

## Aqua Therapy Helpful in Treatment of Systemic Lupus Erythematosus

Aqua or pool therapy can be a valuable addition to an existing care plan, or even as a standalone primary restorative treatment, for this complicated and perplexing condition.

By Tiziano Marovino, DPT, MPH, DAAPM

As a practicing physical therapist, I have had the opportunity to evaluate and treat patients with systemic lupus erythematosus (SLE; also known as lupus). Although some of the pathophysiology of this disease is known, it is clear that there remains much that is unknown. This entity, also known as the great imitator, can be difficult to diagnose because it shares symptoms with many other disorders. In fact, no two patients diagnosed with SLE seem to present the same clinically.

Lupus is generally considered to be an autoimmune disorder, and as such, can affect many different organs or systems simultaneously. As a result, there can be myriad symptoms that present for treatment at any given time. The most common musculoskeletal symptoms of SLE can include extreme fatigue, painful/swollen joints, peripheral swelling (legs, feet, hands, etc.), and muscle weakness. It would not be an overstatement to suggest that the treatment of lupus from a physical therapy and rehabilitation standpoint is often daunting.

Keeping this in mind, clinicians who treat patients with lupus continually search for therapies that are both effective in the functional restoration of afflicted persons and are well tolerated by patients who can be severely deconditioned and have extreme joint fragility. Aqua or pool therapy can be a valuable addition to an existing care plan, or even as a standalone primary restorative treatment, for this complicated and perplexing condition.

### Historical Roots of Aqua Therapy

For many years, warm water pool therapy has been a staple of rehabilitation medicine because of its numerous health benefits compared with its few disadvantages. The use of water treatment or hydrotherapy historically has been a popular treatment for many conditions and has been used in many cultures and civilizations. Medicinal hydrotherapy was used for both spiritual and physical healing purposes, with later use in sporting events. In Europe, medicinal hydrotherapy became popular for the treatment of musculoskeletal problems, and today the modern forms of hydrotherapy include thalassotherapy (sea water treatment), spa treatments, and aqua therapy for rehabilitative purposes. The latter application gained momentum from its predecessor, hydro-gymnastics, which became important for the treatment of post-polio patients.

Toll Free: 866-577-3422 • [www.Aquahab.com](http://www.Aquahab.com)

[facebook.com/AquahabPhysicalTherapy](https://facebook.com/AquahabPhysicalTherapy) • [twitter.com/AquahabPT](https://twitter.com/AquahabPT) • [instagram.com/AquahabPT](https://instagram.com/AquahabPT)

#### Central Billing Office:

1040 Mill Creek Drive  
Feasterville, PA 19053  
V 215.355.2700  
F 215.355.2701

#### Bala Cynwyd

601 Righters Ferry Rd.  
Bala Cynwyd, PA 19004  
V 610.664.6464  
F 610.664.6631

#### Newtown

120 Pheasant Run  
Newtown, PA 18940  
V 267.759.6575  
F 215.914.9019

#### Jenkintown

921 Old York Road  
Jenkintown, PA 19046  
V 215.887.8787  
F 267.287.0375

Water is recognized as the lifeblood of mankind and is revered as a natural element of the earth, with almost mystical properties being ascribed to it. It should not be surprising then that water has become an integral part of the healing experience, and it is within this context that we describe the therapeutic properties of aqua therapy in the functional restoration process for patients suffering from SLE.

### **Physiologic Benefits**

When physical therapies such as exercises are performed in water, patients reap great benefits, not the least of which is minimal joint stress. Because the effects of gravity are minimized in the water, and depending on the depth of the pool relative to the height of the patient, as much as 90% of body weight can be alleviated from the skeleton. The result of this natural “unloading” is the unloading of spinal and peripheral joints, creating a natural “decompression” effect. Tissues that can normally be compromised in a gravity environment, such as spinal nerve roots, fibrocartilage (menisci), synovial tissue (plica), and bone ends in degenerative joint disease, will benefit immediately and sometimes drastically if decompressed. In conditions, such as lupus, where there is muscle and joint fragility, this natural tissue unloading can serve the patient well and allow more prolonged and therapeutic exposure to exercise to counteract deconditioning that can accompany the disease.

The two natural forces that exist in all joints are compression and shear forces, both of which are necessary for optimal joint function. When absent for prolonged periods, the lack of these forces can accelerate joint decay, as confirmed when we observed no gravity-state situations such as space travel and in prolonged non-weight-bearing convalescence and/or spinal cord injuries. At the same time, when these forces are either excessive, or simply overwhelming a fragile joint, they add to premature wearing out of hyaline cartilage layers that are designed to be joint protective.

Exercising in the water allows the patient with lupus to generate maximal internal muscle tension, which is very important in the strengthening process, and to use the principle of progressive overload. To the best of our current knowledge, muscle physiology characteristics, including adaptations to strengthening regimens, do not differ in SLE patients. The ability to generate high tension levels will allow optimal strengthening of muscle-tendon units so those beneficial alterations in muscle capabilities can occur in the patient with lupus. High internal muscle activation coupled with lower internal joint forces, including shear and compression vectors, can provide a safe and effective training environment for these patients.

*Toll Free: 866-577-3422 • [www.Aquahab.com](http://www.Aquahab.com)*

*[facebook.com/AquahabPhysicalTherapy](https://facebook.com/AquahabPhysicalTherapy) • [twitter.com/AquahabPT](https://twitter.com/AquahabPT) • [instagram.com/AquahabPT](https://instagram.com/AquahabPT)*

#### **Central Billing Office:**

1040 Mill Creek Drive  
Feasterville, PA 19053  
V 215.355.2700  
F 215.355.2701

#### **Bala Cynwyd**

601 Righters Ferry Rd.  
Bala Cynwyd, PA 19004  
V 610.664.6464  
F 610.664.6631

#### **Newtown**

120 Pheasant Run  
Newtown, PA 18940  
V 267.759.6575  
F 215.914.9019

#### **Jenkintown**

921 Old York Road  
Jenkintown, PA 19046  
V 215.887.8787  
F 267.287.0375

As a result of creating an exercise environment that is pleasant to work in, practitioners might find that compliance also is improved when a properly executed pool therapy regime is used. Gravitational forces acting in a land-based exercise program can make for considerable delayed onset muscle soreness (DOMS) usually attributed to the eccentric phase (negative portion) of the exercise. The buoyant nature of the water environment, which counteracts gravity, allows the eccentric portion to be performed virtually gravity-free, resulting in very little muscle soreness. More vigorous muscle contractions, minimal joint stress, more comfortable workouts, and less after-workout soreness all culminate into a more enjoyable functional restoration process for these patients.

The relaxing nature of heated water in a warm water pool will soothe the exercising patient even more. Cold water can make muscles tense and elicit “muscular guarding” from a patient. The use of warm water (32.2°C-34.4°C) is recommended for therapeutic purposes in almost all cases except for patients with multiple sclerosis or those having heat sensitivities.

Another characteristic feature of patients with SLE is that over time, noticeable deconditioning occurs that affects multiple systems, including the cardiovascular, muscular, and respiratory systems, and corresponding biochemical energy pathways that support their proper use. It is not unusual to identify a certain degree of kinesiophobia in the lupus patient, which is completely justifiable based on prior land-based exercise efforts. For many of these patients, the typical gym workouts are simply too exhaustive and painful, and as a result, exercise efforts are discontinued for fear of pain and a simple lack of energy. Transitioning this person into a pool for exercise therapy can facilitate a more complete set of exercise-related adaptations (benefits) simply owing to a greater exposure to exercise via improved effort and compliance to the program for a lupus patient. No one wants to expose him or herself to painful and energy-sapping activities that yield little in the way of gains.

*Toll Free: 866-577-3422 • [www.Aquahab.com](http://www.Aquahab.com)*

*[facebook.com/AquahabPhysicalTherapy](https://facebook.com/AquahabPhysicalTherapy) • [twitter.com/AquahabPT](https://twitter.com/AquahabPT) • [instagram.com/AquahabPT](https://instagram.com/AquahabPT)*

**Central Billing Office:**

1040 Mill Creek Drive  
Feasterville, PA 19053  
V 215.355.2700  
F 215.355.2701

**Bala Cynwyd**

601 Righters Ferry Rd.  
Bala Cynwyd, PA 19004  
V 610.664.6464  
F 610.664.6631

**Newtown**

120 Pheasant Run  
Newtown, PA 18940  
V 267.759.6575  
F 215.914.9019

**Jenkintown**

921 Old York Road  
Jenkintown, PA 19046  
V 215.887.8787  
F 267.287.0375