

Trafford Children's Therapy Service

EARLY YEARS – HAND SKILLS

(Finger isolation, pincer grasp, in-hand manipulation, hand arches, hand dominance, hand strength)

Introduction

The development of precise finger movements is required for the progression of many of the fine motor activities completed by children every day in the home and nursery environment.

They are required for the development of pencil skills, scissor skills, playing with toys and independence skills such as doing up the zip on a coat and using cutlery.

Fine motor skills can be developed by developing a child's sensory awareness and by practicing games involving finger isolation and manipulation.

General Tips

- Prepare the child's sensory system prior to fine motor activity by providing deep pressure and touch input e.g. push hands together or clapping games play with play dough or messy play activity.
- The child will need supervision during these activities so that you can encourage them to isolate their fingers instead of using a whole hand grasp.

Isolating Finger Movements

- Isolation of the index finger is an important skill. It is a pre-requisite for developing a pincer grip. This is essential for performing activities of daily living such as dressing, feeding and writing.

Activities

- Finger painting.
- Pinching and poking play dough or plasticine.
- Use marzipan in place of playdoh if the child tends to eat it.
- Finger puppets.
- Pick up sticks
- Pointing at pictures in a book.
- Popping bubbles.
- Push button toys
- Use tweezers to pick up things and eye droppers to paint
- Finger action songs e.g. "Tommy thumb", "round & round the garden", "head, shoulders, knees and toes", "two little dickey birds", "wind the bobbin up".
- Tracing down a path with index finger on paper or chalk board.
- Counting small objects on the table.



Encouraging Use of a Pincer Grasp

The pincer grasp is when small items are held between the tip of the thumb and tip of the index finger.

Activities

- Encourage sensory play to develop the child's tactile sense e.g. sand, water and lentil play.
- If the child tends to put nonedible items in their mouth then use food for sensory play e.g. baked beans, jelly, cheerio's.
- Use of toys that encourage the use of one finger e.g. push button toys, toys with telephone dials.
- When feeding with finger foods encourage the child pick food from the table/plate independently or offer it between your index finger and thumb. It is very difficult to take food precisely with a palmar grasp and therefore, by presenting the food in this way, it will encourage the use of a pincer grip instead.
- Begin to use toys requiring a pincer grip such as form board puzzles with handles (larger handles to start with), pop-up farm, and 'dial' toys requiring different grips.
- Pop-up men are also good for encouraging index finger.
- Sticking stickers.
- Playing with basters or eye droppers during water play.
- Placing plastic coins in a money box.

In Hand Manipulation – Under 5's

What is it?: In Hand manipulation is the ability to use the small muscles of the hand to manipulate objects. Explorative and manipulative play usually starts at age 3 months when babies engage in finger play.

Why is it important? : This is a prerequisite for sensory development, fine motor movements and hand eye co-ordination and for developing good manipulative skills. It helps the child understand the permanence of objects and an appreciation of time and space. We use in hand manipulation in order to move small objects within the hand or use tools with precise detail. In hand manipulation is important when writing.

How you can help:

- Show your child how to pick up and manipulate different objects, initially use hand over hand if necessary
- Begin with larger activities involving one object
- Demonstrate to the child how to complete the activity
- Talk about what the fingers need to do
- Offer you child plenty of every day opportunities to handle various shaped objects (if safe and appropriate) and how to practice using their hand grasps for play.
- When more objects required add them slowly

- Ensure your child is sitting with a comfortable and supported posture (e.g. feet on the floor, and elbows resting on the table at a 90 degree angle) or is standing up at a vertical surface.

The following is a list of games and activities to help in hand manipulation:

- Pencil races – Sharpen both ends of the pencil (make sure the pencil is about 10cm in length). The child grips the pencil as if going to write and draws a dot on the page with one end of the pencil, he then has to turn the pencil around again without using his body, other hand or the table for support and draw a circle around the dot. To make fun have races with other children or time to beat records.
- Spin coins on their edge. See how many you can get to spin at the same time
- Pipe cleaners – make shapes and models
- Crushing - screw up sheets of paper into balls, using two hands then one, throw into the bin.
- Threading - Put rings on a stick (curtain ring and a piece of broom handle), Hula Hoops onto finger
- Using a small object like coins, beads etc. See how many objects the child can pick up using a pincer grip then moving the objects into their hand, without dropping any or using the table/body/other hand. The child should secure the objects in their hand with their middle, ring and little fingers. Try doing with right and left hand.
- Squeezing- play dough, bread dough, clay, plasticine. Pull apart, press into shapes and roll into snakes.
- Squeeze plastic bottles, which will squirt out water. Wring out sponges
- Pegs - attach pegs to the edge of a tin or ice cream container to make zoos or farms.
- Twisting - door knobs, jar bottle tops
- Wheelbarrow walks
- Digging - sand in a bucket, scoop out with a big spoon/spade or funnel. If inside substitute with dried beans.
- Hammering - use hammer and peg toy

Hand Arches – Under 5's

What is it? There are several arches within the palm of your hand that enable the hand to grasp objects of different sizes and shapes. These arches direct the skilled movement of your fingers and control the power of your grasp. In your hand there are three main arches, two transverse and one longitudinal arch. One arch is rigid, but the other two are flexible and are maintained by the use of those tiny muscles in your hand. You can see the shape of your arches by touching thumb to index finger or thumb to little finger.

Why is it important? Hand arches are important for cutting with cutlery and scissor work, for precise grasps and for handwriting. The three arches work to balance, stabilise and mobilise

the hand. The arches and bones in the hand work together to provide the stability needed for writing, gripping or lifting objects, and other fine motor tasks. Mobility of the hand is necessary for using your fingers or for adjusting the tightness of your grip depending on the size of the object you're holding.

How you can help:

- Demonstrate to your child how to hold objects, or weight bear on the hands in order to develop these muscles
- Offer your child plenty of every day opportunities to handle objects of various sizes (if safe and appropriate) to practice weight bearing e.g. crawling, or wheelbarrow walks , crab walks and bear walks
- For sitting activities, ensure your child is sitting with a comfortable and supported posture (e.g. feet on the floor, and elbows resting on the table at a 90 degree angle) or is standing up at a vertical surface.

The following is a list of games and activities to help develop hand arches:

- Encourage crawling on hands and knees, wheelbarrow walks
- Encourage child to place his or her forearms on a table surface and try to rake small objects (rice, raisins, and dried peas) under the palms using finger tips.
- Pinch small objects as above using thumb and index finger and/or middle finger together. Place these in small containers, e.g. bottles
- Squeeze water squirters, wind up toys
- Seal plastic bags with a zip fastening.
- Encourage your child to practise with tools held with the handle across the palm, index finger providing direction and downwards pressure e.g. cutting Velcro vegetables with a plastic knife, rolling a dressmaker's wheel on play dough or cutting pliable material with a pizza cutting wheel.
- Rotate a door knob using the tips of the thumb, index and middle fingers. Move in both directions. Parents or familiar adults may be successful in providing hand over hand assistance.
- Scrunch a fine scarf, towel or bandage under the palms by using the fingers to pull.
- Engage in as much outdoor/large physical activity as possible where power grasps are used by the hands to climb and to maintain balance when moving the whole body.
- Working with play dough roll out sausages, make ball shapes and cut



Hand Dominance – Under 5's

What is it?

Hand dominance is the preference of one hand to perform fine and gross motor tasks, such as writing, cutting or catching and throwing a ball. When one hand is consistently used more than the other hand, and is more skilled at tasks than the other hand. This is also referred to as hand preference. Children typically develop hand dominance between the age of 2 and 4 years.

The dominant hand and the non-dominant hand play a significant role in completing tasks. Both hands working together is known as bilateral coordination and is important in many school-related tasks.

Why is it important?

Some people are good at using both hands (ambidextrous) but it is much better for a child to develop strength and dexterity in one hand. This will help them to develop accuracy and speed with fine motor tasks, particularly handwriting. It is far better to have a specialised hand to do the job well than two less developed hands.

How you can help:

- Offer your child plenty of every day opportunities to participate in developing their hand skills. When working on establishing dominance, encourage daily activities that require continued use of one hand without direction as to which hand to use. Place materials at the child's midline (directly in front of the middle of their trunk), and allow the child to choose and switch hand freely during these activities and other activities;
- Ensure your child is sitting with a comfortable and supported posture (e.g. feet on the floor, and elbows resting on the table at a 90 degree angle) or is standing up at a vertical surface.
- Minimise emphasis on dominant and non-dominant hand and allow child to freely alternate hand use.
- After several weeks of daily undirected hand activity, watch for one hand to be chosen more frequently for one handed activities or used more consistently for grasping for writing implements, scissors etc.
- When you note preference for one hand emerges, focus on developing the dominant and assisting roles for the two hands.

The following is a list of games and activities to help develop hand dominance:

- Large scribbling on the chalkboard or drawing on mural paper that is on a easel or taped to the wall or floor
- Hammering wood that is clamped to a surface
- Pounding a large ball or clay with one hand until it is flat
- Swinging a ball on a string above head
- Throwing small balls or beanbags with one hand.

Examples or activities include when dominant hand is chosen:

- Drawing, writing, or painting with one hand, stabilising paper with the other.
- Cutting with one hand, stabilising and turning paper with the other.
- Using one hand to build towers with blocks, stabilising and helping to keep blocks lined up with the other.
- Tracing or scribbling over templates, holding writing implement with one hand while stabilising paper with the other.
- Opening containers, such as jars or plastic containers with lids that require stabilisation with one hand and action with other.

Hand Strength – Under 5's

What is it?

Hand Strength is the amount of resistance or tension achievable within the muscles. It includes the ability to initiate and maintain movements/positions within the hands.

Why is it important?

Hand strength influences fine motor skills, in particular, pencil grasp and handwriting, cutting with scissors and self-care such as dressing, eating with a knife and fork as well as drinking from a cup.

How you can help

Warm-up the hands with finger exercises and light massage. When trying fine motor activities stabilise as many joints as possible, e.g. sitting correctly, both elbows/forearms resting on the table. Be aware that fatigue may occur. Offer you child plenty of every day opportunities to handle small objects (if safe and appropriate) to practice using their index finger to point and isolate fingers for play e.g. play finger soccer, use key pad gadgets see activities below :

- Ensure your child is sitting with a comfortable and supported posture (e.g. feet on the floor, and elbows resting on the table at a 90 degree angle) or is standing up at a vertical surface.
- Work within your limits and gradually increase the length of sessions. Work on two or three of the following activity ideas daily, using different activities each day.

The following is a list of games and activities to help hand strength development:

- Crawling and wheelbarrow walks
- Encourage use of a sponge in the bath or water play to squeeze, wringing out flannel.
- Squeeze soft balls such as juggling balls or rolled up socks in the hands.
- Opening containers with screw on lids.
- Push and pull games such as lego/duplo blocks, pop beads, stickle bricks.
- Scrunching up paper.
- Push button toys and playing 'tug of war' with a toy.
- Stickle Bricks are available to purchase from shops such as Woolworths and Argos.

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- Use “theraputty”, plasticine, or play dough. Squash the dough/putty with your fist. Use a powerful squeeze so that it oozes out between the fingers. Do this with both hands.
- Make various size balls with the dough/putty. Start by rolling the dough between your 2 hands. Then make 2 separate balls simultaneously by rolling them on a table. Try to get the hands to go in opposite directions i.e. one hand clockwise, the other anti-clockwise – then change over.
- Using both hands together, make a long snake by rolling the dough/putty out on a table. Using a pincer grip i.e. thumb and first finger, squeeze the dough/putty to make patterns on the “snakes” back. You can alternate fingers using thumb and middle finger, thumb and ring finger, thumb and little finger.
- Poking holes. Using each finger on its own, press hard into the dough/putty. As you get better you can make the dough/putty layer thicker, thereby having to press down harder.
- Twist it. Using both hands together, twist the dough/putty around and around. Make one hand go clockwise and the other anti-clockwise. Then start again and make each hand go in the opposite direction.
- Pinch and twist it. Holding the dough/putty in one hand, grab the end with the other hand. Holding the dough/putty between your thumb and index finger and twist it around. Start again with the next finger and go through all fingers on the one hand. Then swap hands and do the same.