Clinical Policy Bulletin:  
Pool Therapy, Aquatic Therapy or Hydrotherapy  
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Policy  

I. Aetna considers aquatic therapy (hydrotherapy, pool therapy) medically necessary for musculoskeletal conditions.  

Note: Pool, aquatic, or hydrotherapy is considered to be a physical therapy modality subject to the physical therapy guidelines and any applicable plan benefit limits for physical therapy (see CPB 0325 - Physical Therapy Services).  

Note: Aetna covers only the professional charges of a physical therapist or other recognized, licensed providers (e.g., doctor of medicine, doctor of osteopathy, podiatrist, and physical therapy assistant), for physical therapy modalities administered in a pool, which require direct, one-on-one, patient contact. Charges for aquatic exercise programs, or separate charges for use of a pool, are not covered.  

Note: Aquatic therapy must be carried out for restoring the member's level of function that was lost or reduced by injury or illness. The provider must have direct (one-to-one) patient contact when reporting aquatic therapy. Supervising multiple patients in a pool at one time and billing for each of these patients per 15 minutes of therapy time is inappropriate.  

II. Aetna considers aquatic therapy that is carried out to maintain a level of function (maintenance therapy), where the member is neither improving nor regressing, not medically necessary.  

III. Aetna considers aquatic therapy experimental and investigational for the treatment of asthma and all other non-musculoskeletal indications (e.g., autism, chronic obstructive pulmonary disease, developmental coordination disorder, and sickle cell anemia) because its effectiveness for non-musculoskeletal indications has not been established.
See also CPB 0699 - Dry Hydrotherapy (Hydromassage, Aquamassage, Water Massage).

Background

Aquatic therapy has been shown to provide relief of symptoms from a variety of arthritides, traumatic injuries, and other musculoskeletal conditions. This procedure uses the therapeutic properties of water (e.g., buoyancy, resistance). Aquatic therapy may necessary for a loss or restriction of joint motion, strength, mobility, or function which has resulted from a specific disease or injury. The medical record should show objective loss of joint motion, strength, or mobility (e.g., degrees of motion, strength grades, levels of assistance). Standard treatment duration is 3 to 4 times per week for 2 to 4 weeks. It is not necessary to have more than one form of hydrotherapy during the same visit (NHIC, 2002). Other forms of exercise therapy may be necessary in addition to aquatic therapy when the member cannot perform land-based exercises effectively to treat his/her condition without first undergoing the aquatic therapy, or when aquatic therapy facilitates progress to land-based exercise or increased function.

Harmer and colleagues (2009) compared outcomes between land-based and water-based exercise programs delivered in the early subacute phase up to 6 months after total knee replacement (TKR). Two weeks after surgery (baseline), 102 patients were randomized to participate in either land-based (n = 49) or water-based (n = 53) exercise classes. Treatment parameters were guided by current clinical practice protocols. Thus, each study arm involved 1-hr sessions twice-weekly for 6 weeks, with patient-determined exercise intensity. Session attendance was recorded. Outcomes were measured at baseline and at 8 and 26 weeks post-surgery. Outcomes included distance on the 6-min walk test, stair climbing power (SCP), the Western Ontario and McMaster Universities (WOMAC) Osteoarthritis Index (n = 85 English-proficient patients), visual analog scale for joint pain, passive knee range of motion, and knee edema (circumference). Planned orthogonal contrasts, with an intent-to-treat approach, were used to analyze the effects of time and time-group interactions. Compliance in both groups was excellent with 81% attending 8 or more sessions. Loss to follow-up was 5%. Significant improvements were observed across time in all outcomes at 8 weeks, with further improvements evident in all variables (except WOMAC pain) at 26 weeks. Minor between-group differences were evident for 4 outcomes (SCP, WOMAC stiffness, WOMAC function, and edema) but these appear clinically insignificant. The authors concluded that a short-term, clinically pragmatic program of either land-based or water-based rehabilitation delivered in the early phase after TKR was associated with comparable outcomes at the end of the program and up to 26 weeks post-surgery.

In a controlled trial with blinded 6-month follow-up, Rahmann and colleagues (2009) assessed the effect of inpatient aquatic physiotherapy in addition to usual ward physiotherapy on the recovery of strength, function, and gait speed after total hip or knee replacement surgery. Participants (n = 65) were individuals undergoing primary hip or knee arthroplasty (average age of 69.6 +/- 8.2 yrs; 30 men). Subjects were randomly assigned to receive supplementary inpatient
physiotherapy, beginning on day 4: aquatic physiotherapy, non-specific water exercise, or additional ward physiotherapy. Main outcome measures were strength, gait speed, and functional ability at day 14. At day 14, hip abductor strength was significantly greater after aquatic physiotherapy intervention than additional ward treatment \( (p = 0.001) \) or water exercise \( (p = 0.011) \). No other outcome measures were significantly different at any time point in the trial, but relative differences favored the aquatic physiotherapy intervention at day 14. No adverse events occurred with early aquatic intervention. The authors concluded that a specific inpatient aquatic physiotherapy program has a positive effect on early recovery of hip strength after joint replacement surgery. Moreover, they stated that further studies are needed to confirm these findings.

Hillier and colleagues (2010) stated that aquatic therapy is an intervention for children with developmental coordination disorder (DCD) that has not been investigated formally. In a pilot randomized controlled trial, these researchers investigated the feasibility and preliminary effectiveness of an aquatic therapy program to improve motor skills of children with DCD. A total of 13 children (mean age of 7 years 1 month; 10 males) with DCD were randomly allocated to receive either 6 sessions of aquatic therapy (once-weekly session of 30 mins for 6 to 8 weeks) or to a wait-list (control group). The intervention and measures were demonstrated to be feasible, but barriers, such as limited appointment times and accessibility, were encountered. Analysis of co-variance indicated that at post-test, mean scores on the Movement Assessment Battery were higher for children who received aquatic therapy compared to those on the wait-list \( (p = 0.057) \). Similar trends were noted on the physical competence portion of the Pictorial Scale of Perceived Competence and Social Acceptance \( (p = 0.058) \). However, these differences were not significant. These preliminary findings need to be validated by well-designed studies.

Tinti et al (2010) noted that the process of hemoglobin polymerization and the consequent sickling of red blood cells that occurs in patients with sickle cell disease shortens the half-life of red blood cells. It causes vaso-occlusive complications as well as pain and pulmonary and cardiovascular dysfunction. In a case study, these researchers evaluated an aquatic rehabilitation program used for patients with sickle cell anemia and examined the possible benefits that exercise in warm water has for the circulatory system for relieving pain as well as for increasing lung capacity. The patient was a 32-year-old female. The parameters that were used in this study included respiratory muscle strength (which was calculated by measuring maximum inspiratory pressures and maximum expiratory pressures), the McGill and Wisconsin pain questionnaires (in order to evaluate the patients' characterizations and descriptions of their pain), and the SF-36 Health Survey. The treatment included warm water exercises, stretching, aerobic exercise, and relaxation, during 2 sessions of 45 mins per week for 5 weeks. The patient experienced a significant decrease in pain, a significant increase in the strength of respiratory muscles, and improved quality of life. The authors concluded aquatic rehabilitation can be used to improve the clinical condition of sickle cell anemia patients, and they stated that more research on this new treatment regime, in comparison with other types of therapies, should be encouraged.
Fibromyalgia (FM) is a debilitating condition characterized by the presence of widespread musculoskeletal pain. Moreover, there is inconsistent evidence regarding the effectiveness of various therapies developed so far, making FM a chronic disease that is difficult to treat.

The University of Texas, School of Nursing, Family Nurse Practitioner Program’s clinical guideline on “Management of fibromyalgia syndrome in adults” (2009) did not mention the use of aquatic therapy/hydrotherapy/pool therapy as a therapeutic option.

Thomas and Blotman (2010) examined the current evidence to support guidelines for aerobic exercise (AE) and FM in practice, and outlined specific research needs in these areas. Data sources consisted of a PubMed search, 2007 Cochrane Data Base Systematic review, 2008 Ottawa panel evidence-based clinical practice guidelines, as well as additional references found from the initial search. Study selection included randomized clinical trials that compared an aerobic-only exercise intervention (land- or pool-based) with an untreated control, a non-exercise intervention or other exercise programs in patients responding to the 1990 American College of Rheumatology criteria for FM. The following outcome data were obtained: pain, tender points, perceived improvement in FM symptoms such as the Fibromyalgia Impact Questionnaire (FIQ) total score, physical function, depression (e.g., Beck Depression Inventory, FIQ subscale for depression), fatigue and sleep were extracted from 19 clinical trials that considered the effects of aerobic-only exercise in FM patients. Data synthesis showed that there is moderate evidence of important benefit of aerobic-only exercise in FM on physical function and possibly on tender points and pain. It appears to be sufficient evidence to support the practice of AE as a part of the multi-disciplinary management of FM. However, the authors stated that future studies must be more adequately sized, homogeneously assessed, and monitored for adherence, to draw definitive conclusions.

Winkelmann et al (2012) noted that the scheduled update to the German S3 guidelines on fibromyalgia syndrome (FMS) by the Association of the Scientific Medical Societies (“Arbeitsgemeinschaft der Wissenschaftlichen Medizinischen Fachgesellschaften”, AWMF; registration number 041/004) was planned starting in March 2011. The development of the guidelines was coordinated by the German Interdisciplinary Association for Pain Therapy (“Deutsche Interdisziplinären Vereinigung für Schmerztherapie”, DIVS), 9 scientific medical societies and 2 patient self-help organizations. Eight working groups with a total of 50 members were evenly balanced in terms of gender, medical field, potential conflicts of interest and hierarchical position in the medical and scientific fields. Literature searches were performed using the MedLine, PsycInfo, Scopus and Cochrane Library databases (until December 2010). The grading of the strength of the evidence followed the scheme of the Oxford Center for Evidence-Based Medicine. The formulation and grading of recommendations was accomplished using a multi-step, formal consensus process. The guidelines were reviewed by the boards of the participating scientific medical societies. The authors concluded that low-to-moderate intensity aerobic exercise and strength training are strongly recommended. Chiropractic, laser therapy, magnetic field therapy, massage
therapy, as well as transcranial current stimulation are not recommended. Aquatic therapy/hydrotherapy/pool therapy was not mentioned as a therapeutic option.

Lima et al (2013) evaluated the effectiveness of aquatic physical therapy in the treatment of FM. The search strategy was undertaken using the following databases, from 1950 to December 2012: MEDLINE, EMBASE, CINAHL, LILACS, SCIELO, WEB OF SCIENCE, SCOPUS, SPORTDiscus, Cochrane Library Controlled Trials Register, Cochrane Disease Group Trials Register, PEDro and DARE. The studies were separated into groups: Group I -- aquatic physical therapy × no treatment, Group II -- aquatic physical therapy × land-based exercises and Group III -- aquatic physical therapy × other treatments. A total of 72 abstracts were found, 27 of which met the inclusion criteria. For the functional ability (FIQ), 3 studies were considered with a treatment time of more than 20 weeks and a mean difference (MD) of -1.35 [-2.04; -0.67], p = 0.0001 was found in favor of the aquatic physical therapy group versus no treatment. The same results were identified for stiffness and the 6-min walk test where 2 studies were pooled with an MD of -1.58 [-2.58; -0.58], p = 0.002 and 43.5 (meters) [3.8; 83.2], p = 0.03, respectively. The authors concluded that 3 meta-analyses showed statistically significant results in favor of the aquatic physical therapy (FIQ, stiffness and the 6-min walk test) during a period of longer than 20 weeks. Moreover, they stated that due to the low methodological rigor, the results were insufficient to demonstrate statistical and clinical differences in most of the outcomes.

In a Cochrane review, McNamara et al (2013) evaluated the effects of water-based exercise training in people with chronic obstructive pulmonary disease (COPD). A search of the Cochrane Airways Group Specialised Register of trials, which is derived from systematic searches of bibliographic databases, including the Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE, EMBASE, CINAHL, AMED and PsycINFO, was conducted (from inception to August 2013). Hand-searching was done to identify further qualifying studies from reference lists of relevant studies. Review authors included randomized or quasi-randomized controlled trials in which water-based exercise training of at least 4 weeks' duration was compared with no exercise training or any other form of exercise training in people with COPD. Swimming was excluded. These researchers used standard methodological procedures expected by The Cochrane Collaboration. A total of 5 studies were included with a total of 176 participants (71 people participated in water-based exercise training and 54 in land-based exercise training; 51 completed no exercise training). All studies compared supervised water-based exercise training versus land-based exercise training and/or no exercise training in people with COPD (with average forced expiratory volume in one second (FEV1) %predicted ranging from 39 % to 62 %). Sample sizes ranged from 11 to 53 participants. The exercise training programs lasted from 4 to 12 weeks, and the mean age of participants ranged from 57 to 73 years. A moderate risk of bias was due to lack of reporting of randomization, allocation and blinding procedures in some studies, as well as small sample sizes. Compared with no exercise, water-based exercise training improved the 6-minute walk distance (mean difference (MD) 62 meters; 95 % confidence interval (CI): 44 to 80 meters; 3 studies; 99 participants; moderate quality evidence), the incremental shuttle walk distance (MD 50 meters; 95 % CI: 20 to 80 meters; 1 study; 30 participants; high quality evidence) and the endurance shuttle walk
distance (MD 371 meters; 95% CI: 121 to 621 meters; 1 study; 30 participants; high quality evidence). Quality of life was also improved after water-based exercise training compared with no exercise (standardized mean difference (SMD) -0.97, 95% CI: -0.37 to -1.57; 2 studies; 49 participants; low quality evidence). Compared with land-based exercise training, water-based exercise training did not significantly change the 6-minute walk distance (MD 11 meters; 95% CI: -11 to 33 meters; 3 studies; 62 participants; moderate quality evidence) or the incremental shuttle walk distance (MD 9 meters; 95% CI: -15 to 34 meters; 2 studies; 59 participants; low quality evidence). However, the endurance shuttle walk distance improved following water-based exercise training compared with land-based exercise training (MD 313 meters; 95% CI: 232 to 394 meters; 2 studies; 59 participants; moderate quality evidence). No significant differences were found between water-based exercise training and land-based exercise training for quality of life, as measured by the St George's Respiratory Questionnaire or by 3 of 4 domains of the Chronic Respiratory Disease Questionnaire (CRDQ); however, the fatigue domain of the CRDQ showed a statistically significant difference in favor of water-based exercise (MD -3.00; 95% CI: -5.26 to -0.74; 1 study; 30 participants).

Only 1 study reported long-term outcomes after water-based exercise training for quality of life and body composition, and no significant change was observed between baseline results and 6-month follow-up results. One minor adverse event was reported for water-based exercise training (based on reporting from 2 studies; 20 participants). Impact of disease severity could not be examined because data were insufficient. The authors concluded that there is limited quality evidence that water-based exercise training is safe and improves exercise capacity and quality of life in people with COPD immediately after training. There is limited quality evidence that water-based exercise training offers advantages over land-based exercise training in improving endurance exercise capacity, but these investigators remained uncertain as to whether it leads to better quality of life. They noted that little evidence exists examining the long-term effect of water-based exercise training.

Mortimer et al (2014) examined the effectiveness of hydrotherapy on social interactions and behaviors in the treatment of children with autism spectrum disorders (ASDs). A systematic search of Cochrane, CINAHL, PsycINFO, Embase, MEDLINE®, and Academic Search Premier was conducted. Studies of participants, aged 3 to 18 years, with ASDs at a high-functioning level were included if they utilized outcome measures assessing social interactions and behaviors through questionnaire or observation. A critical appraisal, using the McMaster Critical Review Form for Quantitative Studies, was performed to assess methodological quality. A total of 4 studies of varying research design and quality met the inclusion criteria. The participants in these studies were aged between 3 to 12 years of age. The duration of the intervention ranged from 10 to 14 weeks, and each study used varied measures of outcome. Overall, all the studies showed some improvements in social interactions or behaviors following a Halliwick-based hydrotherapy intervention. The authors concluded that few studies have investigated the effect of hydrotherapy on the social interactions and behaviors of children with ASDs. While there is an increasing body of evidence for hydrotherapy for children with ASDs, this is constrained by small sample size, lack of comparator, crude sampling methods, and the lack of standardized outcome
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They stated that hydrotherapy shows potential as a treatment method for social interactions and behaviors in children with ASDs.

CPT Codes / HCPCS / ICD-9 Codes

CPT codes covered if selection criteria are met:

- 97036 Application of a modality to one or more areas; Hubbard tank, each 15 minutes
- 97113 Therapeutic procedure, one or more areas, each 15 minutes; aquatic therapy with therapeutic exercises

ICD-9 codes covered if selection criteria are met:

- 710.0 - 739.9 Diseases of the musculoskeletal system and connective tissue
- 800.00 - 959.9 Injury
- V15.5 Personal history of injury
- V57.1 Other physical therapy

ICD-9 codes not covered for indications listed in the CPB:

- 282.60 - 282.69 Sickle cell disease, unspecified [sickle cell anemia]
- 315.4 Developmental coordination disorder
- 315.5 Mixed development disorder
- 493.00 - 493.92 Asthma

The above policy is based on the following references:


37. Batterham SI, Heywood S, Keating JL. Systematic review and meta-analysis comparing land and aquatic exercise for people with hip or knee
arthritis on function, mobility and other health outcomes. BMC Musculoskeletal Disorders. 2011;12:123.


42. University of Texas, School of Nursing, Family Nurse Practitioner Program. Management of fibromyalgia syndrome in adults. Austin, TX: University of Texas, School of Nursing; May 2009.


