

# Hydrotherapy for Children with Neuromuscular Disorders (NMD)

Hydrotherapy is a physiotherapy treatment carried out in water where movement against the weight of the water helps exercise muscles and floating is made easier because of the buoyancy of the water.

The main aim of a hydrotherapy or swimming program for all children, is to learn water safety and how to swim. There are additional benefits for children with NMD which makes swimming a fabulous sport to encourage:

- Water allows a freedom of movement that is not always possible on land. This is due to the buoyancy effect of water which assists movement.
- The positive effects of exercise which result in increased stamina, endurance, fitness and weight control.
- Breath holding and increased fitness improves lung function.
- The warm environment in a hydrotherapy pool can help when stretching muscles.
- Helps to build self esteem.
- Social contact with other children.
- Learning to swim is fun!

## Issues to consider:

- Exercise can make you tired so don't over do it — allow your child to rest when they need to.
- There is a risk of getting a cold or chest infection.
- A child's ability to float may change as their disease progresses.
- The program may need to be modified as weakness increases and contractures develop.
- Safety is paramount as children's muscles get weaker.

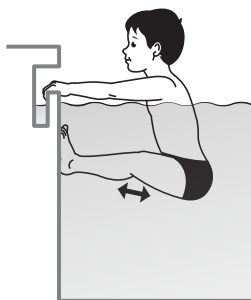
## Exercises and activities in the water

### Warm up

- Walking — forwards, backwards, sideways (the deeper the water and the faster you walk, the harder you have to work). Depending on the depth of water at the pool you are using you can start in shallower water and then progress to deeper water.

### Stretches

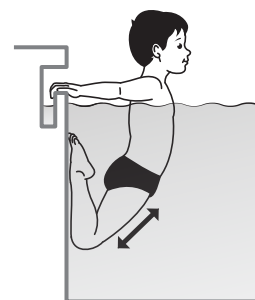
- Hamstring and calf stretch — hold onto edge, place feet on wall, try and get heels down and straighten knees.



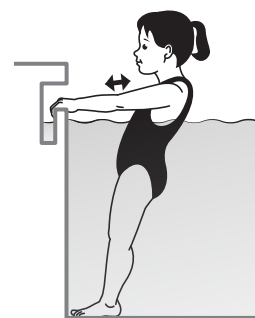
- Back and hip stretch — hold onto wall, place feet on wall and curl up into a ball.



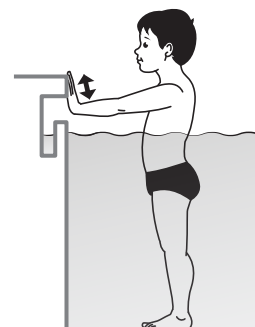
- Shoulder and thigh (parachute) — back to wall, stretch hands back to hold onto wall, place front surface of lower leg on the wall of the pool, and push tummy out.



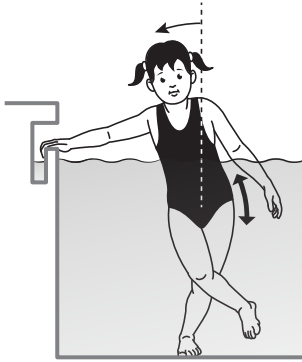
- If you have trouble keeping hold of the edge of the pool in the previous three stretches, you may need an adult to stand behind you and help.
- In the previous three positions see if you can walk around the edge of the pool while still holding on.
- Elbows — hold on to the side of the pool, straighten elbows as far as possible and lean back. You may feel a stretch around your elbows.



- Hands — stand facing the wall, place a flat hand on the wall of the pool, straighten elbow until you feel a stretch in your hand and wrist.



- Hip — stand side-on to the wall, stand on the leg furthest away from the wall, cross the free leg over the one you are standing on and lean towards the wall. You should feel a stretch in the side of your hip and thigh on the leg you are standing on.



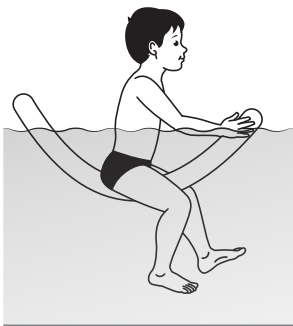
**You should hold all stretches for at least 30 seconds and do each one five times.**

### **Breathing games**

- Blowing bubbles — above and below the water.
- Blowing light floating toys across the water.
- Breath holding under water — e.g. retrieving sinkers from bottom of pool, swimming through hoops, swimming through someone's legs (may need help from an adult to swim to bottom of pool).

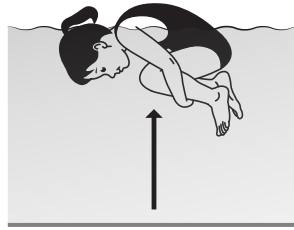
### **Balance is stillness**

- Balance on a float — e.g. noodle between legs (horse rides), noodle/s under bottom, or sitting on kick board. To make these activities harder encourage movement i.e. sculling with arms or kicking with legs while balancing on float.



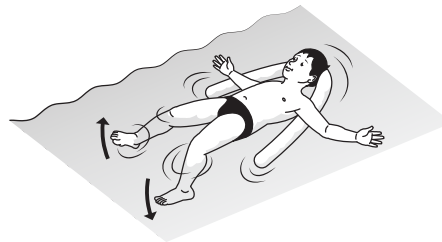
- Floating:
  - on back: like a starfish, a soldier
  - add movement: use arms to scull or legs to kick

- Make a whirlpool (walk around in a circle in one direction) and then stop and try to stand still.
- Make a whirlpool walking in one direction, then turn around and walk in opposite direction.
- Move from floating on your back to standing.
- Somersaults in the water (may need help from adult when first attempting this).
- Mushrooms — take a big breath, swim to bottom of pool, hug knees to chest and float to top.



### **General exercise:**

- Swimming (freestyle, breast stroke, backstroke, sidestroke).
- Kicking with board — lie on tummy or back.
- Kicking with a noodle — lie on tummy or back, bend noodle and tuck one end under each arm.



- Swimming under water — through hoops; diving to collect sinkers; through someone's legs
- Walking, running, jumping in water.
- Pushing balls or floating toys as far under water as possible and allowing them to pop up.
- Bicycle races across the pool lying on your back.
- Blast offs or torpedoes from the side of the pool (how far can you blast).

## **Note**

Despite the assistance that water buoyancy provides, children with NMD who have weak neck muscles may find floating on their back difficult. A float positioned around the neck can be useful if this is the case.

Should you have any problems or need any advice regarding a hydrotherapy or swimming program, please contact your local physiotherapist. If your child's disease has progressed and his/her ability to move has changed it is important to get their hydrotherapy/swimming program reviewed by his/her local physiotherapist.