

In-Hand Manipulation

Children's Therapy Services [Patient information](#)

What is it?

In-Hand Manipulation skill refers to the ability move and position objects within one hand without the assistance of the other hand. Examples include moving coins in the palm, twirling a pencil within the fingers and turning a coin from heads to tails. It is, perhaps, the most complex fine motor skill. Three types of skills have been identified as being important components of in-hand manipulation. These are translation, shift and rotation. Translation is the movement of objects between the palm and fingertips, similar to moving coins from the palm to the fingertips to place them into a vending machine slot. Shift involves moving objects between the fingers. An example is “walking” the fingers along the shaft of a pencil, from eraser to pencil tip. Rotation is the turning of an object around using the pads of the fingers, such as flipping a pencil around so its point end is where the eraser end was. All of these components are needed to get the object oriented so it's just right for using, viewing or grasping.

Why is this important?

Children who have difficulty with in-hand manipulation may need to use both hands for activities that would typically require only one. Or they may need to unnecessarily stabilize an object against their body or an external support to get the job done. They may appear clumsy when handling objects or be slow to complete projects. Many daily activities require this high level hand skill. Examples include positioning a pencil when writing and drawing, adjusting grip on paper when cutting with scissors, using a fork and knife. Positioning buttons, zips and laces for dressing involve these subtle hand movements. Operating tools, handling nuts and bolts, nails, turning a screwdriver - all involve in-hand manipulation ability.

Activities to help develop skills

- Pick up a small object with fingers such as a bead, coin and “hide” it in your hand. Then pick up another and another.
- Move one item from your palm to your fingertips and place it down on the table.
- Practice removing small objects from a change purse or container one at a time and hiding each within the palm. Then placing them back, one at a time.
- Connect 4 game: hold several chips at a time within the palm while placing chips in the slots.
- Place coins in a Piggy Bank starting with several coins in the palm.
- String beads holding 2 or 3 beads within the palm.
- Pegboard games holding 2 or 3 pegs within the hand.

- Flip a coin from head to tail within the fingers of one hand.
- Turn dice within the fingertips to see different sides.
- Craft activities that require using bottles to squeeze: glue, glitter glue, puffy paint, fabric paint, etc.

Pencil Games

- Hold the pencil in the fingertips, ready for writing, then “walk” the fingers to the eraser end of the pencil, then back to the tip.
- Turn the pencil between the thumb and fingertips.

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:

The Health Information Centre

Poole Hospital NHS Foundation Trust
Longfleet Road, Poole, Dorset BH15 2JB

Telephone: **0300 019 8003**




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