

# RECOVERY THROUGH OSTEOARTHRITIS HYDROKINETOTHERAPY

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**Abstract:** *This paper aims to highlight the importance of recovering coxarthrosis with hydrokinetotherapy. The therapeutic use of water as aquatic therapy hydrokinetotherapy, has become a trend among people interested in maintaining and enhancing their health. In this paper a methodology based on research and expert highlights that aquatic therapy is more effective because it reduces the impact of pain on exercise capacity and suggest that obese patients with severe osteoarthritis or higher levels of pain may benefit from starting treatment hydrokinetotherapy.*

**Key words:** *hydrokinetotherapy, recovery program osteoarthritis.*

## 1. Introduction

### 1.1. What is hydrokinetotherapy?

The therapeutic use of water as aquatic therapy hydrokinetotherapy, has become a trend among people interested in maintaining and strengthening their own health but wish to avoid the use of chemicals, says a press release from the Center for Recovery medical Medcover. Unlike other medical practices, aquatic therapy involves a standard treatment, but one customized according to the needs of each patient.

" Aquatic therapy is effective in most of the dorsal lumbar spinal disorders, arthrosis - osteoarthritis, osteoarthritis, but also in many soft tissue disorders - Tendonitis, tensiovite, bursitis", explained Prof. Dr. Mihai Berteanu of the center for

Medical Rehabilitation Medcover. Water gives the body a feeling of massage (through underwater shower), stimulating tactile receptors of the skin, increasing circulation and releasing muscle tension.

Hydrokinetotherapy is effective in treating acne, symptoms of arthritis, colds stress, depression stomach aches joint problems muscle and nerves relieve pain and sleep disorders. Aquatic therapy is indicated in rheumatism, peripheral neurological, gynecological problems and peripheral circulation. Water-based therapy is used for aesthetic purposes - for relaxation, but also as a preventive method - to maintain good health [1].

Buoyancy-allow contact with water, body weight decrease by 90%. Such dramatic change removes fear of falling during exercise.

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Temperature-heat from the water is so relaxing effect and to reduce existing pain.

Viscosity, it is the thickness of the water, which helps the body slight and progressive resistance exercises specific water.

Hydrostatic pressure, stress on the body when it is submerged. This helps the blood return to the heart from the legs during exercise [2].

### **1.2. What is osteoarthritis?**

Osteoarthritis is a degenerative process in the structures that make up the hip joint (coxofemoral joint). Osteoarthritis may affect only one side of the hip (coxarthrosis unilateral) or affect both junctions of the hip (coxarthrosis bilateral) [20].

As with other joints, the cornerstone of the coxofemoral joint is hyaline cartilage. It is located between the pelvis and femur bones and acting as a protection during the movement in order to reduce friction of the bones. The cartilage of the joint is made up to 95% of water and cartilage extracellular matrix, and the remaining 5% of the chondrocytes. These chondrocytes are some special function cells and the longest cell cycle of all [3].

This is the most common joint disease affecting U.S. only 27 million people of different ages and different weight, obesity is the main source of coxarthrosis [13].

Osteoarthritis is also known as osteoarthritis, a disease that affects the joints of the body. "Osteo" means bone and 'arthritis' is a pain due to swelling of their joints. Their surface becomes damaged and the bone around it grows thicker, resulting in pain and inflammation. Osteoarthritis of

the knee is a very common form of osteoarthritis, with the hip.

### **1.3. What are the early signs of coxarthrosis?**

The first signs are uncharacteristic and announces a long time with pain around the hip joint, radiating away along the thigh or in the internal region of the knee [18].

Sometimes the patient has pain in the plica groin or buttocks muscles.

Radiating pain along the thigh and knee internal region misleading assigning them either a sciatic neuralgia or an arthrosis of the knee.

Laboratory tests are not significant, so sedimentation rate is normal and obese individuals encounter elevated cholesterol, lipids, uric acid and glucose. Radiographic examination of the hip joints outstanding at the beginning cotiloide cavity edge thickening, widening or narrowing of the femoral neck angle etc.[4].

## **2. Recovery coxarthrosis with hydrokinetotherapy**

Hydrokinetotherapy programs have emerged to offer help to patients with joint pain and improve physical performance in people suffering from osteoarthritis. Exercise programs for patients with osteoarthritis of the hip or knee is intended to strengthen bones and pain relief, improving such general health of the patient [5].

Aquatic therapy appears to have a positive effect on people with osteoarthritis. For this, we compare the effect of an aquatic exercise program with

an exercise program conducted in recovery rooms.

Patients in the exercise group participated in exercise intervention 3 times per week for 8 weeks. The result has included analysis of body fat, Brief Pain Inventory, WOMAC, SF-36, and isokinetic strength tests on the hip. Patients from the aquatic exercise groups showed significant improvements to overcome the pain of the disease itself and quality of life compared with the other groups of patients.

Both exercise groups showed significant improvements compared with the initial state of the disease. This study concluded that aquatic therapy is more effective because it reduces the impact of pain on exercise capacity and suggest that obese patients with severe osteoarthritis or higher levels of pain may benefit from starting treatment hydrokinetherapeutic [15].

### **3. Hidrokinotherapy: physical or recovery programs**

Exercise is an essential part of the plan to improve the quality of life for people with osteoarthritis. In an effort to determine the effectiveness of exercise to relieve pain and hydrokinotherapy both the physical rehabilitation programs, comparing the two types of programs. Both types of exercises are beneficial and help to reduce pain and improve function. Soothing water environment tends to promote relaxation and a comfortable environment for muscle strengthening and mobility exercise. Whether the program is aquatic or physically, it helps reduce joint pain and increase muscle strength. Also, weight loss (which can occur as a result of regular exercise) will decrease pressure on joints and pain relief contributions.

Exercise hydrokinotherapy contribute to a sense of wellbeing and reduce health risks associated with a sedentary lifestyle. Both work well and physical therapy exercises will help you choose what's best for the patient as the health of its comfort level and disease status [6].

#### **3.1. Coxarthrosis: Aquatic Exercise for a healthier life**

To develop safe and effective water exercises for participants, you must first understand the anatomy of the hip, including the locations of primary muscle and joint actions of the hip muscles.

Some tips before starting the exercises: Follow the difficulty that the patient wants to avoid any inconvenience;

Advise participants to wear during exercise in water shoes for greater stability and balance;

- Check these cardiovascular abnormalities;
- Check the water temperature! Studies have shown that temperatures as low as 86 ° F (30 ° C), the active participants can be suitable, but others may be more comfortable I felt warmer temperatures, 90 ° F (32 ° C), -93 ° F (34 ° C);
- Find the depth of water from waist to chest, where individuals can tolerate impacts. Feet participants should rely on the bottom of the pool, or active patients must wear a flotation belt to perform exercises in deep water;
- Use some tools to help participants to stabilize their bodies while changing direction in the water [16].

#### 4. Hydrokynotherapy in the treatment of hip and knee osteoarthritis: a pilot

##### Background and Purpose

Hydrokynotherapy is commonly used to treat patients with osteoarthritis of the knee or hip, but there is a lot of research attesting to its effectiveness for patients.

##### Subjects

A total of 71 volunteers with osteoarthritis of the hip or knee participated in this study.

##### Methods

The study was designed as a randomized controlled trial in which participants were

randomly selected and received 6 weeks of aquatic therapy or physical therapy.

##### Results

Hydrokinetotherapeutic program resulted in less pain and stiffness, quality of life and muscle strength of the hip that increasing knee. A total of 75% of participants had improvement in reported pain relief as compared with 17% of patients who undergo physical rehabilitation program. Benefits were maintained up to 6 weeks after completion of therapy, 84% of participants continuing independently recovery [17].

*Aquatic exercise versus control after treatment-hip [19]*

Table 1

Effect	No. of studies	Nr. participants	Methodes			The result
Pain	1	17	Standardised (Random)	Mean	Difference	1.00 [-0.04, 2.04]
Functions	1	17	Standardised (Random)95%	Mean	Difference	1.00 [-0.04, 2.04]
Quality of life	1	17	Standardised (Random)95%	Mean	Difference	1.00 [-0.04, 2.04]

*Aquatic exercise versus control tracking – hip [19]*

Table 2

Effect	Nr. studies	Nr. participants	Methodes			The result
Functions	1	28	Standardised (Random) 95%	Mean	Difference	0.7[-0.02, 1.53]
Quality of life	1	28	Standardised (Random) 95%	Mean	Difference	0.76[-0.02, 1.53]

### 5. Specific exercises for the treatment of coxarthrosis by means of water



Fig. 1. *Warming (3-5 minutes)*

**Objective:** To adjust the buoyancy to heat and water and the body. Wearing gloves, begins with a slow running or marching in place.

**Increased dosage and speed.** Hands are used to stabilize the front. Forward and backward along the pool (a). Start with small steps and gradually increase the speed and grow.



Fig. 2. *Exercises for glutes, a*

**Action:** the swimming leg extension, flexion, external rotation, adduction. Consolidation: Sitting on the fingertips.

Hands are kept above water for stability and balance. Double-leg squats lower in shallow water or on a step. Check posture with ears, shoulders and hips aligned. [8].



Fig. 3. *Exercises for glutes, b*

**Progression:** hands remain above the surface (a) to increase the load on the lower body and increase the challenge to your balance.

Start again with hands in water and make a single-leg squat (b), which increased over time, maintained and each squat for 2-5 seconds. For significant progress to keep your hands above the water more intensity.



Fig. 4. *Exercises for glutes, c*

**Stretching:** dynamic stretches buttocks muscles by lifting legs on the bottom of the pool in a hug position [8].



Fig. 5. *Hip abduction and adduction, a*



Fig. 6. *Hip abduction and adduction, b*

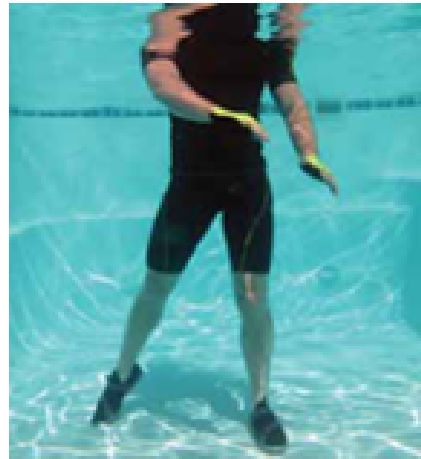


Fig. 7. *Hip abduction and adduction, c*

**Muscles:** adductors brevis, longus, magnus; abductors tensor fasciae latae, gracilis, iliacus [20].

**Action:** Hip adduction, rotation outside and inside flexion.

**Strengthening:** Start with feet apart (a) and knees putting together b) of the hip adductor muscles on such. Keep the size and speed of movement in the year and increase as tolerated by the patient. c) Abduction and adduction of the hip: freewheel [9].



Fig. 8. *Hip flexion*

**Muscles:** pectineus, psoas major and minor

**Action:** flexion of the foot on the hip adduction, external rotation. Static stretches: Begin with a lunge position (half mini kneel). Squeeze your glutes to feel tension.

**Progression:** For advanced stretching, start with one foot on the bottom and move one leg over the other, pushing against the ankle and knee to feel stretching in front of the hip.

Sitting suspended position for a greater challenge (a). Tighten your abs and check the correct posture, ears and shoulders aligned. [10 ], [11 ], [12 ].

## 6. Conclusions

Specialized research and methodology emphasize that aquatic therapy is more effective because it reduces the impact of pain on exercise capacity and suggest that obese patients with severe osteoarthritis or higher levels of pain may benefit from starting treatment hydrokinetherapeutic.

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