Welsh Physiotherapy

Advisory Group

All Wales Evidence Based Guidance for Access to Hydrotherapy for NHS Patients in Wales

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Contents:

1. Introduction

The therapeutic uses of water have been described from as early as 2,400 BC (Reid Campion, 1997, Adler, 1993; Irion, 1997). It was not, however, until the 1920's that exercise in water, rather than immersion alone, began to be developed (Reid Campion, 1997)

This was the origin of hydrotherapy, also known as aquatic physiotherapy, used by Physiotherapy staff within NHS premises. It is provided for the rehabilitation of a range of conditions including musculoskeletal and neurological conditions. It provides an environment to encourage movement & improve function.

Aquatic physiotherapy is defined by the Aquatic Therapy Association of Chartered Physiotherapists (ATACP 2015) as, "A physiotherapy programme utilising the properties of water, designed by a suitably qualified Physiotherapist. The programme should be specific for an individual to maximise function which can be physical, physiological, or psychosocial. Treatments should be carried out by appropriately trained personnel, ideally in a purpose built, and suitably heated aquatic physiotherapy pool"

2. Benefits of Hydrotherapy / Aquatic Therapy

The physical properties and effects of water enable activities to be more easily performed in a pool than on land due to the supportive nature of water, which is 600-800 times more than air. Once learned these skills can be transferred to land and into functional settings enabling patients to achieve their specific outcomes. (McNeal 1997),

In addition, the increased temperature of a hydrotherapy pool, along with the effects of buoyancy, contributes to the effect on pain by acting on the thermal and mechano receptors thus reducing nociceptive input. Hall et al (2008).

Other benefits may include a reduction of manual handling risk to therapist due to ease of handling in the water, the ability to target multiple problems simultaneously. In some cases this may also help with reintegration into use of local community pools to enable long term self management. Improvements that have been observed, but have no research evidence, include better speech production with work on breath control and improvements to sensation, with patients having better awareness of where their body and limbs are in relation to each other.

The efficacy of aquatic physiotherapy has predominantly been studied in musculoskeletal conditions including osteoarthritis, rheumatoid arthritis, ankylosing spondylitis, fibromyalgia, hip & knee arthroplasty, acute and chronic low back pain and to a lesser extent, upper and lower limb conditions (Geytenbeek, 2008 and

NSCCAHS, 2008). Anecdotal evidence supports its use for lower limb fractures, ligament repair and shoulder dysfunction.
Aquatic therapy's efficacy has also been studied in neurological conditions, but to a lesser extent due to reasons of complexity of research design, but conditions including stoke, acquired brain injury, spinal cord injury, multiple sclerosis, Gillian Barrie Syndrome, post polio syndrome, cerebral palsy in adults, Parkinson's Disease are represented in peer review journals.

Effective clinical practice has preceded proof of efficacy in high quality research trials also including paediatric conditions such as juvenile idiopathic arthritis and cerebral palsy.

2.1 Effects of Hydrotherapy/Aquatic Therapy

Detailed research into the physiological effects of immersion in water has resulted from using the medium of water to recreate the effects of weightlessness (Whitelock, 1994).These effects include:

I. Pain relief and reduction of muscle spasm/tone *(Schenking et al 2009, Mahisashtizad et al 2011, Giaquiento et al 2010a, Giaquiento et al 2010b, Castro-Sanchez e al 2012, Hall et al (1996), Reid Campion, 1997, Hinman et al (2007) Hall et al (2008))*
II. Joint mobility and range *(Bello et al 2010, Mahisashtizad et al 2011, Giaquiento et al 2010a, Giaquiento et al 2010b, Hall et al (1996), Reid Campion, 1997, Hinman et al (2007), Schencking et al 2013)*
III. Muscle strengthening and increased fitness *(Caminetti et al 2011, Reid Campion, 1997, Hall et al (1996) McNeal 1997),)*
IV. Movement control –grading, co-ordination *(Reid Campion, 1997 McNeal 1997)*
V. Reduction in Swelling and improved circulation *(Johansson et al 2004, Reid Campion, 1997 Hall et al (2008))*
VI. Improvement in functional activities *(Giaquiento et al 2010a, Giaquiento et al 2010b, Reid Campion, 1997, Schencking et al 2013)*
VII. Posture, postural control, co-ordination and balance *(Reid Campion, 1997 McNeal 1997)*
VIII. Psychological benefits/ mood / relaxation *(Reid Campion, 1997, Hall et al (1996), Ghaedi et al 2016)*
IX. Graded weight-bearing McNeal 1997), *(Harrison & Bulstrode 1987)*
X. Safe environment to practise tasks *(McNeal 1997),*

3. Indications for Hydrotherapy / Aquatic Therapy

Include the following but are not exhaustive:

- Management of muscle tone problems
- Reduction in range of movement
- Reduced muscle power
- Decreased balance or loss of postural control

- Joint instability
- Pain
- Gait re-education including progression of weight bearing
- Decreased sensation
- Adapted swimming techniques for neurological patients
- Assessment of reaction to change in environment
- Patients who are keen and suitable to progress to self manage through use of a structured water based exercise programme that they can then continue with through the use of pools available in Active Living Centres/Leisure Centres and private establishments.
- Patients who would benefit from a short term hydrotherapy course in order to progress to further land based rehabilitation

4. Contraindications to Hydrotherapy / Aquatic Therapy

All patients should have a comprehensive assessment, part of which will assess the suitability of the patient for this intervention and will include screening for contraindications and precautions.

These are divided into absolute contraindications, relative contraindications and precautions and acted upon accordingly.

4.1 Absolute contraindications

Patients with the following are not suitable to receive hydrotherapy / aquatic therapy:

- Acute systemic illness/pyrexia
- Acute vomiting or diarrhoea
- Medical instability following an acute episode.
- Proven chlorine or bromine allergy
- Resting angina
- Shortness of breath at rest
- Uncontrolled cardiac failure/paroxysmal nocturnal dyspnoea
- Open infected wounds
- Known HIV positive and Hepatitis C patients must not enter the pool during menstruation

4.2 Relative contraindications

Patients with the following conditions require further consideration taking into account the risk/benefit analysis, but if hydrotherapy/aquatic therapy is considered this should be done so cautiously:

- Irradiated skin during course of radiotherapy
- Known aneurysm
- Open wounds
- Poorly controlled epilepsy
- Unstable diabetes
- Thyroid deficiency
- Neutropaenia

- Oxygen dependency
- Weight in excess of the evacuation equipment limit

4.3 Precautions

Patients with the following may receive hydrotherapy/aquatic therapy but additional precautions may be required

- Incontinence of urine/faeces (see condition of use for pool)
- Gross obesity
- Epilepsy
- Haemophilia
- Widespread MRSA
- Hypotension
- Renal failure
- Poor skin integrity/open/surgical wounds
- Pregnancy if water temperature exceeds 35°C
- Invasive tubes in situ
- Risk of aspiration
- Low calorie intake
- Prone to blackouts
- Sickle cell anaemia
- Inefficient thermoregulation
- Tracheostomy
- Fungal infections
- Previous episodes of dysreflexia
- Fear of water
- Boisterous, unpredictable or aggressive behaviour
- Contact lenses and conjunctivitis
- Hearing aids/grommets
- Impaired sensation/vision/hearing

4.4 Considerations

The following additional factors should be taken into consideration during treatment planning and participation

- Shortness of breath with exertion (unfit vs other causes)
- Vertigo/nausea/Blackouts
- Multiple Sclerosis (esp those with high sensitivity to high temperatures)
- Communication problems
- Dermal sensitivity to sanitising agents/psoriasis
- Verruca/Tinea pedia

5. Statutory Requirements

Provision of hydrotherapy / aquatic therapy must be compliant with the following legislation and statutory requirements

- Health and Safety at Work Act, 1974
- Management of Health and Safety at Work Regulations, 1999
- Manual Handling Operations Regulations, 1992
- Provision and Use of Work Equipment Regulations, 1992 (revised 1998)
- Care of Substance Hazardous to Health (COSHH) Regulations, 2002
- Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR), 1995

6. NHS Wales Provision of Hydrotherapy / Aquatic Therapy

The following indicates hydrotherapy/ aquatic therapy provision across NHS Wales.

UHB	Adult Inpatients	Adult Outpatients	Paediatric Inpatients	Paediatric Outpatients
A B UHB	Y	Y	Y	Y
ABMUHB	Y	Y	Y	Y
BCUHB	Y	Y	Y	Y
CVUHB	Y	Y	Y	Y
CTUHB	Y	Y	Y	Y
HDUHB	Y	Y	Y	Y
PTHB	Y	Y	Y	Y

Each Health Board works to its local Operational Policy for the provision of hydrotherapy / aquatic therapy and also referral processes, training and risk management.

(See Appendix A for specific hydrotherapy services provision for each UHB)

7. Hydrotherapy Provision for Non-NHS Organisations utilising NHS Premises

All Health Boards across Wales would benefit from clarification on the governance framework necessary to ensure that they are acting in a way that best manages risk, mitigation, indemnity and exposure. This is necessary as activities undertaken and supervised by non-NHS contracted individuals/companies or where there is any

process to income generate (such as payment to access the pool) may not be covered by Welsh Risk pool.

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Appendix A

Health Board	Number of Pools	Location of Pool	Comments
Aneurin Bevan UHB	3 (2 adult 1 paediatric)	Nevil Hall Hospital Ysbyty Ystrad Fawr Serranu Children's Centre - Paeds	YYF new pool has capacity for 8 patients (recent upgrade has included the installation of overhead tracking to enable access for patient with complex physical disabilities).
ABMUHB	3 + POW uses local leisure centre	Morriston. Singleton - capacity 8 on both sites. Neath Port Talbot- small pool.	POW using leisure facilities – clinical staff feel it is clinically very limiting compared to the hydro pools on other sites. Multiple users other sites, but limitations with access for paeds. Very poor access for learning disability services across whole of South Wales. LD services may access pools in special schools or use Jacuzzi pools in some leisure facilities which have excellent disabled access although do not allow for full treatment programmes to be carried out.
Cardiff and Vale UHB	3	UHW Rookwood Children's Hospital for Wales	Following the reorganisation at Rookwood, plans for a large adult pool at Llandough for Neuro in-patients and out-patients.
Hywel Dda UHB	1	Glan Gwilli Hospital, Carmarthen	Pool has capacity for 8 at Glangwili. Local leisure centre pools utilised in Haverfordwest (sessional costs paid by PT service). Paediatric service use pool in schools in Carms & Pembs. Plans for developments in Llanelli as part of the ARCH project.

CTUHB	1 RGH adult pool 1 RGH paediatric plunge pool 1 RGH paediatric Jacuzzi 1 PCH being decomisssioned with the ground floor refurbishment. Replacement pool at PCH has been agreed by Board	Large 12 person pool in Royal Glam 2 x single use paediatric plunge/Jacuzzi pools RGH 1 x 2 person adult/paeds pool PCH	Larger 5-6 man pool will replace the current 2 man pool in PCH during the Ground Floor essential refurbishment.
BCUHB	1 1 1 1 1	YG Bangor Ysgol Pen Coch, Flint East Y Canol in Ysgol Heulfan in Wrexham Ysgol Gogarth Ysgol Tir Morfa (access Gogarth or Leonard Cheshire)	Rheumatology MSK (incl some paeds; neuro; rheum) MSK (lower limb focus) MSK (upper limb focus) Paediatric – no direct physio led sessions but children can be referred in with a programme to carry out in the pool, this includes OP and special/mainstream children. These are reviewed by the physiotherapy termly. Paediatric – small pre-school group directly led by physio. Other children access the pool with school and follow a physiotherapy programme that is reviewed termly. Paediatric - 2 sessions provided by physiotherapy for Ysgol Gogarth pupils, 3 sessions provided by physiotherapy for children who do not attend the school. These children are referred into the session by other physiotherapists and follow a 6 week block of treatment. Paediatric – no current access to hydrotherapy. School are investigating access to Ysgol Pen Coch in the

			sept 17 school year. If this goes ahead the children will be assessed by physiotherapy and provided with a programme.
POWYS THB	2 + 1	Hydrotherapy pools: Ysgol Cedewain, Newtown Ysgol Penmaes, Brecon Also access RJAH pool in Oswestry. Shropshire. Also access patient private pools and leisure centre pools.	The two hydrotherapy pools are accessed in the special schools but have shared policy/procedures in place. The North Powys pool in line with the school itself is imminent for updating. There is access for preschool babies/children and children in mainstream school, as well as 14+ patients that is locally negotiated. The school also accesses the hydrotherapy pool for school programs.