

PROPRIOCEPTION

Definition:

- ◆ Most people know that we have 5 senses: sight, sound, taste, touch and smell. However, there are other very important senses not included in this list.
- ◆ Awareness of our body position / movement, or **proprioception** is one of these.
- ◆ We do not learn about this sense, so most people are unaware of it. This can be a problem when the proprioceptive sense is not working well. If we are not aware of it, it is hard to understand the problems related to it.
- ◆ **Proprioception** refers to the processing of sensations received from the muscles and joints of our body. It allows us to know where each part of our body is and how it is moving.
- ◆ If we close our eyes and move our arm, we know exactly where our arm is in relation to our body without having to look.
- ◆ This helps us to perform everyday tasks i.e. dressing, without having to rely on our vision.
- ◆ Proprioception helps our body **organise** itself for useful activity.

Functional Implications:

- ◆ Children tend to fidget and move a lot in order to produce the sensation to feed themselves with sensory input
- ◆ Poor attention to task i.e. the child has to pay more attention to things that should happen automatically i.e. sitting in a chair, rather than focusing on task provided
- ◆ Excessive or insufficient force on objects, e.g. holding a pencil so hard it breaks
- ◆ May have inefficient / awkward pencil grip
- ◆ May be clumsy and fall frequently

Activity suggestions to Help Improve Proprioceptive Processing:

Proprioceptive input is provided to the joints and muscles by activities done against some form of **resistance**. Proprioceptive input can be used as a **calming** or **alerting** technique. The following are examples of proprioceptive input:

1. In the Classroom:

- ◆ Carrying books / heavy items around the classroom
- ◆ Wearing a rucksack (with straps over both shoulders)
- ◆ Pushing chairs under the tables / placing them on the table
- ◆ Wiping off the white board / chalk board
- ◆ Chair / table 'push ups' i.e. try placing hands on the seat / table and pushing through arms to lift the body off the seat
- ◆ Doing activities lying on your stomach, using the arms to prop (i.e. drawing)
- ◆ Handwriting preparation: pushing palms flat together and counting to 5, hooking fingers together and pulling apart for a count of 5
- ◆ Craft work / modelling with resistive materials i.e. clay, plasticine
- ◆ Woodwork
- ◆ Stirring in / mixing ingredients in a mixing bowl

1. In P.E. Sessions:

- ◆ Lifting equipment / apparatus
- ◆ Tub of war
- ◆ Climbing a rope / on apparatus
- ◆ Jumping onto a crash mat from a trampette
- ◆ Pushing the wall with different body parts, i.e. back, hands, shoulders, bottom
- ◆ Wall press ups
- ◆ Rolling down the mats
- ◆ Steam rolling: lie the children in a row (on their fronts and backs) and roll a large ball over them (not their heads!) providing pressure to the joints
- ◆ Lie on the mats, hands flat on the floor next to shoulders, pushing up until arms are straight. This can be done to a count.
- ◆ Animal walks i.e. pretending to be a rabbit, frog, crab, monkey etc.
- ◆ Obstacle courses involving crawling and climbing on equipment

- ◆ Skipping with a rope / playing hopscotch
- ◆ Keep fit / aerobics routines
- ◆ Dance / drama / movement / yoga
- ◆ Throwing games using weighted objects i.e. large bean bags
- ◆ Trampolining

1. At Home:

- ◆ Helping carry / put away shopping
- ◆ Roll your child up in a duvet / blanket and ask them to escape
- ◆ Rough and tumble play
- ◆ Hugging and applying pressure to the joints
- ◆ Tight sheets / sleeping in a sleeping bag
- ◆ Wheelbarrow walks
- ◆ Pillow fights
- ◆ Jumping into a pile of cushions / duvet cover full of foam blocks
- ◆ Wrestling games involving pushing and pulling movements
- ◆ Games and songs involving pushing and pulling i.e. Ring-a-ring of Roses
- ◆ Commando crawling up stairs / over furniture etc.
- ◆ Chewing on carrots, celery, gum, caramels or liquorice
- ◆ Eating crunchy foods
- ◆ Sucking through a straw-especially thicker drinks

1. General Activities:

- ◆ Trampolining
- ◆ Karate / Judo
- ◆ Walking (particularly wearing heavier boots)
- ◆ Rowing / climbing / swimming

Strategies to help develop Proprioception:

- For the child that has **difficulty falling asleep**: try giving the child flannel sheets and a heavy duvet or sleeping bag to sleep under to provide heavy weight and deep pressure. Many children benefit from having a stuffed animal to hug.
- To improve **self-feeding**: use a weighted fork or spoon and non-slip surfaces under plates e.g. dycem mats. The weight gives clearer sensory feedback about where his/her arm is in relation to the body.
- When the child is involved in sedentary activities such as homework, reading and playing computer / board games, encourage him/her to take frequent short **movement breaks**. Insisting that the child finishes all the homework in one sitting can be counter productive.
- To provide more **deep pressure** for the child, have him/her wear a rucksack, hat, bum-bag, or place heavy things in his/her pockets. Provide a weighted vest to wear.
- Never apply too much pressure or force the child to do something they do not enjoy.
- Wear weighted wrist/ankle bands during class work
- Use adapted writing tools, e.g. weighted pens, vibrating pens, thick paintbrushes, chalk, crayons, pencil grips etc.