

The use of aquatic therapy in canine rehabilitation and conditioning

Hydrotherapy has been used by humans as a means of rehabilitation for centuries, with its origins tracing back to 2400 BC when ancient Egyptians used water for therapeutic and healing purposes. In more recent times, hydrotherapy has found its place in both human and animal rehabilitation and often involves the use of an underwater treadmill (UWTM) or a swimming pool. The main goal of hydrotherapy is to improve function on land in a faster time frame in comparison to land-based therapy alone for those recovering from orthopaedic surgery or a neurological condition. It can also have an analgesic effect in when used as a management strategy for long term conditions such as osteoarthritis, as an adjunct in managing obesity, and can help enhance strength and fitness and in a fun way. There are various factors to weigh up when choosing between swimming and the use of an underwater treadmill, such as the dog's size, temperament, and the underlying reason for referral.

Benefits of swimming in a pool is that it is totally non-weight-bearing allowing for maximum active range of motion of the joints and can help improve cardiopulmonary fitness by working the whole body. For some dogs the use of an underwater treadmill is more appropriate as the therapist can help facilitate gait retraining in a more normal pattern. Benefits of underwater treadmill are improving active range of motion compared to land, allowing partial weight bearing (particularly important after a fracture), changing the speed of the gait in a controlled way, improving proprioception, improving balance and strength by building lean muscle. Gait retraining on a treadmill during a treatment session allows the therapist, if required, to aid the normal movement patterns and I believe, having your pet partake in activities that have meaning to them i.e. walking or trotting in everyday situations, is more effective. So, whilst swimming benefits a small number of animals over the underwater treadmill, will swimming assist your pets' movement on dry land? There's growing evidence of a negative transfer effect where the experience an animal might have whilst swimming will not benefit locomotor activity when on land.

Underwater treadmill therapy benefits pets suffering from arthritis, those recovering from orthopaedic surgery or a neurological condition, as well as improving the fitness of a competition or working dog.

Underwater treadmill therapy uses the properties of water to aid the rehabilitation process by;

- **Resistance** – this helps restore muscle strength, endurance and cardiovascular health, which is variable by speed. Slow speeds are used for animals with neurological problems since the viscosity of the water gives more reaction time and they're more likely to step correctly instead of dragging their feet. Moderate speeds are used for most post-surgical and arthritic pets initially and to warm up and cool down athletes. Fast speeds are used for athletes and stronger animals that are more advanced in their rehabilitation.
- **Buoyancy** – By reducing the impact on degenerative joints and supporting sore or weak pets, which is variable by water height.
- **Controlled temperature** - where warmth improves circulation and aids relaxation, reducing muscle and joint pain
- **Hydrostatic pressure** – Helps improve circulation and reducing swelling, aiding the healing process

If your pet is recovering from surgery the gentle and low impact environment allows hydrotherapy to begin from as early as two weeks post-op after suture removal. With buoyancy ensuring less weight is going through a sore or weak limb, they're more likely to place the limb to the ground, increasing their confidence.

Some pets may be a little fearful of the belt moving under their feet or find their coordination and body awareness is a little "off balance", which can make the treadmill environment a little challenging. But with the careful therapeutic handling, these potential obstacles are easily overcome. For pets that have a fear of water, having their limbs in contact with the floor as the water slowly fills up from the bottom, makes the underwater treadmill much less intimidating when compared to swimming.

Underwater treadmill therapy should be used in addition to land-based therapies, which is why when your pet is referred for hydrotherapy, they may be examined by a Physiotherapist before commencing hydrotherapy sessions. A recommended home management programme is usually designed by the physiotherapist to complement your pets' underwater treadmill therapy, which may incorporate rehabilitation exercises that are not just performed in a straight line.

If you would like to discuss if hydrotherapy can help your pet then it is possible to search for Chartered Physiotherapists covering your area by visiting <https://www.acpat.org/find-acpat-physio> or registered Hydrotherapists by visiting <https://narch.org.uk/Home/Index> and searching by postcode.

References

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