A child's powered artificial limb (prosthesis)

Information for children, their families and carers

Prosthetics
When will my child have a powered prosthesis?

A powered prosthesis is not usually provided before the age of 2½ years. It is dependent on your child's developmental milestones and the decision of the multi-disciplinary team (i.e. doctor, prosthetist, occupational therapist).

It is beneficial to encourage your child to become used to the prosthesis at such an early age as it is much easier than trying to learn to use it later, when it is more difficult to break one-handed habits.

The prosthesis is operated by a battery-powered motor. This can be activated by a number of different methods but the most usual method is an electrode. This is placed in the socket so that it is in close contact with the skin (no arm mitt is worn between the socket and the skin). The electrode picks up and amplifies the signal generated by the muscle. The motor in the hand is then activated in order to open it. If a single electrode is used, the hand will close automatically - your child will not need to control this action at this stage.

How often should the prosthesis be worn?

It is more important to wear the prosthesis for one hour every day than for six hours once a week.

When your child first receives their powered arm it is advisable to wear it for between a half and one hour each day for the first week. The time can then be gradually increased so that your child is wearing the prosthesis for half a day by the end of the first month.

Your child will be encouraged to learn how to operate the hand using one-handed activities to begin with. As they become more used to the new hand, they will be encouraged to use the powered hand to assist with two-handed activities.
Progress may be slow to begin with; children all differ in their abilities and there is no cause for concern if your child is reluctant to engage at first. Most importantly, the sessions should be fun and informal.

**Suggested activities**

Depending on the age of your child when their first powered prosthesis is prescribed, the activities below will help them to learn how to use the hand.

**Using the prosthesis alone:**

- Jigsaws with knobs
- Marble games (for example a helter-skelter run)
- Posting boxes
- Building bricks
- Holding food or sweets (for example a packet of raisins, small yoghurt pots)

**Using both hands:**

- Construction toys
- Threading beads
- Blowing bubbles (holding the pot of bubbles in the prosthesis)
- Playing musical instruments (for example a triangle)
- Sewing cards
- Dressing dolls or teddy bears
- Riding a bicycle or scooter
- Baking activities
- Play dough
- Pencil, scissor and paper tasks
- Use of knife and fork
How should I care for the prosthesis?

The inside of the socket should be wiped out daily, after wear, using an antiseptic wipe.

Do not use any abrasive or harsh solutions inside the socket as the electrode(s) can be easily scratched.

The cosmetic glove should be washed regularly with soap and water.

The powered hand **must not** be totally immersed in water as this will damage the internal components.

The cosmetic glove provides protection for the powered hand and should be inspected regularly for any tears or holes. If the glove is in poor condition, this should be replaced by the prosthetist at the centre.

Care must be taken if your child plays in sand or water. If either material creeps between the glove and the hand, it can cause damage to the motor. Use of a water resistant sleeve will help prevent this happening.

The hand is not to be used as a ‘hammer’ or weapon. As well as hurting another person quite badly, the costly mechanisms will also become damaged.

**What about the electrode settings?**

The electrode setting will be adjusted at the delivery appointment and should therefore be correct for your child’s level of expertise. As your child becomes more used to the prosthesis it may be necessary for the setting to be adjusted. This will be done by the prosthetist or occupational therapist at the centre.
What should I do with the batteries?

You will be supplied with 4 batteries and a charger. One of the batteries should be used in the prosthesis and one should be carried as a spare. The remaining 2 batteries should be charged overnight so that there is always a fully charged battery available. Alternating the batteries will preserve their life.

The battery should be switched off and removed when the prosthesis is not being worn.

If the hand does not work after trying a different battery, please contact the centre to arrange for it to be checked over by the prosthetist. Please do not attempt to repair it yourself.

Wearing the prosthesis at school or nursery

It may be necessary for your Occupational Therapist to visit your child’s nursery or school to explain to staff how to put on and take off the prosthesis and to advise on its correct use.

If your child is at school, the powered prosthesis should not be worn for PE and Games.

Who should I contact if I have any questions or concerns?

If you have any concerns at all about your child’s prosthesis, please contact the staff at the centre by telephoning Reception on:

- 0114 271 5566
Mobility and Specialised Rehabilitation Centre (M&SRC)
Northern General Hospital
Herries Road
Sheffield

• 0114 271 5566