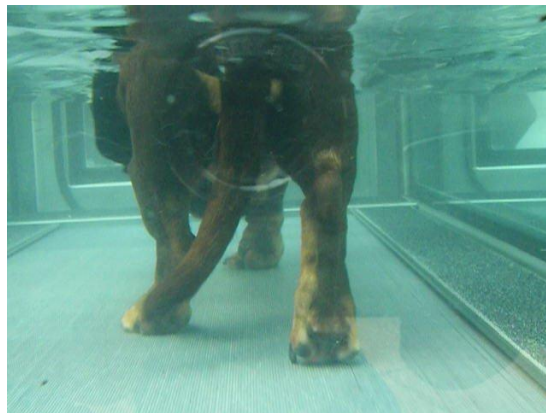




Introduction to Hydrotherapy in Veterinary Practice Mini Series

Session 3: Hydrotherapy for Specific Conditions or Patient Groups

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Types of conditions treated with hydrotherapy

Orthopaedic – osteoarthritis, developmental, surgical

- Neurological/Spinal
- Soft tissue injuries
- Degenerative and medical conditions

Osteoarthritis is a factor in many of the conditions suffered by patients referred for hydrotherapy. It is useful to look at joint anatomy, the changes in joint structure associated with osteoarthritis, aggravating factors and why hydrotherapy can be useful as this applies to many of the conditions discussed further on in these Study Notes.



Osteoarthritis – joint anatomy revision

Cartilage

Articular cartilage covers the ends of bones and it is smooth and slippery. It acts as a shock absorber in the joint and allows bones to move against each other easily without causing damage. Because of the impact cartilage has to withstand there is no blood supply and nourishment is supplied by the fluid around the joint.

Synovial fluid

Synovial fluid is contained by the joint capsule. An unusual property is that the synovial fluid thickens under pressure and immediately thins when pressure is removed so the harder the joint is working the better the protection provided by the synovial fluid. When cartilage is compressed some synovial fluid is squeezed out and when compression is released fresh synovial fluid containing nutrients is absorbed.

Increased exercise and range of motion are important to maintain this process - hydrotherapy is a good way of providing both with reduced weight bearing or no weight bearing depending on whether the water treadmill or pool is used. It is important to avoid increasing pain and inflammation so exercise control and a planned program are vital.

What is osteoarthritis?

Also known as degenerative joint disease (DJD) it is a low grade inflammatory process resulting in:

- Progressive changes in joint structure and function
- Thickening of the joint capsule
- Alterations in the quality and effectiveness of synovial fluid
- Loss of articular cartilage
- Increased density of subchondral bone
- OA can occur in any joint

Factors affecting osteoarthritis

1. Genetics



Osteoarthritis (OA) has a considerable hereditary component. Genes associated with OA tend to be related to the process of synovial joint development and mutations in these genes might directly cause OA. In addition, they could also determine the age at which OA becomes apparent, the joint sites involved, the severity of the disease and how rapidly it progresses. (Reference 1) Some breeds of dog presenting as OA patients are over represented compared with their percentage of total canine population.

2. Weight?



Weight is a significant factor in lameness for dogs with OA. Dietary control, exercise control, hydrotherapy and analgesia (where appropriate) can all help to break the cycle of reduced exercise, weight gain and pain. A study into **“The effect of weight loss on lameness in obese dogs with osteoarthritis”** (Reference 2) indicated that body weight reduction caused a significant decrease in lameness from a weight loss of 6.10% onwards. The authors stated “Kinetic gait analysis supported the results from a body weight reduction of 8.85% onwards. These results confirm that weight loss should be presented as an important treatment modality to owners of obese dogs with OA and that noticeable improvement may be seen after modest weight loss in the region of 6.10 – 8.85% body weight.”

3. Abnormal load on a normal joint or (worse) an abnormal load on an abnormal joint



Joints are made to take a specific loads – repetitive abnormal loads can cause damage to the joint and cartilage, setting up an inflammatory process resulting in osteoarthritic changes. Examples would be jumping (too high or too far), stopping abruptly, repeated low level damage, asking a dog to perform functions that are difficult given their body shape, level of maturity or fitness. The worst case scenario would be adding all of these additional loads to a joint that is already abnormal due to dysplasia, past injury or existing arthritic changes.

4. Working dogs



Working dogs can be put under similar strains to dogs that compete in various sports. However there are occasions, for instance with police dogs, where they are asked to do extraordinary things and will push themselves to the limit because of their high drive. So they are more at risk of injury or repeated injuries and, despite excellent handler and veterinary care, will often be retired because of osteoarthritis resulting from their workloads and length of working life.

What's age got to do with osteoarthritis?

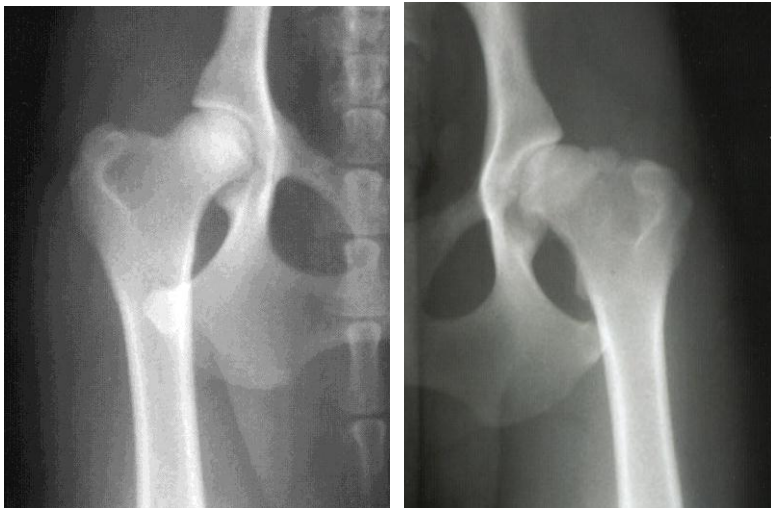
OA is not just a condition of "old" dogs - the process can start very young in life. Some breeds have a genetic disposition and where this collides with dysplasia (elbow, hip, etc) the inflammation and osteoarthritic changes can be more severe than in some other breeds.

Environmental factors may also play a part in the development of OA. For instance - slippery floors causing micro damage/injury to joints, inappropriate levels of exercise too young (especially in large/giant breeds), asking the dog to compete before skeletally mature.

Osteoarthritis normally occurs secondary to other conditions

It is likely to occur if a dog suffers from any of the following:

- Osteochondritis/osteochondrosis dissecans
- Hip or elbow dysplasia
- Traumatic or chronic joint instability
- Joint luxation
- Articular fractures
- Other forms of arthritis – for example septic or immune mediated



Above comparison of normal and arthritic hips

In the radiograph to the left the femoral head has a smooth appearance and there is good coverage of the head by the acetabulum. In the radiograph to the right you can clearly see the changes associated with hip dysplasia and osteoarthritis. There is extensive remodelling of the femoral head and neck plus acetabulum. There is also poor coverage of the femoral head.



Multi-modal management of osteoarthritis

This means using all, or at least considering the use of all, of the following options to get the best possible outcome for the patient:

- Owner education – exercise management and education about the effects of OA on their dog and the importance of following a program to improve their current quality of life, future quality of life and length of life
- Environmental management – using ramps in and out of cars, rugs on slippery floors, avoiding charging up and down stairs
- Exercise modification – little and often
- Optimal body condition – weight loss!!
- Senior or veterinary diets – it is very difficult for clients to manage weight without the correct feeding program and good dietary advice
- Pain relief – medication, acupuncture. With good analgesia the patient will move more easily, be more willing to exercise and have a better range of motion. This is vital when commencing on a hydrotherapy program as it is unfair to ask the patient to do exercise that may initially make it more uncomfortable and would be counter-productive for achieving rehabilitation goals – especially if the owner perceives that the dog is less willing to exercise
- Chondroprotectives – there is some disagreement about the effectiveness of products but these should be considered
- Hydrotherapy and physiotherapy – effective for reducing pain levels, increasing ROM, strength, stability, muscle bulk and maintaining a good quality of life
- Appropriate veterinary management of medical pathology – including surgery

Why is hydrotherapy good for osteoarthritis?

- Reduces pain and inflammation – effects of hydrostatic pressure, reduced pain sensation and gentle exercise
- Regular exercise helps to increase range of motion – the dog is usually more comfortable to move all joints through a larger range of motion. When repeated with regularly spaced appointments the effect can be an overall increase in ROM and this can be maintained.
- Increased ROM increases “pump action” for synovial fluid turnover - reducing toxins and increasing nutrients within the joint capsule, thus helping to improve or at least maintain cartilage and reduce on going OA changes and inflammation
- Warmth of water increases blood supply to surrounding soft tissues – again helping to reduce spasm, stiffness and reluctance to move
- Improved quality of life

Hydrotherapy treatment for osteoarthritis

- Cautions/management – hydrotherapists should always be checking on the level of land based exercise and have there been any sudden changes (a beach holiday) or examples of over exercise – for example squirrel chasing! Has the dog been more stiff or uncomfortable?
- Flare ups – because osteoarthritis is cyclical dogs can suffer flare ups. One of the aims of hydrotherapy is to lengthen the time between these periods of inflammation and pain. Hydrotherapists should again be sensitive to when the patient is more uncomfortable and adjust or reduce the intensity or length of time of sessions. It also might mean that a dog that normally attends hydrotherapy once a week as a maintenance hydrotherapy appointment may need to attend twice a week for more gentle hydrotherapy until medication and rest help to resolve the flare up
- Medication – clients are often reluctant to actually give the medication prescribed or may be giving a reduced dose. They will often tell hydrotherapists what they are really giving and hydrotherapists, who are suitably trained, can help to reinforce the message that a full and correct therapeutic dose should be given. Also hydrotherapists can often pick up that an animal is more uncomfortable than previously, perhaps from demeanour or unwillingness to exercise, and ask that the client returns to the vet for a follow up consultation
- Neurological signs? – especially with older dogs referred for ‘general OA’ it is not unusual to find that in fact there may be neurological signs such as ataxia, difficulty in rising and slow replacement of paws with a knuckle test. If there is no mention of this on the referral or medical history, the dog should be sent back to the vet for further examination prior to hydrotherapy (to exclude possible spinal/neurological problems and potential harm with inappropriate hydrotherapy treatment). When hydrotherapists are aware of existing problems they can usefully assess if there is any improvement or deterioration in the patient’s condition and again ask the client to return to the vet if there are concerns – often clients are not very perceptive about changes or pain levels in their dogs or will delay too long before returning for a veterinary consultation
- Mistaken assumption that OA is the cause of all symptoms the dog suffering from? – this should always be considered as often dogs (especially older ones) are referred for hydrotherapy who do have OA problems and discomfort but are also suffering from other problems or injuries that are masked by the long history of OA and gradual deterioration in quality of life
- Possibility of underlying medical conditions? – again should always be considered

Old dogs are the best dogs!



What is geriatric?

It is hard to give definitive answer because there are huge variations between breeds. The average canine life-span is 13 years.

Examples of geriatric thresholds:

Giant breed	4-5 years
Large breed	6-7 years
Small breeds	8-9 years

Signs and symptoms of aging

- Pain
- Occasional stiffness , increased frequency over time
- Difficulty rising
- Reluctance to exercise, climb stairs, jump in/out car
- Lameness
- Loss of joint ROM
- Muscle atrophy and weakness
- Reduced quality of life

Age - Exacerbating factors

- Weather changes - cold and damp can increase discomfort
- Long periods of rest or recumbancy – older dogs may sleep longer or be reluctant to rise and toilet either because of discomfort or aging behavioural changes
- Inappropriate exercise – often clients will not understand the dog is struggling or feel they must keep going with longer walks to keep the dog active. Often this is counterproductive as their discomfort is worsened and the effects are increased pain and lameness with sitting down on walks or refusing to move/lagging behind. Hydrotherapy is a useful way of providing exercise and maintaining cardiovascular fitness without discomfort.
- Weight gain – reduced exercise without reducing calories will lead to weight gain, more discomfort, less exercise and more weight gain. Hydrotherapy is very useful for breaking this cycle.
- Poor or inappropriate diet – as dogs age they are less able to absorb nutrients from food so the quality of food needs to be better and more easily digested. Clients may also tend to increase 'treats' if they feel sorry for the dog and this also adds to weight and health problems.
- Concurrent medical pathologies - dementia, thyroid disease, laryngeal paralysis, heart disease, liver disease, renal disease

Geriatrics with multi-joint osteoarthritis

Many elderly canines present with OA in several joints. They may have been coping well until a particular joint becomes too painful and other joint pathology leaves them unable to compensate and successfully negotiate everyday activities



Thorough assessment is needed to identify which areas are most limiting the dog's function

- Joint pain – will result in reluctance to exercise or difficulty with certain transitions or movements, for example coping with steps or stairs, rising, sitting or standing
- Hindlimb weakness – as dogs age they lose muscle and this can be exacerbated by lack of exercise (or suitable exercise) due to discomfort
- Poor co-ordination on transfers – struggling to rise, starting to sit and collapsing down quickly, unable to sit and flopping to sternal recumbancy or side lying
- Worsening neurological signs – needs careful monitoring
- Incontinence – age related changes but also difficulty in rising, moving or holding a position can add to this problem
- Environmental factors and client's ability to cope – is the client able to help the dog with a car ramp, harness, etc. or is this physically too difficult for them.

When referred for hydrotherapy progress can be slow and a return to previous levels of activity is often not achievable.

But with a careful multi-modal approach many dogs can lead a good quality of life for some time with very severe OA.

Many owners are desperate to do the right thing for their dog at this point, they just don't know what that is!

All the options need to be discussed taking each individuals situation into consideration – clients will need education and extra time

Goals of hydrotherapy treatment

- Provide adequate pain relief to reduce severity of clinical signs
- Allow increased activity, therapeutic exercise and weight loss
- Increase muscle strength and joint function
- Slow disease progression
- Promote tissue repair where possible
- IMPROVE QUALITY OF LIFE – not a longer life but BETTER?

Extra care with hydrotherapy treatment for geriatrics ...



- We have to consider the effects of hydrostatic pressure
- Cardiovascular exercise
- Physiological stress
- Emotional stress
- Temperature regulation
- Reduced immunity/vaccinations

Obesity



Obesity causes abnormal loads on joints – resulting in more injuries, difficulty recovering from injury, degenerative joint disease and more arthritic changes. Pain is the biggest limiting factor for mobility

Obesity restricts lung capacity and affects heart function – exercise becomes more difficult and mobility is further reduced. Therefore hydrotherapy needs to be carefully controlled for these patients and they need to be kept under constant and close supervision. Clients often want a 'quick fix' and we have to manage their expectations so they understand that it has taken a long time for the dog to gain the weight and that gentle and consistent weight loss is what we are aiming for.



The hydrotherapist can help to reinforce the message being given by vets and nurses. Hydrotherapists are typically with their clients and talking to them for two x thirty minute sessions a week and this may continue for months helping to build trust and understanding and increasing client compliance. If the patient is attending weight control classes it can be really useful for communication to be both ways between the nurses and hydrotherapists – let's deliver the same message every time!

Nurses could go to visit their local hydrotherapy centre and see how treatments are carried out as talking from experience and personal recommendation is always more powerful for clients. Early success, even if only a few grams in the right direction being suitably praised, can lead to better client compliance.

Some obesity cases referred are unable to walk without harnesses and slings and hydrotherapy is the **ONLY** exercise option for these dogs. Morbidly obese and welfare cases are taken as inpatients at Greyfriars as we find that this is the most effective way of treating these dogs. Some welfare cases are the subject of prosecution and are in such poor condition they cannot be suitably cared for in rehoming kennels.

Obesity patients may need hydrotherapy daily or attend as an outpatient 2-3 times per week.

Hydrotherapy for orthopaedic conditions

Cases referred for hydrotherapy usually fall into these main categories

- Conservative management
- Pre-operative
- Post-operative
- Chronic conditions

Plus combinations of the above

Shoulders



- Soft tissue injury?
- Dislocation – extreme care required with hydrotherapy to avoid a repeat dislocation
- Dogs swim extremely strongly with their front end and pull themselves through the water. Hindlimbs are often used as an optional extra!
- Is water treadmill a better option? – this should always be considered for dogs with shoulder injuries or problems

What else could it be? EXTREME CAUTION – cervical spinal conditions must be excluded prior to hydrotherapy as these often present initially as forelimb or bilateral forelimb lameness or intermittent lameness.

Elbow dysplasia

Elbow dysplasia is a term used to describe a variety of conditions affecting the conformation of the elbow joint

- UAP – United anconeal process
- FCP – Fragmented coronoid process
- OCD – osteochondritis dissecans

There will be arthritic changes and many dogs attending hydrotherapy will have had arthroscopy and be quite painful.

Hydrotherapy for elbow dysplasia



Problem list:

- Decreased ROM – hydrotherapy aims to increase ROM
- Pain – gentle swimming and the effects of immersion can help to reduce pain levels
- Muscle atrophy – can be reversed with suitable exercise and this may be more effective in water if full weight bearing on land is too painful or to be avoided
- Compensatory gait – the dog will choose to walk in the way most comfortable for them and this can then set up further problems and discomfort in opposing limbs, shoulders or the back

Aims – Hydrotherapy protocols would initially be cautious for both duration and intensity, but building up to full hydrotherapy sessions as soon as possible.

Cautions – these patients need careful monitoring for any increase in lameness especially if attending post-surgery.

Hip dysplasia

When to refer?

- Consider age/severity – normally the earlier the referral the better the patient will do. With puppies and young dogs referral is urgent to gain muscle to support the hips and avoid secondary problems. With older dogs referral as soon as there is a diagnosis is better than waiting for the dog to be very uncomfortable and struggling – these dogs will typically have attended for a consult because they are painful and will usually start on a course of NSAIDs at the same time as starting hydrotherapy treatment.
- Conservative management – many dogs never need surgery and can be successfully managed using hydrotherapy to counteract the problems caused by gait abnormalities including lack of hip extension on land. By maintaining a good level of overall fitness, lower pain levels and better musculature these dogs can do extremely well and may only need occasional analgesia to manage OA flare ups as they age.



Radiograph on the left is of Buffy the Golden Retriever at 18 months old. She was a Canine Partners bred dog and much leaner and longer than the other dogs in her litter. She is now 8 years old and has been managed with reduced exercise and hydrotherapy. She has not needed surgery and her quality of life is excellent. Unusually, as you can see in the picture on the right, she is so comfortable she will happily extend her hops!

Hydrotherapy post-surgery total hip replacement – normally starts from 6-10 weeks post op

Suitable hydrotherapy treatment depends on the facilities and staff available. It is very important that post surgical dogs are handled carefully and are not placed in a hoist or asked to access a hydrotherapy pool via a steep or narrow ramp up or down. If either of these are suggested it would be better to avoid hydrotherapy treatment.

Post hip replacement it is important to have a minimum of two hydrotherapists with the patient in the pool – one to guide and control the dog, the other to prevent the dog abducting or adducting the affected limb. Extreme care is required on entry and exit to the hydrotherapy pool or water treadmill and there should be no risk of slipping, tripping or falling. A sling should be used under the abdomen for support. A hindquarter harness that the pelvic limbs go through should not be used as pressure could cause dislocation. There is a good argument for using a water treadmill as this is a more controlled environment and full support can be given – but again there should be enough hydrotherapists/members of staff available to achieve good gait and observation. One hydrotherapist is not enough for water treadmill treatment for these dogs.



Hydrotherapy post femoral head osteotomy – should start on fourteen days

- What was the reason for the FHO? – cost, total hip replacement not possible? – the hydrotherapists need to know and they also need to know how good or bad the contralateral hip is
- Hydrotherapy needs to start early – it is important to maintain maximum range of motion while scar tissue is forming and also to avoid contracture in surrounding soft tissues. Pain medication is ESSENTIAL to get good results and no hydrotherapy should be considered without this – often NSAIDs alone are not enough and tramadol or gabapentin may be required
- 3-5 hydrotherapy sessions a week to start – if funds are short it is far better to attend multiple sessions early to get the best results
- Ideal underwater treadmill candidates once partial weight bearing is achieved as we want to encourage weight bearing and as normal gait as possible in the circumstances

Hydrotherapy for cruciate ligament disease

Conservative management

Conservative management patients can be referred for hydrotherapy once the patient is over the acute phase of the injury. However these patients need careful handling in the water because of the strain put on the stifle joint when the limb is moved through the water. Instability in the joint can make swimming painful. Ideally these patients should go in a water treadmill and the hydrotherapist should give hands on support to the stifle. The aim of hydrotherapy would be to reduce pain and inflammation and to provide exercise to reduce muscle atrophy (due to reduced weight bearing) or to increase muscle bulk and strength to help stabilise the stifle.

For patients where surgery is not an option, for whatever reason, hydrotherapy can be useful and help to support the patient while fibrosis takes place and the secondary stifle stabilisers strengthen. However for other patients the benefit may well be short lived as partial cruciate tears often go on to complete rupture at a later date and surgery cannot then be avoided.

Post-operative hydrotherapy

- What surgery? Hydrotherapists need to know exactly what surgery as different hydrotherapy protocols apply depending on the surgery
- Stage of recovery? – date of surgery, normal recovery, any infection, any meniscal tears at the time or later?
- Other concerns – Obesity, age of patient and client compliance with the discharge instructions can all affect outcomes
- When to refer depends on which surgery – see the table on the following page

Comparison of hydrotherapy protocols post cruciate ligament repair

Extracapsular	TPLO/TTA/TTAR/TTO
Start hydrotherapy at approximately 2 weeks	Start date surgeon and surgery dependent
Continuing pain relief (PLEASE!)	Extreme caution first hydrotherapy session
Gradual build up over 8 weeks	Careful and controlled build up
8 weeks to 3 months more intensive hydrotherapy and strengthening	If starting at 8-12 weeks will have ++ muscle atrophy and loss of cardiovascular fitness

Patella luxation



Conservative management

Many dogs with mild patella luxation can be successfully managed using hydrotherapy, either pool or water treadmill. Increasing the strength of the stabilisers and engaging the quadriceps can be very effective. Because hydrotherapists are (or should be) hands on they can easily feel if the patella is luxating. If either or both patella luxate repeatedly during hydrotherapy it means that this will not be a treatment option and the patient will be referred back to the vet.

Post-operative recovery

- Trochlear groove surgery
- Tibial crest transposition
- Ridge stop

Start date for hydrotherapy will depend on which surgery or combinations of surgery have been used and the referring veterinary surgeons preference. Hydrotherapy aims are to reduce pain and inflammation and to strengthen all of the supporting soft tissues. Occasionally surgery is not successful and the patella continues to luxate and further surgery is required. Also, as the condition is often bilateral, hydrotherapy will be used to hopefully reduce recovery time so that surgery can take place on the opposite limb as soon as possible.

Spinal cases

A wide range of spinal/neurological cases are referred for hydrotherapy treatment including:

- Conservative management IVDD
- Post-operative recovery - IVDD
- Cervical IVDD/spondylomyelopathy – not suitable candidates for hydrotherapy unless had surgery
- Ischemia, fibrocartilagenous embolism (FCE)
- Degenerative myelopathy



IVD herniation

Conservative management hydrotherapy

- Conservative management initially means total cage rest and carry out for toileting.
- Analgesia and NSAIDs/steroids essential
- 4-6 weeks for healing to take place, fibrosis to begin to stabilise and associated inflammation and pain to reduce
- At 6-8 weeks if able to do so, these patients can start walking with support. But this is subject to the degree of discomfort present and their willingness to do so
- Therefore NO hydrotherapy for these patients until 8 weeks post injury

Post-operative hydrotherapy

- These patients can be seen much earlier than conservative management patients
- We want to achieve fast return to function so they may be referred to start at two weeks post-surgery
- Side flexion is often present due to weakness/neurological inability of paravertebral muscles to stabilise the spine and also depends on the surgical approach used
- During hydrotherapy close attention should be paid to supporting the spine in a neutral position – no side flexion, flexion or extension
- Underwater treadmill is the preferred hydrotherapy option – we have much more control over the dogs body position, can give more support (hands and/or harnesses) and the aim is to achieve walking

Ischemia/FCE

- Once over the acute phase and pain is resolved hydrotherapy should be started as soon as possible – these patients need URGENT REFERRAL to avoid secondary problems and to maintain existing function
- Is there a degree of uncertainty for ischemia/fce diagnosis? – ideally we would want to push these patients quite hard but this cannot be done if there is a possibility of a disc prolapse/extrusion and no diagnostics have taken place
- Experienced hydrotherapists are important to get the most out of hydrotherapy sessions – often these patients are young and energetic and ideal candidates for hydrotherapy as they are motivated to chase and play. It is then relatively easy to come up with games and exercises that target areas of neurological weakness.
- There should ideally be veterinary physiotherapist involvement – rehabilitation needs to be carefully planned to include home management, home exercise and physiotherapy plans in addition to hydrotherapy
- It is important to check the home management includes suitable bedding for a down patient, that necessary slings, harnesses and boots are provided and used, and that clients understand how vulnerable their dog is. They should not be left alone for long periods, will possibly need help with toileting and should be caged/restricted to prevent harm once they start to want to move around
- If possible hydrotherapy should be daily for at least the first week
- Then three times a week for next two weeks and further adjustment to the program made depending on progress
- Any activity that causes or increases high tone should be avoided

As function returns hydrotherapy treatment focusses on exercises that target remaining areas of weakness, ataxia or uncoordinated movement. Hydrotherapists will work on increasing core strength and dynamic stability using lots of motivation and game playing, it can be useful to include clients in these activities

Degenerative myelopathy

Degenerative myelopathy is an auto immune disease which leads to a loss of myelin sheath (protective insulation covering nerve fibres). Eventually axons (nerve fibres) are destroyed and the usual pattern is for ataxia, weakness, paralysis of hind limbs, loss of urinary and faecal control.



Pictured above – Ruby a 10 year old boxer who was diagnosed eighteen months ago with degenerative myelopathy. She has used an Eddie's Wheels cart for the last year and attends hydrotherapy weekly. A combination of water treadmill and hydrotherapy pool were initially used to keep her walking as long as possible. She has now deteriorated so that she cannot walk in the treadmill and so only swims in the pool. She remains happy, playful, motivated and extremely lively. She just loves her swimming - chasing and retrieving toys and interacting with the other dogs. In the pool she still has vigorous biped motion with both hindlimbs. She continues to go for one hour walks in her cart and keeping up with her is the usual problem!

DM dogs should be referred early – we want to keep these patients walking

- Hydrotherapy aims to maintain function and cardiovascular fitness for as long as possible
- Hydrotherapy is probably the most beneficial form of treatment available
- In early degenerative myelopathy water treadmill has proved extremely useful and is the method of hydrotherapy most often requested by referring neurologists
- Dogs that have insidious onset of DM and have suffered decreased mobility for some time will be more vulnerable to changes in exercise amounts (starting hydrotherapy) than dogs seen in earlier stages of DM
- Hydrotherapy may be the only exercise clients can do with their dogs
- Quality of life issues must be discussed

DM – other considerations for hydrotherapy treatment

- Wounds on hindlimb paws – close attention and client education necessary as bad scrapes and wounds can prevent hydrotherapy treatment
- Pressure sores in vulnerable areas – when the dog is wet it is easier to spot areas of reddening or small wounds appearing, particularly useful with long haired dogs. Areas of concern are hips, lateral stifles, hocks, elbows, paws
- Clients should be educated about the importance of suitable bedding and management at home to prevent pressure sores
- Urinary infections – these dogs are more at risk from urinary infection as they may not be able to fully empty their bladders or will toilet infrequently. Clients may also withhold water to prevent bedwetting. Again client education is important and if there are any concerns the dog should go to the vet for urine testing.
- Faecal incontinence – as the disease progresses this becomes a problem for hydrotherapy. The odd 'accident' can easily be dealt with but repeated defecation in the pool or water treadmill would mean that hydrotherapy would have to be stopped
- Hygiene considerations – trimming fur and frequent washing should be considered where there is urine leakage
- Ramps, harnesses, carts – hydrotherapists should have information/links/contacts available for clients so they can easily find the necessary equipment to help
- Lots of owner support and advice needed – our role is to support the owners with whatever choices they make about the care of their dog. Hydrotherapists should communicate any health or welfare concerns to the referring veterinary practice

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Understanding Orthopedic and Spinal Conditions, Level 3 Certificate in Hydrotherapy for Small Animals

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Geriatric Dogs – A Veterinary Point of View

Greyfriars, 2013

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Greyfriars - Clients and friends who kindly agreed to sharing photographs information about their dogs
www.greyfriarsrehab.co.uk