In-hand Manipulation Skills

Children’s Therapy Services
What is in-hand manipulation?

In-hand manipulation is the ability to hold and move an object within one hand.

The fingers and thumb are used to best position the object for the activity.

For example, picking up a pen and moving it into position with your fingers for writing or turning a peg to place in a peg board.

The small muscles of the hands (the intrinsic muscles) are vital for skilled movement, for speed and for efficient functional grasps.

Why is good in-hand manipulation necessary?

In-hand manipulation is one of the most complex fine motor skills. Children who have difficulty with in-hand manipulation may be slow or unable to complete some everyday activities.

Some daily activities in-hand manipulation is used for include: positioning a pencil when drawing; adjusting the paper when cutting with scissors; doing up buttons; tying shoelaces and using a knife and fork.

In-hand manipulation skills are essential to the handwriting process because they allow the child to move the pencil from the palm to the fingers, make needed adjustments to the pencil for writing, and turn the pencil from writing to erasing with one hand.

General Guidelines

There are three types of movement needed for good in hand manipulation:

1. Moving an object from the fingers to the palms and back again e.g. taking a coin from a purse, storing the coin in the palm and then moving the coin back to the fingers to replace in the purse

2. Adjusting and moving an object between the finger and the thumb tips e.g. turning the pages of a book, fastening buttons.

3. Rotating an object using thumb and fingers e.g. putting on or removing nuts from a bolt.
As the hand develops, the thumb side becomes skilled in precision while the little finger side becomes the strength and stability side.

**In hand manipulation activities**

- **Towel Scrunch Child** - place wrists on the table with the towel flat in front of them. Holding one end of the towel with both hands, scrunch into a long roll. Also have crumple newspaper.
- **Coins** - Rotate coins clockwise and counter clockwise; held with thumb, index and middle finger. Place coins on table and have child flip them over.
- **Chopsticks** - Pick up small objects, edibles. Walk fingers up and down the chopsticks.
- **Spinning Tops** - Spin on a flat surface (book or tray) and tilt it. Try to keep it from falling off. Walk across room while spinning on book.
- **Marbles** - Hide various coloured marbles in hand and ask child to rotate a specific colour into the thumb and index fingers.
- **Stringing beads, paper clips; make paper chains**
- **Cotton Swab Painting** - Using two paint colours, paint with cotton swab flipping from one end to the other.
- **Hole Punch Art** - use paper punch to punch out picture.
- **Opening jars**
- **Using scissors and holding them correctly helps strengthen pencil grasp muscles.**

**Pencil activities**

- Encourage your child to do these activities without using his/her hand, chest or table to help.
- Using a click pen or a multicoloured pen, click the top of the pen then walk your fingers back to hold it ready for writing
- Using a pencil with a rubber on the end, encourage your child to write a letter, turn the pencil around to rub out and then turn it back for writing again
- **Pencil windmill** - hold a pencil up in the air and try to turn it like a windmill. Try clockwise and anti clockwise
- **Sharpen a pencil**
- Using coloured pencils ask your child to pick up a pencil and write the first letter of his name. Repeat using a different coloured pencil for each letter of your child’s name.
For further information about this service contact:

Occupational and Physiotherapy Admin
The Peacock Centre
Brookfields Campus
351 Mill Road
Cambridge
CB1 3DF

Tel: 01223 218065

If you require this information in a different format such as in large print or on audio tape, or in a different language please contact the service on the details above.

If you have any compliments about this service or suggestions for improvements, contact our Patient Advice and Liaison Service on 0300 131 1000 (charges may apply depending on your network) or email: ccs-tr.pals@nhs.net.

For free, confidential health advice and information 24 hours a day, 365 days a year please contact NHS 111.