

HAND AND UPPER BODY STRENGTH

Occupational Therapy

What is hand strength and why is it important?

- Muscle strength in the hands and fingers develops as children grow, and is important for your child's ability to participate in everyday activities such as doing up buttons and zippers, climbing monkey bars, cutting up food, and eventually writing and typing.
- Developing hand strength from a young age is important to make sure the muscles are ready when these tasks are introduced. This will help them not only be successful with learning these skills, but also with endurance for longer tasks (such as writing for longer periods).

There are three main areas of hand strength that we consider:

Posture & Upper Extremity Stability

- Everything in the hand is powered by the arms, shoulders and trunk, so in order to increase hand strength we also have to make sure posture is good, the trunk is stable, and shoulders and arms are aligned.



Grip Strength

- This refers to the strength in the whole hand. Grip strength is important for tasks such as holding onto large objects, pulling objects apart and opening jars.

Pinch

- This involves the thumb, index finger, and sometimes middle finger. Developing a strong pinch is important to doing up fasteners and future scissor and handwriting skills.
- It is recommended that your child have regular experience with a variety of hand strengthening toys and activities. Provide close supervision for safety when playing with small parts.

The following are some suggested activities for developing strength around the joints of your child's upper body, arms, hands, and fingers:

Upper Body Strengthening

- When doing these activities be sure that the elbows are slightly bent and not locked straight.
- Have the child climb at the park with their arms and legs. Encourage the child to climb up a slide and/or climbing wall with supervision.
- Encourage walks that include weight through their arms, such as bear walk (hands and feet), puppy walk (hands and knees), frog (squat and jump up), and crab (sit on buttocks, place hands and feet down and lift buttocks up).
- Have them kneel on the floor with one knee up, or sit well supported in a chair. Face them in the same position. Join hands and have them match your pressure. Push into their hands with variable resistance. Ensure the child keeps their elbows slightly bent and back straight. This exercise can also be done in standing, with one leg back for support.
- Have the child push heavy objects (e.g. vacuum, grocery cart, wall, etc.) while keeping their elbows slightly bent (i.e. no hyperextension), and without shoulder blades winging.
- Have the child complete activities and games, on a vertical surface or that involve working against gravity (e.g. painting on an easel, writing on a chalk board, pin the tail on the donkey; popping bubbles, or tossing a ball back and forth).
- Playing with resistive toys like rapper snappers and pop beads (small and large), by pulling apart and pushing back together.
- Superman: Child lying on stomach with arms stretched out in front and legs straight out behind, child can pretend to be flying like superman by lifting straightened arms and legs off the floor. Make sure the child does not bend elbows or knees, and that hands and feet are together. Hold this position for 10 seconds, then relax and repeat 10 times.
- Row-your-boat: Sing the “Row-row-row your boat” song as you and your child sit facing each other with feet touching and holding hands (or holding onto a stretchy object such as a bicycle innertube). Take turns pulling each other from laying down to sitting.
- Wheelbarrow Walking: This is a great activity to provide input to the shoulder muscles. Have the child walk on their hands while you hold their legs. Make this activity more difficult by introducing an obstacle course.

Hand and Finger Strengthening

Grip Strength

- Squeezing foam or gel balls and squishies. Pulling apart stretchy toys, pop-beads, or super tubes, etc.
- In water bin or during bath time, provide sponges and face clothes and encourage your child to squeeze or wring them to squeeze out the water. This would also strengthen bilateral hand use when using the two hands together to accomplish the task.
- Using a spray bottle to water plants or target toys in tub. Start with small resistance and progress to more resistance.

Finger/Pinch Strength

- Games involving pinching and clipping clothespins. Start with clothespins that are easy to clip (eg. wooden ones) and progress to clothespins with more resistance, ensuring that they keep thumbs flexed and web space open while squeezing the clothespins.
- Using chopsticks/oversized tweezers *in one hand* or using their fingertips to pick up cotton balls or small toys, then drop them into a container (Game example: Feed the Dog/Monkey/Rabbit).
- Playing with putty or dough (pinching, rolling, squeezing, pressing, blending colours, flattening on tabletop to make “pizza”). Use a variety of kitchen tools with dough (i.e., garlic press, strainer, grater, etc.). Edible dough is a good idea for children who are likely to put it in their mouth. Hide beads or small items in the dough and have the child find them.
- Kid K’nex, small Lego, or other small toys with resistance (ex: Bunchems), to create shapes/forms by pulling them apart and pushing them together using fingertips. This would also contribute to increasing bilateral hand use.
- Holding 3-5 beads, pennies or bingo chips in their hand while bringing them out one at a time to bead them on to a string or insert them into a piggy bank (the game Connect 4 can also be used). Placing beads on a string would also strengthen bilateral hand use.
- Some self-care task also encourage hand/finger strengthening and bilateral hand use, like pulling boots and shoes on, or opening and closing velcro closures. Opening/closing food containers and baggies of a variety of styles and sizes using both hands. 3

Infant, Toddler, & Pre-school Hand Strengthening Ideas

Toys & Games

- Give your child a “ball” of masking tape – encourage them to pass it from one hand to the other.
- Crumpling / tearing paper.
- Pull apart toys such as mega-blocks, pop-beads and rapper snappers.
- Playdough - however if your child will eat the dough, try food play instead.

Food Play

- Offer yogurt, pudding or baby food on high chair tray and encourage drawing with index finger.
- Provide cooled noodles and encourage your child to pull them apart.

Water Play

- Provide a sponge at bath time and encourage your child to squeeze it.
- For older children, offer them a squirt bottle with easy resistance.

Gross Motor Activities

- Climbing (climbing wall/jungle gym).
- Crawling/Bear Crawls.
- Doing activities on vertical surfaces (whiteboard, chalkboard).

Finger Plays

- Finger plays and musical games are an excellent way to encourage hand strengthening and dexterity while also helping your child’s social and language development.

❖ Easy Finger Plays

Pat-A-Cake

Pat-a-cake, pat-a-cake. Baker's Man.
Bake me a cake. As fast as you can.
(Clap hands rhythmically)
Roll it and pat it (Roll and clap hands)
And mark it with a B (Trace B on palm)
And put it in the oven (extend both hands)
For baby and me (point to Baby and Self).

This Little Piggie

(For each "piggy" wiggle one of your child's fingers, moving from thumb to baby finger. At end wiggle all fingers together and tickle child.)

This little piggy went to market
This little piggy stayed home
This little piggy had roast beef
This little piggy had none.
And this little piggy cried
Wee, wee, wee,
All the way home.

Open-them-Shut-them

Open them, shut them, Open them, shut them, (open and close both hands in front of baby)

Give a little clap clap clap. (clap on each "clap")

Open, shut them, open, shut them, (open and close both hands in front of baby)

Lay them in your lap lap lap. (pat your legs each time you say "lap").

❖ Moderate Finger Plays

Five Little Monkeys

Five little monkeys jumping on the bed

(hold up five fingers and move as if jumping)

One fell off and bumped his head (rub head)

Mommy called the doctor and the doctor said,

"No more monkeys jumping on the bed!" (shake index finger as if disciplining)

Continue, decreasing the number of monkeys each time (four, three, two, one).

❖ Difficult Finger Plays

Where is Thumbkin?

Where is Thumbkin? Where is Thumbkin? (hold hands behind back hiding them from baby)

Here I am! (bring out one hand with thumb up)

Here I am! (bring out other hand with thumb up)

How are you today, Sir? (have thumbs "talk")

Very well, I thank you.

Run away. Run away. (thumbs return behind back)

Continue with the rest of the fingers: Where is Pointer? Where is Tall Man? Where is Ring Man? Where is Pinky?

Touch Your Nose

Touch your nose, touch your chin,

That's the way this game begins.

Touch your eyes, touch your ears,

Touch your two soft lips right here.

Touch your elbow where it bends

That's the way this touch game ends!