

Trafford Children's Therapy Service

SECONDARY SCHOOL – HAND SKILLS

(In-hand manipulation, hand arches, hand dominance, hand strength)

In Hand Manipulation – secondary children

What is it?

In Hand manipulation is the ability to use the small muscles of the hand and to move objects around in the palm of your hand and to your fingertips. 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:

- 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.
- Begin with larger activities involving one object
- 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

- Pegboard – Hold two pegs in hand and move one to tips of fingers and place in peg board. Increase the number you start with to ten. Playing battleships with pegs
- Connect 4, Connecting Straws, Dominoes
- Pencil walk and flip: hold a pencil as if you are going to write with it. Keeping the tripod position, walk your fingers up towards the eraser. When you get there, flip the pencil over without using other hand or a surface to brace it. Walk fingers back to the other end, still keeping the tripod position, and repeat.
- Change position of coloured balls in the hand by using fingers to move coloured balls around
- Playing Monopoly – counting paper money
- Card games- holding cards and card tricks
- Making pottery
- Decorating cards
- Baking ,making sandwiches, cooking
- Threading a needle
- Opening buttons
- Using chop sticks to eat / pick up objects
- Sweeping - raking leaves, sweeping floor, vacuuming.
- Hammering - simple carpentry and screwing objects together
- Use various strengths of Theraputty to complete rolling stretching and pulling activities.



Hand Arches – Secondary Children

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 stability and mobility in 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 you 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
- Show your child how to weight bear using hands
- 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 use of scissors, stapler and punch
- Use a rolling pin to flatten out, cookie dough then use cookie cutters to make shapes
- Rolling dice, playing cards
- Cutting different textured fabrics with scissors for art
- Skewer toothpicks, wooden sticks with food
- Complex geoboards: make geometrical shapes using rubber bands on geoboards
- Ziplok bags: encourage using fingertips to press and seal sandwich bags
- Carpentry
- Cooking, baking, bread making
- Climbing
- Gymnastics
- Weight lifting
- Learn to balance a tray on the tips of the fingers of one hand
- Ipad games
- Playing instruments

Hand Dominance – Secondary**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 plays 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:

- Cooking- Holding the bowl and stirring, the more the resistance the better e.g. crunchies, custard, flapjacks. jelly, gravy, beating eggs. holding in one hand and cutting - fruit salad, apples for pie, using a manual whisk to make chocolate/or milk shakes
- Cutting with scissors in one hand, stabilising and turning paper with the other.
- Making jewellery.
- Carpentry- hammering , sawing
- Embroidery
- All ball games: ten pin bowling, tennis, table tennis
- Card Games- holding with supporting hand

Hand Strength – Secondary

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:

- Squeeze soft balls such as juggling balls, stress balls and rings.
- Opening containers with screw on lids, Squeezing toothpaste tubes
- Play card games
- Rolling dice games
- Baking bread, biscuits and making cakes
- Bat and Ball Games
- Use hand grip with moulded handles
- Elastic band stretches
- Climbing, basketball
- Playing piano, flute, guitar
- Theraputty of different strengths use for stretching , rolling, twisting and pulling
- Keyboard games i.e. computer games requiring a keyboard
- Ten pin bowling
- Use a hand master exercise ball
- Picking up objects with tweezers or clothes pegs clips – you can increase the difficulty by wrapping a rubber band around the end to make it harder to squeeze open.

