



Motor Planning & Prehension in Infants & Toddlers

- Motor planning refers to a person's ability to understand, plan out, and carry out a variety of actions effectively and in the appropriate sequence.
- Prehension refers to a person's ability to seize or grasp an object or item.
- Prehension begins to develop from birth as we are born with different reflexes such as the palmar grasp reflex which occurs when you place something in a baby's palm and they reflexively grasp it.

Prehension Development

- By three months, a child should reach for and try to grasp objects using both hands.
- Around five months, a child may try to grasp objects in one hand and by six months they develop a more controlled reaching pattern.
- Between the ages of six months and one year, the child will develop many skills such as grasping objects and bringing them to their mouth, releasing objects intentionally, transferring objects from one hand to another and begin to use a pincer grasp which is grasping small items between the pads of the first finger and thumb.
- Between one to two years of age, additional skills such as stacking blocks, scribbling, turning knobs, self-feeding, bringing spoon to mouth, and holding and drinking from a cup begin to develop.
- Between two and three years of age, a child will begin to manipulate malleable materials such as play doh, string large beads, snips with scissors, turn single pages in a book, develop hand dominance, and hold crayons with thumb and fingers to imitate line strokes.

Prehension Affects Motor Planning in Toddlers

Research suggests that the best way to work on improving prehension development in infants is to engage them in functional activities in the object's natural environment as opposed to allowing them to only simply explore the object. When the child uses the object in a functional way in its natural environment, they are better able to understand how they need to grasp the item and are able to use it more effectively.

(Contaldo, A., et al., 2013)

Here are examples of activities you can do with your toddler to help improve motor planning and develop effective prehension patterns

- **Brush a dolls hair**
- **Pretend to feed a doll or give it a bottle**
- **Have a tea party and model picking up a cup to drink**
- **Use a set of toy tools to “fix” objects while modeling how to use each tool**
- **Ring stacker toys**
- **Toss a ball**
- **Play small instruments**
- **Set up a small racetrack and push toy cars around the track**
- **Roll and flatten out play doh and use cookie cutters to cut shapes**
- **Dial numbers on a fake telephone and pretend your talking to each other**

YouTube video: <https://youtu.be/gmHyIetwRg0>

Resources

BHSC. (n. d.). Milestone for Fine Motor Skills. [askbhsc.org. https://askbhsc.org/early-childhood-education/developmental-resources/milestones-for-fine-motor-skills/](https://askbhsc.org/early-childhood-education/developmental-resources/milestones-for-fine-motor-skills/)

Contaldo, A., Cola, E., Minichilli, F., Crecchi, A., Carboncini, M., Rossi, B., & Bonfiglio, L. (2013). Object use affects motor planning in infant prehension. *Human Movement Science*, 32, 498-510. <http://dx.doi.org/10.1016/j.humov.2013.02.005>