

## Movement

There are 7 senses. The five best known senses are:

- Touch
- Vision
- Smell
- Taste
- Sound

There are also two hidden senses that are less well known. These are:

- Proprioception (body awareness and force)
- Vestibular (balance and head movement)



Everyone has 7 senses. For children, there are NHS guidelines around recommended daily physical activity.

- For mobile children under 5 years old, this is a minimum of 3 hours a day
- For 5 – 18 year olds, this is a minimum of 1 hour a day

It is part of normal child development to need lots of opportunity to move, and this should generally be self-motivating without children needing a huge amount of encouragement to do so. Moving helps children develop all sorts of skills such as:

- Regulate their level of activity and emotion
- Learn how to use their body in new ways (motor planning)
- Become physically stronger and fitter
- Learn about risk and their own strengths and limitations

All children need movement activities but some children need more movement than others. There are many reasons for children's behaviour. This handout explores movement from a sensory perspective, but it is worth remembering children may move for other reasons too.

### Proprioception

This is our sense of where our body is and how much force we are using. Every time we move, we get proprioceptive feedback from our proprioceptors in our joints and muscles telling us where our body is in space.

It is typical for children's proprioceptive awareness to be slightly disturbed during growth spurts, when their limbs change length quickly and their brain hasn't caught up about how their size and body shape has changed.

Proprioceptive difficulties can look like:

- Poor awareness of own size, e.g. bumping into furniture, accidentally sitting on others when trying to sit in circle time, trying to fit into small spaces.
- Using too much or too little force, e.g. writing that is too light and wispy, or too heavy and may rip the paper.

Some children seek more proprioception to help them feel calmer. This can look like:

- Wanting to push, pull, jump, climb and hang more than other children.
- Squashing self into small spaces, liking lots of heavy pressure like weighted blankets, wanting to be pressed up next to parents/ friends.
- Chewing – the jaw joint and muscles provide lots of proprioceptive input.

If you think your child has proprioceptive difficulties, try including some of these proprioceptive activities into their daily routine in various environments such as home and school.

## Proprioceptive ideas

Proprioception is a safe sense, and we can generally use these strategies with most children with no ill effects. These ideas are to be used alongside a child or young person and should be enjoyable for them. Do not make a child do an activity against their will. Try activities on different days and different times to see how they help. Strategies need to be tried a few times to see if they will be helpful or not. Bear in mind, we all like different things on different days, so just because a child doesn't like something one day, they may enjoy it on another.

- Climbing frames
- Monkey bars
- Crawling through tunnels, piles of pillows, commando crawling, safe rough and tumble play
- Dancing
- Trampoline and trampolines
- Jumping activities e.g. hop scotch, jumping over obstacles
- Pulling another child around on a scooter board with a rope
- Pulling on theraband
- Using a pull up bar (e.g. ones that can be fitted in doorways)
- Bouncing on a gym ball/ peanut ball
- Rolling over a gym ball/ peanut ball
- Playing tug of war
- Lying on stomach and self-propelling on a scooter board
- Helping mix in cooking or kneading dough
- Raking leaves, sweeping up, cleaning, helping wash the car
- Working in a different position, e.g. lying on stomach over a wedge, lying under a table with work taped underneath table, standing up at an easel
- Push ups, sit ups, chair push ups, wall push ups, pushing hands together
- Going up and down stairs
- Bike riding
- Cartwheels
- Climbing trees
- Chewing on chewy items/ toys/ pen toppers/ food
- Sucking on sports bottle/ thick milkshake through a straw
- Pushing heavy items, e.g. wheelbarrow, wheely bin, trolley
- Carrying heavy items, e.g. books, wet laundry, piles of towels
- Using a bit of dried rice or beans to weight pockets or bags, or buying weighted vests, hats, belts etc. These should be approximately 5% of a child's body weight
- Using weighted cutlery, heavy glasses, wrist weights, adding nuts and bolts or bluetack to pens/ pencils to make them heavier
- Tying theraband between chair legs for child to kick and stretch against
- Body sox/ lycra to push and stretch against
- Yoga/ stretches/ animal walks/ obstacle courses/ wheelbarrow walks/ bunny hops/
- Use theraputty (harder than playdoh), hand fidgets/ hand gyms



- For older children, gym equipment such as rowing machine, weights machines, outdoor gym equipment at local parks
- Sports (anything involving using muscles and joints! Tennis, squash, football, horse riding)
- Running hands through tactile bins of dried rice or beans (heavier items)
- Swimming
- Wearing tighter clothing, tubigrip, wet suit material, surfing rash vests etc.
- Wrapping self up tightly in a blanket (with supervision).

## Vestibular

This is our sense of where our head is in space, how fast we are going and in what direction. It also helps us balance. This generally gets more sensitive the older we get, which is why as a child we may enjoy fairground rides, but they may either make us feel a bit ill as adults, or are just less enjoyable. Our vestibular system is located in our inner ear.

It is normal for all children to seek out vestibular activities such as:

- Spinning
- Lying upside down, e.g. on the sofa
- Jumping
- Balancing on items
- Enjoying fairground rides
- Swinging, sliding and going on merry go rounds
- Hanging upside down, e.g. from monkey bars



When children get travel sick, it can be a combination of vestibular and visual information getting confused in the brain (e.g. vestibular system telling the brain it's not moving that much, visual system telling the brain it's moving really fast).

Vestibular difficulties can be:

- Struggling to balance, e.g. learning to ride a bike, stand on one leg
- Fearing movement, e.g. not wanting to go on swings, slides, getting easily travel sick
- Disliking being tilted back to have hair rinsed during hair washing
- Spinning, rocking or jumping much more than other children

## Vestibular Ideas

Vestibular input is a strong sensation. For some people, it helps them to cope with daily life and feel more settled, whereas for others it can cause them to feel ill. Feeling or being sick, going pale or flushed, hiccupping or excessive giggling can all be signs a child has had too much vestibular input and this can last from a few minutes to a few hours and will gradually resolve itself. In this instance – get the child to stop. Some children find heavy weighted equipment helps them recover from this.

If in doubt, pairing vestibular input with proprioceptive input can help children tolerate a bit more, e.g. pulling themselves on a swing using a rope, but for other children, they can spin all day and not get dizzy!

- Swinging – normal swings, tyre swings, rope swings
- Scooter boards, particularly down ramps
- Using a bike
- Slides
- Merry go rounds
- Sit'n'spin toys
- Spinning chairs (e.g. IKEA egg chair)
- Rocking chairs, gaming chairs, rocking horse



- Hammocks
- Indoor doorframe swings
- Bouncing – on a trampette, trampoline, gym ball or peanut ball, particularly rolling backwards over gym/ peanut balls
- Forward rolls, cartwheels, headstands, hand stands
- Sitting on a wobble cushion, Hokki stool, Bilibo or Zuma chair
- Animal walks and yoga that get child's head moving, e.g. 'down dog' position or bunny hopping
- Skateboarding
- Rolling down hills
- Fairground rides
- Ice skating, 'ringo-ing', ski-bobbing
- See saw
- Lying upside down, e.g. on the sofa
- For little children, big bed sheets or towels can be used as makeshift hammock swings with a person holding either side. Equally, getting a length of strong lycra fabric and tying this around a table where little children can climb in and use as a hammock underneath.
- Balancing steps/ stepping stones, balancing beam
- Pogo sticks
- Running in circles

## References

NHS Choices - Physical activity guidelines for children and young people.

<http://www.nhs.uk/Livewell/fitness/Pages/physical-activity-guidelines-for-young-people.aspx>

## Contact details

### Children's Therapy Services

Telephone number: 0300 019 2936

For further general health-related information, please ask the relevant department for an information prescription or contact:

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