

Upper Limbs	Therapy prescription	Session Date							
Elbow flexor stretch Subject position: Inclined standing or sitting with the shoulder abducted with a float in their hand. Therapist position: Standing behind, to the side or in front of the subject stabilising the position of the upper arm. Action: Extend the elbow and then push the float down into the water. The position is held for the count of 5. The arm is then relaxed allowing it to move up in the water producing a stretch until limited by discomfort or anatomical restriction occurs. Alternatives: Use a plinth, sit or lean against the wall without a float. Use turbulent drag as therapist moves subject. Buoyancy Counterbalanced (BC) with float and momentum. Modified proprioceptive neuromuscular facilitation (PNF) patterns Comment	☐ Yes ☐ No								
Wrist Subject position: Standing holding or hands flat on a small float Therapist position: Stabilises the distal forearm if required Action: Flex the wrist with the forearm pronated and under the water.	Yes No								



Upper Limbs	Therapy prescription	Session Date //							
Radio-ulnar Supination/Pronation Subject position: Arm in abduction, external rotation, supination, wrist extension and finger extension via positioning by therapist or against the poolside wall Therapist position: Action: Move the trunk away from the arm (this also gives a pectoral stretch) to bat a ball etc. with opposite hand.	Yes								
Comment									
Ai Chi uplifting In early stages supination and pronation can also be combined with BA shoulder medial rotation (arm up against back) and pushing floats under water. Also simple pronation/supination wearing a swim glove or using a paddle to reduce streamlining Comment	Yes No								
Thumb and Finger stretches Need to combine with wrist and elbow as a long finger flexor stretch. Comment	Yes								



Lower Limbs	Therapy prescription	Session Date //	Session Date	Session Date/	Session Date //	Session Date//	Session Date/	Session Date/	Session Date
Hip Flexor stretch Subject position: Standing facing the wall holding onto the rail they flex one knee against the wall to stabilise the pelvis. A float is placed on the other knee. Therapist position: Stand behind the subject and stabilise the pelvis and trunk Action: Push the float down into the water. The position is held for the count of 5. The leg is then relaxed allowing it to move up in the water producing a stretch until limited by discomfort or anatomical restriction occurs. Alternatives: Use a plinth or lean against the wall without a float. Use side lying with drag and modified Watsu® hold. Use modified PNF patterns in supine. Use turbulent drag supported upright by the therapist and using a noodle or body band. Comment	☐ Yes ☐ No								
ITB Hip abductors and external rotators Need to prevent too much knee flexion. Adapted Watsu® in supported side lying. Incorporate into half roll facilitating from legs, upper body and neck supported by floats. Sitting to lying with drag and use of trunk side flexion and rotation, use of sandwich position to prevent overuse of hip flexors. Rhythmic Stabilisations at trunk with rotations/side flexion – plank.	Yes No								



Lower Limbs	Therapy prescription	Session Date//	Session Date	Session Date//	Session Date	Session Date	Session Date	Session Date	Session Date//
Knee Flexor stretch (1) Subject position: Sitting on a step, plinth or submerged stool with the knee extended and stabilising their thigh with their hand. A float is placed on the ankle. Therapist position: The therapist may need to stabilise the thigh. Action: Push the float down into the water. The position is held for the count of 5. The leg is then relaxed allowing extensions to occur until limited by discomfort or anatomical restriction occurs.	Yes No								
Comment									
Knee Flexor stretch (2) Subject position: Squatting with their back against the wall and one leg extended out in front of them. A float on the knee. Therapist position: Action: Raise the leg as far as possible without flexing the knee. The positon is held for a count of 5 and the subject then attempts to raise the leg further until limited by discomfort or anatomical restriction occurs. Alternatives: Use a plinth, sit on step or sunken stool/seat or therapist. without a float. Use side lying with drag and modified Watsu® hold. Use modified PNF patterns in supine and sitting. Use turbulent drag supported upright by the therapist and using a noodle or body band. Use buoyancy by supported sitting and lowering body down into water with leg outstretched.	☐ Yes ☐ No								
Comment									



Lower Limbs	Therapy prescription	Session Date							
Ankle and Foot stretches Subject position: Sitting on a plinth, step or submersed stool with the knee slightly flexed. Therapist position: Facing the subject. Hand under the heel and forearm along the plantar aspect of the foot. Action: Stretches against the wall. Incorporate into modified PNF patterns supine and sitting. Sandwich support to maintain hip extension whilst rotating and/or side flexing the trunk. Stand on a noodle and allow foot to come up.	☐ Yes ☐ No								



Trunk and Neck	Therapy prescription	Session Date	Session Date //	Session Date//	Session Date				
Neck stretches Subject position: In supine float Therapist position: Supporting the head with their hands. Action: The therapist flexes the neck by moving the head and elongating the neck.	Yes								
Comment									
Trunk Stretches Rotation Subject position: Seated and immersed Therapist position: May need to stabilise the pelvis. Action: The subject reaches with both hands on a float or supported with an inflatable ring. The therapist assists them to rotate the trunk. The position is held for the count of 5. In supine float with knees flexed the legs are relaxed allowing them to move up in the water producing a stretch until limited by discomfort or anatomical	Yes No								
Comment									



Trunk and Neck	Therapy prescription	Session Date//	Session Date						
Trunk Stretches Side FlexionSubject position: Facing the wall holding the rail.The knees are then either flexed or extendeddepending upon the depth of the pool, the hipsmust remain extended.Therapist position: Stabilising the upper trunk.Action: The subject allows the legs to move up inthe water. They then push them down into thewater. The positon is held for the count of 5. Thelegs are then relaxed allowing them to move up inthe water producing a stretch until limited bydiscomfort or anatomical restriction occurs.Seaweeding and trunk elongation in supine floatand an upright position, include the shoulder, BCwith drag for both side flexion and rotation,include pectoral stretch.	☐ Yes ☐ No								
Comment									



Upper Limbs	Therapy prescription	Session Date							
Shoulder Abduction Use buoyancy counterbalanced position, supine or standing and increase speed, then add a bat. Penguin arms with speed whilst standing or sitting on a woggle or kickboard. Comment	Yes								
Shoulder Flexion and Extension (fingers open or closed to affect drag and streamlining) Use standing position and increase speed, then add a bat with forward and backward walking	Yes								
Elbow Flexion and Extension Use standing position and increase speed, then add a bat or swim glove, pushing float down. Comment	Yes								



Upper Limbs	Therapy prescription	Session Date	Session Date /	Session Date					
<i>Wrist and fingers</i> All movements In standing or sitting on a plinth, step or submersed stool. Keep the arm by the side with the elbow flexed to about 90 degrees. Increase	Yes								
speed of movements or use a bat.	No								
Comment									
Adapted PNF patterns in water for the whole									
upper limb.	Yes								
	🗌 No								
Comment									



Lower Limbs	Therapy prescription	Session Date							
<i>Hip</i> Extension	Yes								
In supine float (preventing the trunk from									
extending). Standing increase speed.	🗌 No								
Comment									
<i>Hip</i> Adduction	Yes								
Supine float or standing, increase speed and cross									
leg side step.	No No								
Comment									
Knee Extension				-					
Incorporate into hip extension exercise in standing.	Yes								
Walking backwards.	No								
Comment									
Ankle and Foot All movements									
Incorporate into the hip extension exercise in									
standing. Increase speed and use a shorty flipper,	Yes								
metacentric and standing work, push offs from the	No								
wall and stepping onto and over a submerged step.									
Comment									
Adapted PNF patterns in water for the whole									
lower limb.	Yes								
	🗌 No								
Comment									



Trunk	Therapy prescription	Session Date//	Session Date//	Session Date //	Session Date//	Session Date //	Session Date//	Session Date//	Session Date/
Trunk Rotation In supine float with the knees flexed to approximately 90°. Increase the speed of movement/deflate the float around the ankle. Resisted rolling by therapist movement away from the direction of roll, creating therapist drag as transitions between lying and sitting using truncal rotation and side flexion with hips in extension, using metacentric principles. Comment	Yes No								
Trunk Side Flexion Alternatively in supine float holding onto the rail with a float around the ankle increase the speed of movement/deflate the float around the ankle. Tick tock standing with floats in each hand. Comment	Yes								
Adapted PNF patterns in water for the whole trunk.	Yes								



Upper Limbs	Therapy prescription	Session Date							
<i>Shoulder</i> In supine float with the body supported with the relevant flotation (with a float above the wrist), supine float or lying supine on a plinth.	Yes								
Comment Shoulder Rotation In standing with their arm by their side and elbow flexed to 90°. Comment	Yes								
<i>Elbow</i> Flexion and Extension In supine float with the body supported with the relevant flotation (with a float above the wrist) supine float or lying supine on a plinth or sitting with speed. <i>Comment</i>	Yes								
Wrist and Fingers All movements In standing or sitting on a plinth, step or submersed stool, use glove initially for resistance Comment	Yes								
Adapted PNF patterns in water for the whole upper limb.	Yes								



Lower Limbs	Therapy prescription	Session Date							
<i>Hip</i> Flexion and Extension Floating on their side with support from the physiotherapist. Standing with speed. Walking forwards and backwards. Ai Chi gathering and freeing. Free floating with a noodle or body band.	Yes No								
Comment									
<i>Hip</i> Adduction In supine float holding onto the rail with the body supported with the relevant flotation with a float around the ankle with speed. Cross leg stepping up and down incline in pool (if there is one). Standing with speed. Diving stick races (kick water just in front to make them move).	Yes								
Comment Knee Flexion and Extension Floating on their side holding onto the rail or with support from therapist or on plinth with a float around the ankle. The physiotherapist stabilises the hip. Sitting with a body/leg band around legs to keep in neutral position (out of abduction). Cycle legs, motor boats and speed boats, quarter turn prone. Comment	Yes No								
Ankle and Foot All movements Incorporated into the knee movements. Comment	Yes No								



Lower Limbs	Therapy prescription	Session Date							
Adapted PNF patterns in water for the whole lower limb.	Yes								



Trunk	Therapy prescription	Session Date							
Metacentric Effects									
Stand, sitting or supine float – change shape or immersed surface on one side – splash, push ball, lifts one hand out of water, different games that achieve the above in different starting positions.	Yes								
Comment									
Trunk Rotation Sit or lying to sitting, the therapist steps forward or back to facilitate or resist the movement as they reach to the opposite shoulder. The subject faces the wall holding the rail. The knees are then flexed to approximately 90° and the trunk rotated to left and right. Comment	Yes No								
Trunk Side Flexion In supine float holding onto the rail. The physiotherapist stabilises the upper body if necessary. Drag effect through upper limb activity, BC at pelvis, keep hips extended and use snaking, one side only and block pelvis if scoliosis/pelvic obliquity present. Comment	Yes No								
Adapted PNF patterns in water for the whole trunk.	Yes								

Author: Heather Epps 06/10/2014 v1.1 From Hind et al. Aquatic therapy for boys with Duchenne muscular dystrophy (DMD): an external pilot randomised controlled trial, Pilot and Feasibility Studies, 2017. Available at https:// pilotfeasibilitystudies.biomedcentral.com/articles/10.1186/s40814-017-0132-0. This article is distributed under the terms of the Creative Commons Attribution 4.0 International License (http://creativecommons.org/licenses/ by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons Public Domain Dedication waiver (http://creativecommons.org/publicdomain/zero/1.0/) applies to the data made available in this article, unless otherwise stated.