

TRAINING

# Fitness for Challenged or Disabled Divers

By Gretchen M. AshtonAug 25, 2016

Scuba diving offers disabled individuals an opportunity to leave their wheelchairs behind and experience freedom of movement underwater.

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Personal training is an inspirational profession. Although clients hire trainers and coaches for inspiration, most often the clients instead inspire the trainers. This is particularly true when working with injured, disabled and special-needs clients. Physical fitness is even more essential when it comes to addressing birth defects, disease, accidents and wartime injuries. The average healthy individual who falls out of their exercise and nutrition routine will experience setbacks, but nothing like a challenged or special-needs individual. Exercise enhances life for challenged clients, because physical health is essential when it comes to performing daily activities. Physical-fitness therapies also become the basis for participation in adaptive sports such as scuba diving. Challenged or disabled divers have the opportunity to experience freedom of movement underwater.

Although all certification agencies recommend against exertion while using scuba, diving is a different experience for challenged divers. The [Cody Unser Foundation](#) is conducting research on the physical and psychological benefits for challenged and special-needs clients. Handicapped Scuba Association, WAVES, Diveheart, SUDS and the [Wounded Warrior Project](#) sponsor adaptive-diving opportunities and train dive professionals to work with challenged clients. The feel-good aspect of diving is also beneficial for overall wellness. The pressurized environment can also offer positive effects for some diseases, such as neurological disorders.

Health challenges can range from short-term injuries to cancer treatment or surgery recovery. Other health challenges include debilitating arthritis, ALS, muscular dystrophy or cerebral palsy, PTSD, brain and spinal-cord injuries or amputations, among others. A number of restorative therapies help strengthen the body for diving, such as aquatic therapy, electrical muscle stimulation and active therapy, as well as traditional strength and aerobic exercise.

## Aquatic therapy

Aquatic therapy is particularly synergistic with diving. The publication *Disabled World* defines aquatic therapy as “a form of physical therapy that is performed in a pool. The use of heat and warm water is preferable in association with aquatic therapy.” Aquatic therapy is meant to help restore a patient’s strength and movement through the use of buoyancy, resistance and heat. Therapies may involve both active exercise, called hydrotherapy, or passive immersion, called spa therapy. In the United States, aquatic therapy most often involves therapeutic exercise, such as gait training, functional task simulation and so forth. Regarding spa therapy, *Disabled World* says, “There is something to be said for enjoyment of stillness and inactivity. Remaining open-minded in regards to both spa and aquatic forms of therapy can be very helpful.”

The publication discusses various types of aquatic therapy including Ai Chi, modeled after the principles of T’ai Chi and yogic breathing techniques. Aquatic Proprioceptive Neuromuscular Facilitation is modeled after the movement patterns and principles of Proprioceptive Neuromuscular Facilitation (PNF). Aquatic Task-Type Training (TTTA) is a set of parameters for optimizing a person’s treatment, particularly those with neurological impairments.

## Electrical muscle stimulation and active therapy

Restorative Therapies, a Baltimore, Maryland company, uses Functional Electrical Stimulation (FES) therapies “to help people with neurological disorders or people in critical care achieve their full potential.” The technique uses pulses of electrical current to stimulate peripheral nerves, i.e. the lower-motor neurons that connect the spinal cord to muscles, generating muscle contractions and patterned muscle activity. FES works well for patients with weak or paralyzed muscles, even if the individual cannot consciously participate.

Therapists can use FES with specially designed exercise equipment such as an ergometer. This is best described as a stationary bike for the arms, or one that’s used while lying down rather than upright or seated. This is called active therapy, and according to Restorative Therapies, “is achieved either when an individual moves his muscles on his own or when those muscles are activated by FES.” Either way, the goal is to get the muscles working again.

## Traditional strength and aerobic exercise

Last but not least, many health-challenged divers can perform traditional strength training and aerobic exercises, just slightly modified. Some fitness centers have adaptive modular-exercise machines, treadmills, ergometers and bikes. Cables, pulleys, bands and free weights offer additional options to help challenged divers stay fit. It is important to mention that instructors and dive buddies who assist disabled divers must stay in good physical condition. They may also make a good workout buddies. Exercises similar to those practiced during rescue diving courses are especially helpful, as both involve assisting another diver.



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Gretchen brings her passion for diving and fitness together as the founder of ScubaFit® the only fitness for diving certification which is also approved by both diving and fitness agencies. She is an advanced diver, NBFЕ and ISSA Elite Personal Trainer, Specialist in Fitness Therapy and Nutrition, an AAU World Champion Hall-of-Fame athlete, and a mentor for Water Women, Inc. She shares her message with divers by visiting dive clubs, presenting at scuba shows, as a radio guest, as the publisher of FitDiver® Magazine, and with FitDiver® mobile apps. She widely published with more than 125 articles for diving publications and blogs. For more information or to contact Gretchen, visit [www.scubafit.com](#).

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