriate skill mastery, behaviour, attention and self regulation. Children are able to sit and attend to the important pieces of information in a classroom and therefore will have a good chance at achieving their academic potential.

Furthermore a child will be able to understand their body's movement in relation to their surroundings and itself. This allows for success in fine and gross motor activities. This in turns aids the social development of a child.

What are the building blocks necessary to develop efficient sensory processing / motor integration?

All the sensory systems need to work together for effective sensory processing. It is important to recognise that there are in fact 7 senses that make up the sensory system and its these systems that process information as a building block to many other skills.

Visual sense: The ability to understand and interpret what is seen. The visual system uses the eye to receive information about contrast of light and dark, colour and movement. It detects visual input from the environment through light waves stimulating the retina.

Auditory Sense: The ability to interpret information that is heard. The auditory system uses the outer and middle ear to receive noise and sound information

about volume, pitch and rhythm. It is important for the refinement of sounds into meaningful syllables and words.

Gustatory Sense: The ability to interpret information regarding taste in the mouth. It uses the tongue to receive taste sensations and to detect if these are safe or harmful by their chemical makeup.

Olfactory Sense: The ability to interpret smells. It uses the nose to receive information of the chemical makeup of particles in the air.

Tactile sense: The ability to interpret information coming into the body by the skin. It uses receptors in the skin to receive touch sensations like pressure, vibration, movement, temperature and pain. It is the first sense to develop (in the womb), and as such is very important for overall neural organisation.

Proprioceptive Sense: The ability to interpret where your body parts are in relation to each other. It uses information from nerves and sheaths on the muscles and bones to inform about the position and movement of the body through muscles contracting, stretching, bending, straightening, pulling and compressing.

Vestibular sense: The ability to interpret information relating to movement and balance. The vestibular system uses the semi-circular canals in the inner ear to receive information about movement, change of direction, change of head position and gravitational pull. It receives information about how fast or slow we are moving, balance, movement from the neck, eyes and body, body position, and orientation in space.

How can you tell if my child has problems with sensory processing / motor integration?

If a child has difficulties with sensory processing they might:

- Show heightened reactivity to sound, touch or movement.

- Be under-reactive to certain sensations (e.g. not notice name being called, being touched, have a very high pain threshold).
- Appear lethargic or disinterested; appearing to mostly be in their 'own world'.
- Have difficulty regulating their own behavioural and emotional responses; showing increased tantrums, being emotional reactive, having a need for control, impulsive behaviours, being easily frustrated or overly compliant.
- Being easily distracted, showing poor attention and concentration.
- Have poor motor skills; appearing clumsy, have immature coordination, balance and motor planning skills, and/or poor handwriting skills.
- Have poor sleep patterns.
- Have a restricted eating habits or be a picky eater.
- Become distressed during self-care tasks (e.g. hair-brushing, hair-washing, nail cutting, dressing, tying shoe laces, self-feeding).
- Loves movement so that they seeks out intense pressure (e.g. constant spinning, running around, jumping, crashing in objects/people).
- Avoid movement based equipment (e.g. swings, slides).
- Appear floppy or has 'low muscle tone', tire easily and often slumped in posture.
- Perform tasks with too much force, have big movements, move too fast, write too light or too hard.
- Have delayed communication and social skills, is hard to engage in two-way interactions.
- Prefer to play on their own or has difficulty in knowing how to play with other children.
- Have difficulty accepting changes in routine or transitioning between tasks.
- Have difficulty engaging with peers and sustaining friendships.

What other problems can occur when a child has difficulties with sensory processing /motor integration?

When a child has sensory processing difficulties, they might also have difficulties with:

- **Attention and concentration:** Sustained effort, doing activities without distraction and being able to hold that effort long enough to get the task done.
- **Behaviour:** Their actions, usually in relation to their environment.
- **Body awareness:** Knowing body parts and understanding the body's movement in space in relation to other limbs and objects.
- **Coordination:** The ability to integrate multiple movements into efficient movement.
- **Expressive language (using language):** The use of language through speech, sign or alternative forms of communication to communicate wants, needs, thoughts and ideas.
- **Play skills:** Voluntary engagement in self motivated activities that are normally associated with pleasure and enjoyment where the activities may be, but are not necessarily, goal oriented.
- **Receptive language (understanding):** Comprehension of language.
- **Self regulation:** The ability to obtain, maintain and change their emotion, behaviour, attention and activity level appropriate for a task or situation in a socially acceptable manner.
- **Articulation:** Clarity of speech sounds and spoken language.

What can be done to improve sensory processing / motor integration skills?

Education around the varying management strategies.

- **Recognise triggers:** Educate the child's adult carers (parents, teachers) of the triggers that spark inappropriate sensory reactions.
- **Environmental factors:** Improve the adult carers knowledge of how to reduce the environmental factors that contribute to inappropriate sensory responses.

- **Alert (Engine) program** to promote to self-regulation through sensory and cognitive (thought based) strategies.
- **M.O.R.E program** uses motor (muscle) components, oral organization, respiratory demands, and eye contact to assist with sensory regulation.
- **The Wilbarger Protocol (Deep Pressure Proprioceptive Technique)** – otherwise known as the ‘Brushing Program’ – is a therapy program designed to reduce sensory or tactile defensiveness and assist with sensory regulation.

What activities can help improve sensory processing / motor integration?

A Sensory diet to provide sensory feedback to the body to enable it to sensorily regulate. These activities might be activities such as:

- **Wheelbarrow walking**
- **Animal walks**
- **Trampolining**
- **Cycling or scooting**
- **Swings** (forward and back, side to side, rotary)
- **Rough and tumble play** / squishing or sandwiching with pillows or balls
- **Wearing a heavy backpack**
- **Weighted items** (wheat bag on lap while sitting or heavy blanket for sleep)
- **Chewy toys**
- **Visual schedules** enable a child to see and understand what is going to happen next. Schedules also help them to organise themselves and to plan ahead.
- **Timers** help with transitions as they tell the child how long and when they are going to have to do an activity.
- Timers allow us to pre-warn the child.

Why should I seek therapy if I notice difficulties with sensory processing / motor integration in my child?

Therapeutic intervention to help a child with sensory processing difficulties is important to:

- Enable a child to be able to develop social interaction, behaviour and play skills.
- Allow a child to cope in busy environments.
- Ensure a child is able to engage in academic tasks long enough to learn them.
- Support school transition which may be difficult if they are unable to follow instructions (e.g. classroom instructions, academic task requirements).
- Children do not grow out of sensory issues, rather they change and adapt as necessary.

If left untreated what can difficulties with sensory processing / motor integration difficulties lead to?

When children have difficulties with sensory processing, they might also have difficulties with:

- Self regulation of their emotion, behaviour, attention and activity levels to match them to the task or situation in a socially acceptable manner.
- Behaviour as the child might be unable to regulate themselves appropriately to settle and attend to a task for extended periods of time.
- Difficulties accessing the curriculum because they are unable to attend to tasks long enough to complete assessment criteria.

- Poor sleep habits, impacting upon skill development due to fatigue.
- Rigid routines that are difficult to break.
- Speech and language difficulties as sensory processing is the foundation to these skills.
- Physical skills (fine and gross motor) including self care skills (eating, sleeping, teeth cleaning, tolerating haircuts).
- Play skills being more limited in scope and being more bossy in social interaction with peers than age appropriate.

What type of therapy is recommended for sensory processing / motor integration difficulties?

If your child has difficulties with sensory processing/motor integration difficulties, it is recommended they consult an Occupational Therapist.

Low Muscle Tone

What is low muscle tone?

'Low muscle tone' is a condition of abnormally low muscle tone, the amount of tension or resistance to movement in a muscle. Low muscle tone occurs when the length of the resting muscle is slightly longer than typical. This means that the muscle fibers are not overlapping at an optimal level and there are fewer points where the fibers can attach and generate pull on the muscle. As a result, the person's muscle needs to go through a greater range of motion and, as a result, more energy is used. On top of this, it often takes greater stimulation for the muscle to activate, which also increases the response time of the muscle and it directly influences the child's performance abilities. The use of extra energy contributes to the decrease in the child's endurance.

What are the common features of low muscle tone?

- Decreased strength.
- Increased flexibility and movement in joints.
- Poor endurance.

Common difficulties often (but not always) experienced by those with low muscle tone:

- Fatigues quickly.
- Poor posture.

- Increased flexibility, increasing susceptibility to injuries.
- Poor persistence to gross motor tasks.
- Lack appropriate body awareness feedback.
- Avoids chewy foods.
- Preference to engage in sedentary activities.

Management strategies that support the child with low muscle tone (at preschool, school and/or home):

- Reward system.
- Appropriate set up for school desk.
- Encouragement.
- Provide opportunities to succeed by simplifying activities.
- Extra time to complete tasks.
- Recognise and reinforce the child's strengths.

Occupational Therapy approaches and activities that can support the child with low muscle tone and/or their carers include:

Gross motor activities: Increase participation in gross motor activities.

Motivation: Make activities achievable and appealing for the child.:

Fun/play: A child is more likely to persist with tasks if they are fun and play based.

Develop underlying skills: such as postural control, endurance and body awareness.

Play based activities to promote longer participation.

Graded activities so they gradually develop a child's strength and endurance.

Hard muscle work exercises/games to build strength and endurance.

Speech Therapy approaches and activities that can support the child with low muscle tone and/or their carers include:

Muscle strength in the face: Activities to increase muscle strength in the face (e.g. drink yoghurt/thick-shakes through a straw, blowing up balloons).

Articulation: Improving articulation of specific speech sounds within words.

Oral awareness: Developing oral awareness (i.e. movement of the tongue in the mouth).

Alternative forms of communication: Teaching alternative ways of communicating through sign language or PECS (Picture Exchange Communication System) whilst muscle tone is improving.

Communication strategies: Working together with parents to devise goals and strategies to help develop areas of communication which the child is having difficulty with.

Daily activities: Providing families with strategies and advice that can be utilised at home within daily activities and routines to help develop communication skills.

Step by step goals: Making small step by step goals that are achievable and show the child's progression within the skill areas.

Visual information: Incorporating extra visual information through the use of a more formalised gesture system, pictures and/or symbols to aid understanding and use of language where appropriate.

Positive reinforcement: Providing lots of positive reinforcement and encouragement throughout therapy to help build confidence and self esteem.

Liaising with educational staff (where appropriate) about the child's communication skills and providing information and ideas that can be used in the educational setting to help the child access the curriculum.

If left untreated the child with low muscle tone may have difficulties with:

- Learning to talk, speech intelligibility and clarity.
- Managing a full school day due to poor strength and endurance.
- Participating in sporting activities leading to an inactive lifestyle, increasing the risks of other health related issues such as obesity, diabetes, cardiovascular disease or similar conditions.
- Self esteem and confidence when they realise their skills do not match their peers.
- Bullying when others become more aware of a child's difficulties.
- Fine motor skills (e.g. writing, drawing and cutting) due to poor core stability, meaning they do not have a strong base to support the use of their arms and hands.
- Completing self-care tasks (e.g. doing up shoelaces, buttons, zips, using cutlery).
- Accessing the curriculum because they are unable to attend to tasks long enough to complete assessment criteria.
- Anxiety and stress in a variety of situations leading to difficulty reaching their academic potential.
- Academic performance: Developing literacy skills such as reading and writing and coping in the academic environment.
- Academic assessment: Completing tests, exams and academic tasks in higher education.

Dyspraxia

What is dyspraxia?

Dyspraxia is a difficulty with organising and directing the body to perform a motor skill (movement) needed to correctly carry out the steps in a process and to ensure that a task is performed in the most efficient way. In order to do this the

brain must receive and register sensory information from the environment and one's own body (e.g. tactile (touch), kinesthetic (body position awareness), vestibular (balance awareness) and visual information). The brain must then process and interpret this information in order to generate an appropriate response: including how to interact with the environment, planning the movement necessary to proceed and finally executing the performance. Included in the organisation and planning of how to execute the task presented to the child, the child also requires the ability to effectively evaluate the success of the performance in order to refine it for next time.

What are the common features of dyspraxia?

Gross Motor (whole body) Skill Difficulties:

- Delay in reaching normal milestones for crawling, sitting, walking, speaking.
- Difficulties with running, jumping and hopping compared to their peers.
- Takes longer to initiate movement when presented with a new task as they need time to process and plan (e.g. require a longer exposure to a new activity in order to learn it).
- May seem accident prone (e.g. trip frequently, bump into things).
- May have poor posture.

Fine Motor (Finger) Skill Difficulties:

- Difficulty with pencil-based tasks (e.g. holding and using a pencil for handwriting).
- Difficulty with self-care activities such as using cutlery, tying shoe laces, brushing teeth, using scissors and doing up zips or buttons.
- Perceptual Difficulties

- Poor spatial awareness showing confusion between left/right, back/front, b/d, p/q.
- Visual perceptual difficulties that result in difficulties with reading fluency, copying and writing.
- Auditory perceptual difficulties that result in not being able to follow a set of oral instructions or being easily distracted by background sound.

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Language Difficulties:

- Slow to respond to a question even if they know the answer.
- Speech can be slow and laboured.
- Poor expressive language skills (i.e. has difficulty organising thoughts and language to express themselves).
- Speech sounds are often not clearly articulated and the child may appear to have difficulties working out how to say specific sounds (i.e. mouth appears to be groping to find the sound to say).
- Words are sometimes articulated differently each time the child attempts to say the word.

Organisation Difficulties:

- Often loses/forgets things.

- Difficulty remembering sequences (e.g. months of the year) in order.
- Difficulty following a set of instructions (may appear to not be listening).
- Difficulty learning routines.
- Difficulty putting multi-step tasks together (e.g. obstacle course).
- Appears lazy and non-compliant (when in fact they may not know how to start the task).
- Difficulty getting things organised at school (e.g. getting out pencils, paper, glue and the right book for a classroom activity, getting all the equipment needed for an outdoor game).
- Struggles to get themselves ready on time.

Emotional/Social Difficulties:

- Poor self esteem and confidence often resulting in frustration and anxiety.
- Poor awareness of how to act in social settings with other people.
- Not fitting in with their peer group.
- Not picking up on non-verbal communication (e.g. facial expressions, gestures, body language) of others.
- Gets distracted easily or shows poor attention to a task.

Common difficulties often (but not always) experienced by the child with dyspraxia:

- May lack interest/motivation in physical activity or be hard to engage in particular activities they find difficult or in which they have experienced failure.

- May avoid socialising with peers or not be included by peers in physical games (e.g. on the playground for fear of failure or experience with repeated failure).
- Easily frustrated when completing tasks.
- Easily distracted
- Reduced self-esteem
- Anxiety when asked to participate in difficult activities.
- Tends to seek out younger children to play with as their skills are of a similar level and they feel more confident playing with them.
- May complain that 'this is too hard' or 'I can't do it' when presented with motor activities.
- May be resistant to changes in how or when tasks are done, as changes present new situations/tasks that require planning and new learning.

Management strategies that support the child with dyspraxia (at preschool, school and/or home):

- Provide lots of praise and encouragement.
- Use visual cues to support organisation and planning as well as attention to task.
- Allow extra time to process and learn when presenting the child with a new task.
- Recognise that additional practice is often required on an on-going basis to recall a previously mastered task.
- Break large tasks into smaller ones wherever possible, even if it seems silly (not only does this support skill development, but it also reduces the

heightened anxiety that is commonly experienced with motor planning challenges).

- When teaching a skill, start with a movement that the child is likely to achieve and gradually increase the degree of difficulty.
- Provide opportunities to succeed by simplifying activities.
- Introduce new skills or environments on an individual basis before introducing peers.
- Use simple language and instructions.
- Recognise and reinforce the child's strengths.
- Ensure appropriate set up of school desk.
- Set realistic and achievable goals for all task performance and completion.
- Make participation, not competition, the goal.

Occupational Therapy approaches and activities that can support the child with Dyspraxia and/or their carers include:

- **Child's abilities:** Observing the child during play and formal assessment to determine the child's abilities with gross motor (whole body) tasks, what they find difficult and then making recommendations for management.
- **Devising goals:** Setting functional goals in collaboration with the child, parents and teachers so that therapy has a common focus beneficial to everyone involved.
- **Educating** parents, carers and teachers about dyspraxia, the age appropriate skills a child should be demonstrating and providing management strategies/ideas to assist the child in the home, at school and in the community.

- **Physical skills:** Providing ways/ideas to promote physical activity and participation in team/group activities.
- **Underlying skills:** Developing the underlying skills necessary to support whole body (gross motor) and hand dexterity (fine motor) skills, such as providing activities to support: Direct skill teaching through a task based approach.
 - balance and coordination
 - strength and endurance
 - attention and alertness
 - body awareness
 - movement planning
- **Confidence:** Building self-confidence to enable a child to willingly participate (it is common for these children to shut down when they perceive the task to be too hard) in activities by: Simplifying tasks: Educating parents and carers on ways to simplify tasks to the smallest possible components and using simple and concise language.
- **Providing the child with awareness** about why they may be experiencing difficulties with movement, their strengths as well as their weaknesses and providing and teaching them strategies to overcome obstacles they may face which otherwise may see an avoidance of activity.
- **Breaking down specific physical skills** into one or two step components to teach the skill and then gradually adding in components until the skill is doable in its entirety (e.g. skipping – start with a step, then a hop).
- **Providing opportunities and strategies** to master the same skill in different environments (home versus school versus therapy session).
- **Presenting the activities** at the ‘just right challenge’ level to provide success and then gradually increasing the demands of a mastered skill.

- **Non-verbal cues:** Using physical and visual models or instructions (wherever possible) not just verbal.
- **Sensory processing:** Improving sensory processing to ensure appropriate attention and arousal to attempt the tasks, as well as ensuring the body is receiving and interpreting the correct messages from the muscles in terms of their position and relationship to each other.
- **Multi-sensory approach:** Using a multi-sensory approach to learning new skills.
- **Modelling tasks** visually and using hands-on adjustment techniques to aid body awareness for the child.

Speech Therapy approaches and activities that can support the child with dyspraxia and/or their carers include:

- **Speech and language assessment** to help the family to understand how the child is processing, understanding, learning and using language and communication.
- **Communication strategies:** Providing the family with strategies and techniques to increase and enhance communication with the child.
- **Daily activities:** Helping the child to understand the environment, routines and language.
- **Developing language:** Helping the child to understand and use richer language and to use language more spontaneously.
- **Articulation:** Improving the child's ability to articulate sounds within words.
- **Conversation skills:** Developing conversation skills (e.g. back and forth exchange, turn taking).

- **Concept skills:** Developing concept skills, especially abstract concepts, such as time
- (e.g. yesterday, before, after).
- **Visuals** can be used to help with understanding and the child's ability to express their needs, wants, thoughts and ideas.
- **Social skills:** Development of social skills (i.e. knowing when, how to use language in social situations).
- **Enhancing verbal and non-verbal communication** including natural gestures, speech, signs, pictures and written words.
- **Visual strategies:** Using visual information to help understand, organise and plan the routine for the day.
- **Liaising with educational staff** regarding the nature of the difficulties and ways to help the child to access the curriculum.

If left untreated the child with dyspraxia may have difficulties with:

- Learning to talk, speech intelligibility and clarity.
- Managing a full school day due to poor strength and endurance.
- Participating in sporting activities leading to an inactive lifestyle, increasing the risks of other health related issues such as obesity, diabetes, cardiovascular disease or similar conditions.
- Self esteem and confidence when they realise their skills do not match their peers.
- Bullying when others become more aware of the child's difficulties.

- Fine motor skills (e.g. writing, drawing and cutting) due to poor core stability, meaning they do not have a strong base to support the use of their arms and hands.
- Completing self-care tasks (e.g. doing up shoelaces, buttons, zips, using cutlery).
- Self regulation and behaviour as the child is unable to regulate themselves appropriately to settle and attend to a task for extended periods of time.
- Anxiety and stress in a variety of situations leading to difficulty reaching their academic potential.
- Academic performance: Developing literacy skills such as reading and writing and coping in the academic environment.
- Academic assessment: Completing tests, exams and academic tasks in higher education.

Developmental Coordination Disorder

What is Developmental Coordination Disorder (DCD)?

Developmental Coordination Disorder (DCD) is a term used to describe children who demonstrate substantial difficulty in coordinating movements such as those needed to climb the playground, catch balls, complete handwriting tasks or get dressed. As a result these movement difficulties interfere with a child's ability to perform everyday tasks and have an impact on academic achievement. Children described using the term DCD cannot have their difficulties with movement explained by a general medical condition (Cerebral Palsy, Hemiplegia or Muscular Dystrophy) and the criteria are not met for Pervasive Developmental Disorder – not otherwise specified (PDD-NOS).

What are the common features of Developmental Coordination Disorder (DCD)?

Children with DCD may experience difficulties in a variety of areas, while others may only have difficulties in specific areas. If your child demonstrates a number of the below features and has not been formally diagnosed as having DCD by a medical doctor, it is important that your child also see a Paediatrician to rule out any other general medical conditions.

- Appears clumsy or awkward in movements compared to friends of similar age (e.g. running awkwardly or holding scissors awkwardly).
- Poor body awareness: Trouble determining the distance between themselves and objects and hence bumping into objects or knocking things over and invading other people's personal space without recognising this.
- Difficulty with or delayed in developing gross motor (physical) skills (e.g. running, jumping, hopping, catching balls, climbing), fine motor skills (e.g. handwriting, doing up buttons, threading beads, tying shoe laces), or both.

- May show a discrepancy between motor abilities and abilities in other areas. For example, intellectual and language skills may be quite strong while motor skills are delayed.
- Movement planning difficulties: Difficulty planning physical movements into a controlled sequence to complete a task, or difficulty remembering the next movement in a sequence despite being shown or told how.
- Movement learning difficulties: Difficulty learning new movement skills and once learned in one environment (e.g. school) may continue to have difficulty performing the task in another environment (e.g. home). Consequently, the child needs to be taught the task again in each new environment.
- Difficulty with activities that require constant changes (e.g. baseball, tennis).
- Difficulty with activities that require the coordinated use of both sides of the body (e.g. cutting with scissors, running, swinging a bat).
- Reduced balance and postural control (e.g. unsteady when stepping over a height or when standing while dressing).
- Reduced strength and endurance, requiring significantly more effort to complete the same task as their friends, resulting in rapid fatigue.
- Rushing through tasks as completing them slowly is difficult due to reduced control or balance.
- Taking extra time to do tasks to ensure accuracy.
- Difficulty with printing or handwriting.
- Difficulty with academic subjects such as mathematics, spelling or written language which require handwriting to be accurate and organised on the page.

- Difficulties organising their school desk, school bag, homework or even the space on a page.

Common difficulties often (but not always) experienced by the child with Developmental Coordination Disorder (DCD):

- May lack interest/motivation in physical activity or be hard to engage in activities they find difficult or in which they have experienced failure.
- May avoid socialising with peers, or not be included by peers, in physical games (e.g. on the playground) for fear of failure or experience with repeated failure.
- Frustrated easily when completing tasks.
- Easily distracted
- Reduced self-esteem
- Anxiety when asked to participate in difficult activities.
- Tends to seek out younger children to play with as their skills are of a similar level and they feel more confident playing with them.
- May complain that 'this is too hard' or 'I can't do it' when presented with motor activities.
- May be resistant to changes in how or when tasks are done as changes present new situations/tasks that require planning and new learning.

Management strategies that support the child with Developmental Coordination Disorder (DCD) (at preschool, school and/or home):

- Encouragement to persist and attempt tasks.
- Provide opportunities to succeed by simplifying activities.

- Teach new skills in a step by step manner and keep the environment as predictable as possible during teaching.
- Introduce new skills or environments on an individual basis before introducing peers.
- Use simple language and instructions.
- Provide visual as well as verbal cues.
- Provide extra time to complete tasks.
- Recognise and reinforce the child's strengths.
- Appropriate set up for school desk.
- Set realistic and achievable goals for all task performance and completion.
- Make participation, not competition, the goal.

Occupational Therapy approaches and activities that can support the child with Developmental Coordination Disorder (DCD) and/or their carers include:

- **Observing** the child during play and formal assessment to determine the child's abilities with gross motor (whole body) tasks and then making recommendations for management.
- **Devise goals:** Setting functional goals in collaboration with the child, parents and teachers so that therapy has a common focus beneficial to everyone involved.
- **Educating** parents, carers and teachers about DCD, age appropriate skills a child should be demonstrating and providing management strategies/ideas to assist the child in the home, at school and in the community.
- **Physical skills:** Providing ways/ideas to promote physical activity and participation in team/group activities.

- **Underlying skills:** Developing the underlying skills necessary to support whole body (gross motor) and hand dexterity (fine motor) skills, such as providing activities to support:
 - balance and coordination
 - strength and endurance
 - attention and alertness
 - body awareness
 - movement planning
- **Direct skill teaching** through a task based approach.
- **Confidence:** Building self-confidence to enable a child to willingly participate (it is common for these children to shut down when they perceive the task to be too hard) in activities by:
 - Providing the child with education about why they may be experiencing difficulties with movement, their strengths as well as their weaknesses and providing them with and teaching them strategies to overcome obstacles they may face.
 - Breaking down specific physical skills into one or two step components to teach the skill and then gradually adding in new components until the skill is doable in its entirety (e.g. skipping – start with a step, then a hop).
 - Providing opportunities and strategies to master the same skill in differing environments (e.g. home versus school versus. therapy session).
 - Presenting the activities at the ‘just right challenge’ level to provide success and then gradually increasing the demands of a mastered skill.

- **Educating** parents and carers on ways to simplify tasks to the smallest possible components and use simple and concise language.
- **Non-verbal cues:** Using physical and visual models or instructions, wherever possible, not just verbal.
- **Sensory processing:** Improving sensory processing to ensure appropriate attention and arousal to attempt the tasks as well as ensuring the body is receiving and interpreting the correct messages from the muscles in terms of their position and relationship to each other.
- **Multi-sensory approach:** Using a multi-sensory approach to learning new skills.
- **Modelling tasks visually** and using hands-on adjustment techniques to aid body awareness for the child.

If left untreated the child with Developmental Coordination Disorder (DCD) may have difficulties with:

- Following instructions within the home, kindergarten or school environment.
- Managing a full school day due to poor strength and endurance.
- Participating in sporting activities leading to an inactive lifestyle, increasing the risks of other health related issues such as obesity, diabetes, cardiovascular disease or similar conditions.
- Self esteem and confidence when they realise their skills do not match their peers.
- Bullying when others become more aware of the child's difficulties.

- Fine motor skills (e.g. writing, drawing and cutting) due to poor core stability, meaning they do not have a strong base to support the use of their arms and hands.
- Completing self-care tasks (e.g. doing up shoelaces, buttons, zips, using cutlery).
- Anxiety and stress in a variety of situations leading to difficulty reaching their academic potential.
- Academic performance: Developing literacy skills such as reading and writing and coping in the academic environment.
- Academic assessment: Completing tests, exams and academic tasks in higher education.