FirstChoice VIP CARE
by Select Health of South Carolina

Aquatic therapy

Clinical Policy ID: CCP.1127

Recent review date: 7/2024

Next review date: 11/2025

Policy contains: Aquatic therapy; hydrotherapy; musculoskeletal conditions; physical therapy.

FirstChoice VIP Care has developed clinical policies to assist with making coverage determinations. FirstChoice VIP Care's clinical policies are based on guidelines from established industry sources, such as the Centers for Medicare & Medicaid Services (CMS), state regulatory agencies, the American Medical Association (AMA), medical specialty professional societies, and peer-reviewed professional literature. These clinical policies along with other sources, such as plan benefits and state and federal laws and regulatory requirements, including any state- or plan-specific definition of "medically necessary," and the specific facts of the particular situation are considered, on a case by case basis, by FirstChoice VIP Care when making coverage determinations. In the event of conflict between this clinical policy and plan benefits and/or state or federal laws and/or regulatory requirements, the plan benefits and/or state and federal laws and/or regulatory requirements shall control. FirstChoice VIP Care's clinical policies are for informational purposes only and not intended as medical advice or to direct treatment. Physicians and other health care providers are solely responsible for the treatment decisions for their patients. FirstChoice VIP Care's clinical policies are reflective of evidence-based medicine at the time of review. As medical science evolves, FirstChoice VIP Care will update its clinical policies as necessary. FirstChoice VIP Care's clinical policies are not guarantees of payment.

Coverage policy

Aquatic therapy is clinically proven and, therefore, may be medically necessary when **all** of the following criteria are met (Cavallo, 2017; Jette, 2020; Osborne, 2022):

- Treatment addresses loss or restriction of joint motion, strength, mobility, balance, or function due to pain, injury, or illness.
- Treatment addresses loss of activities of daily living, mobility, range of motion, strength, balance, coordination, posture, or effect on function.
- Treatment is for conditions such as (not an exhaustive list) pain, joint stiffness, or muscle spasms from rheumatoid arthritis; a removed cast or recent surgery requiring limb mobilization; paraparesis or hemiparesis; recent amputation; paralytic condition; limb mobilization after head trauma; inability to tolerate exercise for rehabilitation under gravity-based weight bearing; and fibromyalgia.
- Pain rating, location of pain, and effect of pain on function are documented (if used for pain).
- The member is unable to tolerate land-based exercises for rehabilitation.
- Treatment is used to facilitate progression to land-based therapy.
- The skilled nature of the qualified professional's/auxiliary personnel's intervention during the therapeutic exercise is documented.

Home-based aquatic therapy is clinically proven and, therefore, may be medically necessary if continued aquatic exercise is needed, as documented in the member's medical record.

Limitations

All other uses of aquatic therapy are investigational/not clinically proven and, therefore, not medically necessary, including:

- To promote overall fitness, flexibility, improved endurance, aerobic conditioning, or for weight reduction.
- To be performed safely at home or in the community without trained personnel in attendance.
- To be performed simultaneously with other forms of hydrotherapy.
- To use mineral baths for rejuvenation.

Alternative covered services

Land-based physical therapy or occupational therapy.

Background

Terms such aqua(tic) therapy, hydrotherapy, thalassotherapy (sea water therapy), balneotherapy (mineral water therapy), and spa therapy describe therapy in a water-based environment with a lengthy history of use in health care and wellness.

Aquatic therapy refers to physical therapy that takes place in a pool or other aquatic environment under the supervision of a trained healthcare professional. The therapy may encompass any therapeutic exercise, therapeutic activity, neuromuscular re-education, or gait activity. Treatment can improve joint motion, strength, mobility, and balance/function due to pain, injury, or illness by using the buoyancy and resistance properties of water (American Physical Therapy Association, 2024).

Aquatic therapy is generally administered by physical therapists or occupational therapists. The American Physical Therapy Association's Academy of Aquatic Physical Therapy offers training in aquatic therapy, and specifies that this treatment can be beneficial for patients with pain, osteoarthritis, multiple sclerosis, and other conditions. The therapist does not need to be in the water except when needed to ensure patient safety (American Physical Therapy Association, 2024). Continued aquatic exercise in a home program can be conducted through community resources.

Findings

Guidelines

The Academy of Aquatic Physical Therapy (undated) has documented a process for developing evidenced based physical therapy clinical practice guidelines. Guidelines from other professional medical organizations on use of aquatic therapy are not published as stand-alone entities. Instead, indications for aquatic therapy are integrated into policies for specific conditions.

The Ottawa Panel Evidence-Based Clinical Practice Guidelines recommends aquatic therapy as structured physical activity in the management of juvenile idiopathic arthritis. They based their recommendation on one high-quality randomized controlled trial (n = 54) comparing the effects of an aquatic exercise program (performed once a week for an hour over a 20-week period) to those of a control group receiving usual care and medical treatment. Aquatic therapy demonstrated a clinically important and statistically significant reduction in the number of swollen and tender joints at the end of the six month treatment (Cavallo, 2017).

An American Physical Therapy Association clinical practice guideline on total knee arthroplasty recommends progressive aquatic resistance training based on the results of a randomized controlled trial (n = 55) showing improved and sustained lower limb mobility outcomes after knee surgery. Individualized land-based and aquatic

options should match the patient's goals and abilities, and documentation should capture physiological response, objective baseline data, the patient's goals, plan of care, and appropriate outcomes (Jette, 2020).

The American Physical Therapy Association recommends considering aquatic balance training over land-based therapy to improve fear of falling and quality of life in patients with Parkinson's disease based on limited high quality evidence from two small randomized controlled trials. The addition of aquatic therapy to the integrated care team in an intensive inpatient rehabilitation environment was not associated with any significant benefits in motor disease severity (Osborne, 2022).

Evidence reviews

A substantial number of large-scale systematic reviews and meta-analyses on efficacy of aquatic therapy appear in the medical literature. Below is a sample of the most recent studies, including treatment for a variety of conditions.

Stroke rehabilitation

A systematic review with meta-analysis of 17 randomized controlled trials (n = 629) of low-to-moderate quality examined lower limb function after stroke. Results were expressed as standardized mean difference (95% confidence interval). Compared to land-based therapy, there was greater but variable improvement in balance (0.72, 0.50 to 0.94), walking speed (-0.45, -0.71 to -0.19), and mobility (-0.43, -0.7 to -0.17) with aquatic therapy (Ghayour Najafabadi, 2022).

An analysis of 28 articles (n = 961) on stroke rehabilitation reveals aquatic therapy is effective in supporting walking, balance, emotional status/health-related quality of life, spasticity, and physiological indicators versus no intervention. Aquatic therapy is superior for balance, walking, muscular strength, proprioception, health-related quality of life, physiological indicators, and cardiorespiratory fitness versus land intervention. Land and water exercise had similar effects in activities of daily living (Veldema, 2021).

A review of 11 studies (n = 455) focused on treatment after stroke. Aquatic therapy improved balance (P = .004) and gait speed (P = .004) when delivered alone, and improved cadence (P = .02) when delivered as an adjunct to land-based therapy (Nayak, 2020).

Fall prevention

A key component to quality of life in the elderly is balance and fall prevention. It is necessary for activities of daily living as well as longevity. Results of several systematic reviews and meta-analyses, which included studies of low quality and overlapping study populations, found aquatic therapy was as least as effective as land-based rehabilitation on improving balance in participants older than 50 years of age regardless of a history of falls or underlying comorbidities. These results suggest aquatic therapy may be effective in preventing falls in the elderly (Guillamon, 2019; Kim, 2020; Shariat, 2022).

Similarly, another systematic review (11 studies) and meta-analysis (six studies) of randomized or quasi-randomized controlled trials examined the outcomes of 395 community-dwelling older adults age 60 years or older with vestibular dysfunction but with no underlying physical problems, cognitive or neurological impairments. Aquatic-based physical therapy was more effective than land-based physical therapy or no therapy in improving balance, gait, quality of life, and reducing fear of falling. Aquatic physical therapy increased functional reach by 6.36 centimeters compared to land-based physical therapy exercises using the Functional Reach test (P < .00001). The authors recommend including aquatic physical therapy in physical therapy regimens and progressing to land-based physical therapy when the individual exhibits greater body stability. However, the results should be confirmed in higher quality studies to permit analysis of the benefits and adverse effects of the interventions (Melo, 2023).

Multiple sclerosis

A review of 11 randomized controlled trials found aquatic therapy produced various significant improvements in people with multiple sclerosis. Indicators include walking, fatigue, and quality of life. Authors conclude that aquatic therapy may be a valid alternative to conventional treatment and a valid rehabilitation approach for persons with multiple sclerosis (Amedoro, 2020).

A systematic review of 10 articles, five of which were randomized controlled trials, found aquatic treatment improves quality of life of people with multiple sclerosis. Evidence was rated very good in two studies, good in four, fair in two, and weak in two (Corvillo, 2017).

Parkinson's disease

In a systematic review and meta-analysis of 12 randomized controlled trials, low-quality evidence supported the superiority of aquatic exercise programs to various controls in improving postural balance (standardized mean difference = 0.47, P = .02), but not for lower limb muscle strength (P = .14), depressive symptoms (P = .79), mobility (P = 0.32), or quality of life (P = .05). The average duration, frequency, and total time implemented were 50 minutes, three times a week, for seven weeks, respectively (Braz de Oliveira, 2024).

An analysis of 14 studies (n = 472) of motor and non-motor symptoms of early-stage Parkinson's disease found similar gains for aquatic therapy and land exercises for gait, balance, motor disability, and quality of life. Aquatic therapy was superior (P = .01) for mobility. Therapy duration was low, ranging from three to 11 weeks (Carroll, 2020).

An assessment of 15 randomized controlled trials (n = 435) showed that compared with land-based exercise, water-based exercise improved balance, mobility, and quality of life. Authors observed no difference between groups in functional performance. Land-based exercise resulted in greater improvement in fear of falling (Neto, 2020).

Liu (2023) examined the long-term effects of aquatic therapy on balance function in patients with Parkinson's disease. Five high-quality randomized controlled trials (n = 135). Intervention protocols varied, and the follow-up periods ranged from 17 days to six months. Compared to controls, aquatic therapy exhibited a significantly greater positive maintenance effect on balance function (P = .005) compared to land-based therapies. There were no significant long-term effects of aquatic therapy on motor function, mobility, and quality of life.

Pain — ankylosing spondylitis

A review of five studies (n = 383) of patients with ankylosing spondylitis demonstrated that water therapy significantly improved disease activity and pain, but did not improve spinal mobility or functional capacity. Authors conclude water therapy is an alternative for patients with ankylosing spondylitis when land-based therapy is not well tolerated (Liang, 2021).

A meta-analysis of five trials (n = 1,393) concluded aquatic therapy reduced pain scores (P = .03) and disease activity scores (P = .02) compared with controls (Zhao, 2020).

Pain — osteoarthritis

A systematic review of nine moderate-quality studies (n = 604) found aquatic exercise was effective in treating pain, disease activity, and physical function in participants with inflammatory arthritis, including rheumatoid arthritis and ankylosing spondylitis. However, the superiority of aquatic therapy to other forms of therapy could not be determined (Medrado, 2022).

A meta-analysis of six randomized controlled trials (n = 432) of postmenopausal women with knee osteoarthritis showed no significant difference between patients with aquatic exercise and controls for improving pain, stiffness, function outcomes, sport, activities of daily living, and quality of life (Chen, 2019).

An analysis of eight trials (n = 579) of patients with knee osteoarthritis treated with aquatic exercise or land-based exercise showed no significant difference between groups for pain relief, physical function, and improvement in the quality of life, both short- and long-term. Adherence and satisfaction level was higher for aquatic exercise. Aquatic therapy improved activities of daily living (*P* = .005) and sports and recreational activities (*P* = .01) compared to no intervention (Dong, 2018).

A meta-analysis of six randomized controlled trials found aquatic therapy (total n = 183) was associated with improved pain relief (*P* = .260) and functional status (measured by the Western Ontario and McMaster Universities Arthritis index; *P* = .037) up to the eight week follow-up compared to land-based physical therapy (total n = 168). There was no significant difference in adverse events between the two groups. In three trials, aquatic therapy was associated with improved quality of life (measured by the short form 12 health survey, *P* = .032). The average age of participants ranged from 57 to 77 years old. The overall quality of the evidence was low (Lei, 2024).

Breast cancer

Aquatic therapy has been proposed for treating the symptoms and sequelae of breast cancer treatment. The included studies in the following systematic reviews were well-designed with a low risk of bias. There was a high level of adherence to therapy and lack of reported adverse effects, suggesting aquatic therapy is safe and well-tolerated.

A systematic review and meta-analysis of five randomized controlled trials (n = 356) found aquatic physical therapy significantly reduced fatigue but not waist circumference compared to usual care (*P* < .01 and *P* = .4, respectively) and significantly improved quality of life compared to land-based therapy (*P* = .01). In four of the five studies, aquatic therapy was administered for one hour three times per week for eight weeks (Wang, 2022).

Another systematic review examined 10 randomized controlled trials (n = 606). Aquatic therapy was effective in reducing fatigue (two studies), reducing pain (three studies), and improving quality of life (four studies) after breast cancer treatment. In three of five studies, there was significant but short-term improvement in lymphedema (Muñoz-Gómez, 2022).

Chronic low back pain

An analysis of 13 randomized controlled trials (n = 597) with a high risk of bias found that, compared with no aquatic physical therapy, aquatic physical therapy improved pain intensity (*P* < .00001), improved quality of life (physical components of 36-Item Short Form Health Survey or Short-Form 12, *P* < .00001; mental components of 36-Item Short Form Health Survey or Short-Form 12, *P* = .02), and reduced disability (*P* = .0008 and *P* = .05 on different measures), but did not improve pain at rest (*P* = .16). More high-quality randomized controlled trials are needed to verify the effectiveness and safety of aquatic physical therapy and determine the optimal candidate, physical therapy modality, and administration for chronic low back pain (Ma, 2022).

Heidari (2023) examined the efficacy of aquatic therapy for treating low back pain from 14 randomized controlled trials (n = 484 total participants). Aquatic exercise programs significantly reduced pain (*P* < .00001), improved disability (*P* < .00001), and improved quality of life in both the physical component score (*P* < .00001) and the mental component score (*P* < .0001) compared to land-based therapy or no therapy. There was significant high heterogeneity likely caused by diverse exercise protocols among studies.

Fibromyalgia

A systematic review and meta-analysis of 14 randomized controlled trials (n = 762) found aquatic physical therapy had statistically significant superior benefits on clinical symptoms, physical function, and quality of life compared with other exercises or no exercise in participants with fibromyalgia (Ma, 2024). In an analysis of 22

randomized controlled trials, aquatic therapy had a nonsignificant, positive effect on sleep quality as measured by the Pittsburgh sleep quality index at short- and mid-term follow-up (*P* = .17) (Bravo, 2024).

Spinal cord injury

Limited evidence from three randomized controlled trials of variable quality (n = 71 total participants) suggests aquatic exercise can facilitate movement, physical and cardiovascular exercise, resistance training, and body relaxation in participants with varying injury severity. Larger trials comparing aquatic therapy to other types of physiotherapy, such as land-based exercise, robotic therapy, or as an addition or support to standard therapy are warranted (Palladino, 2023).

Children with neurodevelopmental disorder

A systematic review of 16 trials (248 total children) and a meta-analysis of four trials (n = 70 children with autism spectrum disorder) compared the efficacy of aquatic therapy to land-based exercises on motor skills, social skills, and executive function in children with neurodevelopmental disorders. Low-quality evidence suggests aquatic therapy significantly improved some domains such as mental health, introduction to water environment, rotations, balance, control, and independent movement in water. Aquatic therapy may serve as an adjunct to the occupational therapy for improving comfort in water and other psychomotor skills in this population (Shariat, 2024).

In 2023, we added eight systematic reviews/meta-analyses to the policy for several indications, including the following four new indications (breast cancer, chronic low back pain, fibromyalgia, and spinal cord injury) and three clinical practice guidelines. No policy changes are warranted.

In 2024, we added several new systematic reviews/meta-analyses to the policy. The results confirm previous policy findings. No policy changes are warranted.

References

On May 29, 2024, we searched PubMed and the databases of the Cochrane Library, the U.K. National Health Services Centre for Reviews and Dissemination, the Agency for Healthcare Research and Quality, and the Centers for Medicare & Medicaid Services. Search terms were “hydrotherapy,” “balneology,” as well as free text terms “hydrotherapy rehabilitation,” “aquatic physical therapy,” “aquatic rehabilitation,” “ai chi,” and “aqua* treatment.” We included the best available evidence according to established evidence hierarchies (typically systematic reviews, meta-analyses, and full economic analyses, where available) and professional guidelines based on such evidence and clinical expertise.

Amedoro A, Berardi A, Conte A, et al. The effect of aquatic physical therapy on patients with multiple sclerosis: A systematic review and meta-analysis. *Mult Scler Relat Disord*. 2020;41:102022. Doi: 10.1016/j.msard.2020.102022.

American Physical Therapy Association, Academy of Aquatic Physical Therapy. Fact sheets and resources. https://aquaticpt.org/fact_sheets. Published 2024.

Bravo C, Rubí-Carnacea F, Colomo I, Sánchez-de-la-Torre M, Fernández-Lago H, Climent-Sanz C. Aquatic therapy improves self-reported sleep quality in fibromyalgia patients: A systematic review and meta-analysis. *Sleep Breath*. 2024;28(2):565-583. Doi: 10.1007/s11325-023-02933-x.

Braz de Oliveira MP, Rigo Lima C, da Silva SLA, Firmino Vaz Figueira EC, David Truax B, Smaili SM. Effect of aquatic exercise programs according to the International Classification of Functionality, Disability and Health domains in individuals with Parkinson's disease: A systematic review and meta-analysis with grade quality assessment. *Disabil Rehabil*. 2024:1-14. Doi: 10.1080/09638288.2022.2164800.

Carroll LM, Morris ME, O'Connor WT, Clifford AM. Is aquatic therapy optimally prescribed for Parkinson's Disease? A systematic review and meta-analysis. *J Parkinsons Dis*. 2020;10(1):59-76. Doi: 10.3233/JPD-191784.

Cavallo S, Brosseau L, Toupin-April K, et al. Ottawa Panel Evidence-Based Clinical Practice Guidelines for structured physical activity in the management of juvenile idiopathic arthritis. *Arch Phys Med Rehabil*. 2017;98(5):1018-1041. Doi: 10.1016/j.apmr.2016.09.135.

Chen S-C, Ding S-B, Xie B-C, Tian H, Lu C-Y. Are aquatic exercises efficacious in postmenopausal women with knee osteoarthritis? A meta-analysis of randomized controlled trials. *J Sports Med Phys Fitness*. 2019;59(10):1763-1770. Doi: 10.23736/S0022-4707.19.09596-3.

Corvillo I, Varela E, Armijo F, Alvarez-Badillo A, Armijo O, Maraver F. Efficacy of aquatic therapy for multiple sclerosis: A systematic review. *Eur J Phys Rehabil Med.* 2017;53(6):944-952. Doi: 10.23736/S1973-9087.17.04570-1.

Dong R, Wu Y, Xu S, et al. Is aquatic exercise more effective than land-based exercise for knee osteoarthritis? *Medicine.* 2018;97(52):e13823. Doi: 10.1097/MD.0000000000013823.

Ghayour Najafabadi M, Shariat A, Dommerholt J, et al. Aquatic therapy for improving lower limbs function in post-stroke survivors: A systematic review with meta-analysis. *Top Stroke Rehabil*. 2022;29(7):473-489. Doi: 10.1080/10749357.2021.1929011.

Guillamon E M-C, Burgess L, Immins T, Andreo A M-A, Wainwright TW. Does aquatic exercise improve commonly reported predisposing risk factors to falls within the elderly? A systematic review. *BMC Geriatr*. 2019;19(1):52. Doi: 10.1186/s12877-019-1065-7.

Heidari F, Mohammad Rahimi N, Aminzadeh R. Aquatic exercise impact on pain intensity, disability and quality of life in adults with low back pain: A systematic review and meta-analysis. *Biol Res Nurs*. 2023;25(4):527-541. Doi: 10.1177/10998004231162327.

Jette DU, Hunter SJ, Burkett L, et al. Physical therapist management of total knee arthroplasty. *Phys Ther*. 2020;100(9):1603-1631. Doi: 10.1093/ptj/pzaa099.

Kim Y, Vakula MN, Waller B, Bressel E. A systematic review and meta-analysis comparing the effect of aquatic and land exercise on dynamic balance in older adults. *BMC Geriatr*. 2020;20(1):302. Doi: 10.1186/s12877-020-01702-9.

Lei C, Chen H, Zheng S, et al. The efficacy and safety of hydrotherapy in patients with knee osteoarthritis: A meta-analysis of randomized controlled trials. *Int J Surg*. 2024;110(3):1711-1722. Doi: 10.1097/js9.0000000000000962.

Liang Z, Fu C, Zhang Q, et al. Effects of water therapy on disease activity, functional capacity, spinal mobility, and severity of pain in patients with ankylosing spondylitis: A systematic review and meta-analysis. *Disabil Rehabil*. 2021;43(7):895-902. Doi: 10.1080/09638288.2019.1645218.

Liu Z, Huang M, Liao Y, et al. Long-term efficacy of hydrotherapy on balance function in patients with Parkinson's disease: A systematic review and meta-analysis. *Front Aging Neurosci*. 2023;15:1320240. Doi: 10.3389/fnagi.2023.1320240.

Ma J, Zhang T, He Y, Li X, Chen H, Zhao Q. Effect of aquatic physical therapy on chronic low back pain: A systematic review and meta-analysis. *BMC Musculoskelet Disord*. 2022;23(1):1050. Doi: 10.1186/s12891-022-05981-8.

Ma J, Zhang T, Li X, Chen X, Zhao Q. Effects of aquatic physical therapy on clinical symptoms, physical function, and quality of life in patients with fibromyalgia: A systematic review and meta-analysis. *Physiother Theory Pract*. 2024;40(2):205-223. Doi: 10.1080/09593985.2022.2119906.

Medrado LN, Mendonça MLM, Budib MB, Oliveira-Junior SA, Martinez PF. Effectiveness of aquatic exercise in the treatment of inflammatory arthritis: Systematic review. *Rheumatol Int*. 2022;42(10):1681-1691. Doi: 10.1007/s00296-022-05145-w.

Melo RS, Cardeira CSF, Rezende DSA, Guimarães-do-Carmo VJ, Lemos A, de Moura-Filho AG. Effectiveness of the aquatic physical therapy exercises to improve balance, gait, quality of life and reduce fall-related outcomes in healthy community-dwelling older adults: A systematic review and meta-analysis. *PLoS One*. 2023;18(9):e0291193. Doi: 10.1371/journal.pone.0291193.

Muñoz-Gómez E, Arnal-Gómez A, López Cascón A, Espí-López GV. Systematic review of aquatic therapeutic exercise efficacy in breast cancer survivors. *Support Care Cancer*. 2022;31(1):44. Doi: 10.1007/s00520-022-07460-1.

Nayak P, Mahmood A, Natarajan M, Hombali A, Prashanth CG, Solomon JM. Effect of aquatic therapy on balance and gait in stroke survivors: A systematic review and meta-analysis. *Complement Ther Clin Pract*. 2020;39:101110. Doi: 10.1016/j.ctcp.2020.101110.

Neto MG, Pontes SS, de Oliveira Almeda L, da Silva CM, da Conceicao Sena C, Saquetto MB. Effects of water-based exercise on functioning and quality of life in people with Parkinson's disease: A systematic review and meta-analysis. *Clin Rehabil*. 2020;34(12):1425-1435. Doi: 10.1177/0269215520943660.

Osborne JA, Botkin R, Colon-Semenza C, et al. Physical therapist management of Parkinson disease: A clinical practice guideline from the American Physical Therapy Association. *Phys Ther*. 2022;102(4). Doi: 10.1093/ptj/pzab302.

Palladino L, Ruotolo I, Berardi A, Carlizza A, Galeoto G. Efficacy of aquatic therapy in people with spinal cord injury: A systematic review and meta-analysis. *Spinal Cord*. 2023;Doi: 10.1038/s41393-023-00892-4.

Shariat A, Ghayour Najafabadi M, Ghannadi S, et al. Effects of aquatic therapy on balance in older adults: A systematic review and meta-analysis. *Eur Geriatr Med*. 2022;13(2):381-393. Doi:10.1007/s41999-021-00577-2.

Shariat A, Najafabadi MG, Dos Santos IK, et al. The effectiveness of aquatic therapy on motor and social skill as well as executive function in children with neurodevelopmental disorder: A systematic review and meta-analysis. *Arch Phys Med Rehabil*. 2024;105(5):1000-1007. Doi: 10.1016/j.apmr.2023.08.025.

Veldema J, Jansens P. Aquatic therapy in stroke rehabilitation: Systematic review and meta-analysis. *Acta Neurol Scand*. 2021;143(3):221-241. Doi: 10.1111/ane.13371.

Wang J, Chen X, Wang L, Zhang C, Ma J, Zhao Q. Does aquatic physical therapy affect the rehabilitation of breast cancer in women? A systematic review and meta-analysis of randomized controlled trials. *PLoS One*. 2022;17(8):e0272337. Doi: 10.1371/journal.pone.0272337.

Zhao Q, Dong C, Liu Z, et al. The effectiveness of aquatic physical therapy intervention on disease activity and function of ankylosing spondylitis patients: A meta-analysis. *Psychol Health Med*. 2020;25(7):832-843. Doi: 10.1080/13548506.2019.1659984.

Policy updates

7/2014: initial review date and clinical policy effective date: 12/2015

6/2016: Policy references updated.

6/2017: Policy references updated.

5/2018: Policy references updated.

6/2019: Policy references updated. Policy number changed to CCP.1127.

6/2020: Policy references updated.

7/2021: Policy references updated.

7/2022: Policy references updated.

7/2023: Policy references updated.

7/2024: Policy references updated.