



## Hands for Infants and Young Children

Infants and young children can benefit from early fittings in several ways. A prosthesis can help with balance as the child learns to sit up and starts to crawl; the child gets used to the weight and feel of a prosthesis so that they are ready for a later fitting; and the hand can be used to perform simple tasks early on such as holding a soother, a toy or cookie. Children who are fitted at a young age may accept a prosthesis more readily. It is very important that the child be taught how to use the device for specific tasks. A child must perceive “benefit” to wearing the device or else he/she will not wear it. Some of the hand options (also referred to as ‘terminal devices’) are shown below.

### Passive Arms

Passive hands primarily provide a good cosmetic appearance, however, function is limited.

The **Baby Mitt** by Hosmer is a soft foam hand which helps to protect the child during a fall and aids with balance (two sizes – infants and toddlers).

The **Crawling Prosthesis** by Hosmer is a soft foam hand with a closed fist.

The **Physolino Babyhand** by Ottobock is made of medical silicone and is suited for the initial fitting of babies and infants. The hand is easy to clean and is durable enough to withstand sucking, chewing or biting. The fingers are soft and flexible but also strong enough to grip and tightly hold toys or other objects with both hands. The Babyhand is even appropriate for crawling. Form, colour and surface structure are reproduced according to the baby’s natural hand.

Baby Mitt



Crawling Prosthesis



Physolino Babyhand



The **Greek Series Infant & Pediatric Hands** and the **Infant 2 Hand** from TRS are made from durable and soft polymer material. The Greek Series is available in three sizes to accommodate children from ages four months to three years. It has elastic, flexible holding capability to encourage the use of objects such as toys and soothers. The Infant 2 is a passive prosthetic hand that is perfect for crawling and toddling. It has a smooth, cup shaped surface to assist with pulling and pushing objects. The Infant 2 is appropriate for children aged 6-18 months.

The **L'il E-Z Infant Hand** by TRS has a grasping feature and soft, flexible, polymer fingers. The thumb is designed to open easily but has enough tension in the thumb to allow the child to push small objects into the hand and hold them there (can be fitted as early as six months of age).

## Functional Arms

Functional arms can either be “body powered” or “electric” (most often myoelectric). These are options once a child is considered to be ready for active function and also based on each individual child’s development. Children as young as one year of age can be assessed for functional arms.

## Body Powered

Cable-operated hands and hooks are known as “body powered” prostheses and are operated by means of a cable and harness system. By using the back and shoulder muscles, the cable is pulled which either opens (“voluntary opening”) or closes (“voluntary closing”) the hand.

The **Child CAPP Hand** by Hosmer has an internal spring-loaded voluntary opening mechanism and can be ordered with either a soft, medium or firm spring to adjust the grip force. The hand closes to allow the child to hold objects such as a telephone handset or a pen in a natural writing position. The Child CAPP Hand, which is three inches in length, has a replaceable thumb section for wear and can be customized to each individual child.

The **Lite-Touch Children’s Biomechanical Hands** by TRS provide a wide range of gripping force, controlled by the child, through the voluntary closing mechanism. Functional reaching and grasping is optimal as the folded finger design eliminates the interference of five extended fingers. The hand, available in three sizes (small, medium and large), allows the child to “feel” the strength of his/her grip.

Infant 2 Hand



L'il E-Z Infant Hand



Child CAPP Hand



Greek Series Hand



Lite Touch Children's Biomechanical Hand



The **Adept Prehensors** by TRS allow children to grip as hard as or harder than a natural hand. The voluntary closing operation allows the user to create as little or as much gripping force required for an activity. The Adept Prehensors are available in four sizes to accommodate children as young as one all the way to young adult.

**Child Size Hooks** by Hosmer (Models 12P and 10P) are covered with plastic to minimize chance of injury. No glove or delicate mechanism means the child can play hard with little need for maintenance. “Fingers” allow precision manipulation of small or thin objects, and are thin enough to let the child see what they are picking up.

## Electric (Myoelectric)

A “myoelectric” prosthesis is operated when the electrodes pick up muscle (Greek: myo) impulses from the child’s residual limb. These are then translated into electrical signals that are sent to the electric hand to open or close it. The power is provided by a battery in the prosthesis.

The **Electrohand** by Ottobock has the choice of four different control options to optimize fittings for children with a long residual limb or wrist disarticulation (four sizes for children ages one to 13).

**Adept Prehensors**



**Child Size Hook**



**Electrohand**

