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**Who are Strides Veterinary Physiotherapy?**  
**What services do Strides offer?**  
**How can Strides assist your Veterinary Practice?**

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## **1.0 – About Strides Veterinary Physiotherapy**

Strides Veterinary Physiotherapy provides a mobile physiotherapy service to animal patients in and around Shropshire. SVP is run by Emily Culpeck (PgD Veterinary Physiotherapy) from her base in Craven Arms which has stabling for 10 horses, 32 acres of turnout and an all weather arena allowing horses to be taken in if more intensive physiotherapy is required. Services available include manual techniques, exercise prescription, electrotherapies and kinesio taping.

### **1.1 – About Emily**

Emily is a fully qualified and insured Veterinary Physiotherapist having gained her PgD at Harper Adams University. This was a 2-year course covering anatomy, physiology, disease as well as physiotherapy specific modules. Guest speakers also delivered lectures including some of the best orthopaedic Vets, remedial farriers and a saddle fitter. There is also extensive practical teaching and placements with NAVP and/or ACPAT Veterinary Physiotherapists.

Prior to this Emily studied a BSc (Hons) Equine Science, gained her BHS Stages 1-4 and has extensive experience working with horses. Equine jobs have included working as a groom for a top showjumper and as a yard manager at a livery and training yard. Working as a livery yard manager for the last 12 years as provided extensive practical experience managing and riding many different types of horse/pony. Also providing aftercare for injuries/ailments and working alongside vets, farriers and veterinary physiotherapists to help rehabilitate pelvic fractures, tendon/ligament injuries (SDFT, suspensory, sacroiliac, check), impinging dorsal spinous processes as well as wounds and other conditions.

As well being capable in practical situations Emily has also ridden many different horses not only to expand their education by breaking in, schooling or competing but has also ridden to rehabilitate injuries or weaknesses as required by the individual under veterinary care or as prescribed by a physiotherapist. This allows Emily to link what she is seeing as physio to how best to work the horse to achieve the best outcome and could even offer a remedial exercise service.

Emily aims to do a clinical MSc research project in 2017 to further her education as well as attending CPD days.

## **2.0 – Veterinary Physiotherapy**

Veterinary physiotherapy aims to identify and address movement issues, rehabilitate injuries, manage pain and restore function. Maintenance sessions enable prompt detection and treatment of subclinical issues to reduce the likelihood of problems arising in the future or delay the onset.

### **2.1 – Assessment**

Prior to visiting the animal, permission is gained from the patient's vet along with any medical history (see Fig 1). On arrival, the animal's history, current management, diet and any other relevant information is obtained from the owner (see Figs 2&3). The animal is then observed statically and dynamically with all findings recorded. If there are any concerns about soundness the animal will be referred back to the vet without any treatment. Following this the animal is palpated thoroughly. All the information gained from these sources are then used to formulate the most suitable treatment plan and any remedial exercise prescription. All findings are recorded in the forms shown in Figs 2&3, and copies sent to the owner and vet.

## Figure 1 – Consent Form

**Emily Culpeck** BSc (Hons) Equine Studies, PgD Veterinary Physiotherapy  
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### Veterinary Physiotherapy Consent Form

#### Owners Details

Name	
Address	
Telephone	

#### Patient Details

**Name:** \_\_\_\_\_ **Species:** Equine Canine Other: \_\_\_\_\_  
**Age:** \_\_\_\_\_ **Sex:** \_\_\_\_\_ **Breed:** \_\_\_\_\_  
**Referred for Physiotherapy for** (circle appropriate): Specific Problem Routine Check

#### Relevant Medical History (please complete or attach if applicable)

--

#### Veterinary Surgeon's Details

Name	
Practice Address	
Telephone	

As the referring vet, I give consent for Emily Culpeck (The Physio) to perform a physiotherapy assessment and carry out any treatment as appropriate on this animal. I understand that I am not responsible for any assessment or treatment carried out by The Physio and that the provision of any indemnity insurance is the responsibility of The Physio. I understand that the animal may be referred back to the practice by The Physiotherapist. If this form is not completed and returned it is assumed that permission is granted.

**Signed:** \_\_\_\_\_ **Printed:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Report Requested?** Y/N

Many Thanks, Emily Culpeck

## Figure 2 – Canine Assessment Form

### Veterinary Physiotherapy Report

Owner Details:



Referring Vet:

Animal Name:

Breed:

Age:

Sex:

History of current complaint:

Past medical history:

Diet:

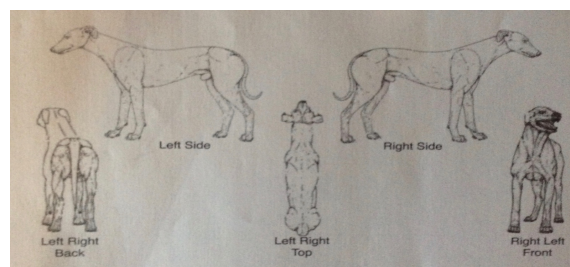
Current exercise:

Observations – Static:

Observations – Dynamic:

Palpation Assessment:

Instructions/Exercises:



## Figure 2 – Equine Assessment Form

### Veterinary Physiotherapy Report

Owner Details:



Referring Vet:

Animal Name:

Breed:

Age:

Sex:

History of current complaint:

Past medical history:

Teeth:

Diet:

Saddle:

Farrier:

Current exercise:

Observations – Static

Walk:

Trot:

Lunge L:

Lunge R:

Small Circles:

Proprioception/Neuro Exam:

Palpation Assessment

Spine:

Cx:

Tx:

L/Sx:

Limbs:

RF:

LF:

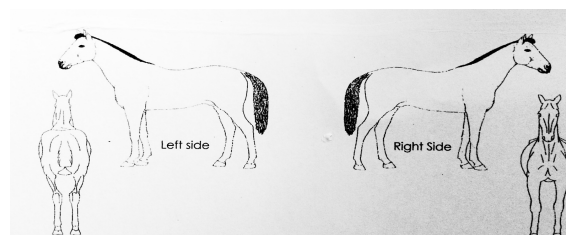
RH:

LH:

Problems:

Additional Comments:

Instructions/Exercises:



Here are details of some of the treatments available to animal patients treated by SVP:

## **2.2 – Massage**

Massage is the manipulation of skin, muscle and/or superficial soft tissue. Research indicates that massage affects physiological and (cellular and fascial components of) muscular systems and has been reported to increase range of motion (ROM) and stride length as well as reduce the activity of nociceptive pain receptors (Scott and Swenson, 2009). Human studies have found benefits including reduced muscle tension, soreness and spasm and greater flexibility alongside enhancing muscle blood flow and lactate clearance (Moraska *et al.*, 2008; Hinds *et al.*, 2004).

Joint ROM may be reduced due to a pathological condition or could be due to compensatory muscle tightness. Mechanical pressure applied to the area of tightness increases muscle compliance returning ROM to normal (Weeperpong *et al.*, 2005). Hypomobility due to immobilisation can cause changes in connective tissue as a consistent absence of tension leads to connective tissue atrophy, architectural disorganisation, increased fibrosis, adhesions and contractures (Scott and Swenson, 2009). Massage techniques can be used to increase ROM caused by shortened muscle or fascia. A study of 31 human patients found that 10 sessions of myofascial release reduced pain and increased ROM (up to 67%) (James *et al.*, 2009). A small equine study found that 20 minutes of cross fibre friction massage increased ROM and therefore stride length (Wilson, 2002) and a larger study of 38 horses found that therapeutic massage produced positive nociceptive changes from baseline suggesting positive pain relief (Sullivan, *et al.*, 2005).

## **2.3 – Passive Range of Motion (PROM) and Stretching**

PROM and stretching improve mobility, flexibility and prevent adhesions forming between soft tissues whilst improving tissue extensibility and realigning fibres (Salter *et al.*, 1984). PROM is extremely beneficial following surgery or injury when ROM can be limited permanently within 2 weeks. Heat and/or massage would be used/recommended prior to these exercises to aid comfort and improve extensibility.

## **2.4 – Transcutaneous Electrical Nerve Stimulation (TENS)**

TENS is electrical muscular stimulation that excites sensory nerves and stimulates either the pain gate mechanism and/or the opioid system depending on settings used (Watson, 2013). When used on the 2Hz setting long term TENS can also improve muscle function.

## **2.5 – Neuromuscular Electrical Stimulation (NMES)**

NMES is a muscle stimulation that fires motor nerves causing an involuntary muscle contraction and is used to increase or maintain muscle strength during rehabilitation. Human studies have proved successful using NMES to build muscle strength during athletic training and during periods of immobilisation following injury (Bax *et al.*, 2005). NMES is tolerated well by horses and dogs and has been successfully used to build strength following surgery, in neurological conditions and to improve general weaknesses (Bergh *et al.*, 2010).

## **2.6 – Pulsed Electromagnetic Field (PEMF) Therapy**

The main therapeutic use of PEMFs is for the enhancement of bone or tissue healing and pain control. Electromagnetism is generated by running an electric current through a coiled wire (electromagnetic induction).

PEMF stimulation is proposed to act on cell surface receptors, such as parathyroid hormone and transforming growth factor (TGF)- $\beta$ , and secondary messengers such as calcium or cyclic adenosine

monophosphate. PMEF may also have an effect on stabilising intracellular calcium stores by altering the conformation of calcium channel proteins that may ultimately reduce the production of free radicals by mitochondria and subsequent inflammation. There are studies to support PEMF use for numerous conditions including pain management, fracture healing and OA treatment (Millis and Levine, 2014).

## **2.7 – Phototherapy**

SVP has a blue light unit that can be used purely as a phototherapy unit or with PMEF alongside and a red light unit. Blue light therapy has the benefits of red light therapy but is also proposed to be antibacterial and antifungal.

There are many studies to support the use of phototherapy for pain relief, oedema reduction and soft tissue/wound healing (Fung *et al.*, 2003; Giuliani *et al.*, 2004). LEDs have similar effects to LASER and stimulate cellular responses. When used for wound healing it stimulates fibroblast development and may affect collagen production to repair tissues. It may also promote angiogenesis and improve the rate of wound healing. It is proposed that light therapy may also have anti-inflammatory effects for superficial ailments (Millis and Saunders, 2014) and activate the opiodergic and serotonic systems (Erthal *et al.*, 2013).

## **2.8 – Kinesio Taping**

Kinesio taping can be used to treat numerous issues including acute and chronic pain, muscle imbalances, circulatory/lymphatic conditions, tendon/ligament injuries, adhesions/scars and pathological movement patterns. The specially designed tape that is safe for use on horses optimises the function of many different tissues and physiological systems. Depending on how the tape is applied it can have many uses and works via the sensory-motor cortex providing pain relief. It can also be applied to lift the hair and the skin increasing circulation and lymphatic drainage or reducing muscle spasm. Another use for kinesio tape is to either enhance muscle function or inhibit it - these techniques are useful to address muscle imbalances. There are many different techniques for many different conditions. Emily has done a 2-day course in equine taping techniques and is on the list of practitioners. It is an area that interests her and may be investigated further as her MSc research project.

## **3.0 – Clinical Applications**

Here are a couple of examples of how physiotherapy can help specific conditions obviously no case is the same and there are many options for each condition.

### **3.1 – Hip Dysplasia**

Physiotherapy will depend on the individual case and will take into consideration the size, age, weight of the dog and treatment prescribed by the vet (NSAIDs, surgery etc). Another large consideration is the situation of the owner for example an elderly owner may struggle with certain aspects of rehabilitation.

Depending on the symptoms, diagnosis and treatment recommended by the vet physiotherapy can help with conservative management or post surgery. Aims of physiotherapy would include pain management as a priority followed by strengthening the musculature of the pelvic limbs to not only support the hip joint but also to reduce the risk of compensatory injuries occurring from overloading the forelimbs.

For this type of condition PEMF would be beneficial for pain relief to bilateral pelvic limbs. Phototherapy may also be beneficial to reduce inflammation and muscle spasm. Massage therapy would be used to treat the whole animal including any compensations seen in the lumbar region and through the thoracic limbs. PROM exercises and stretching could be left with the owner (once demonstrated) to maintain ROM longer

term. Cryotherapy to both hip joints after exercise would also be recommended to the owner to assist with pain management. There would be a large emphasis on remedial exercise depending on stage of development, OA and lameness levels which could include slow lead walking, weight shifting or even hydrotherapy if appropriate. Each case would be monitored throughout treatment with open communication between the owner and vet maintained throughout treatment.

### **3.2 – Dorsal Spinous Process Impingement**

Again, physiotherapy would depend on the individual case, severity and recommended veterinary treatment.

Physiotherapy aims would be to manage pain, muscle spasm and improve core strength to try and open up the space between the DSPs alongside the chosen veterinary treatment. Any compensatory muscle soreness would be addressed, posture improved alongside gait re-education.

TENS could be left with the owner to apply to the area of soreness to alleviate pain in the area and restore muscle function long term (the machine would be set and use demonstrated). PMEF could be used during treatment to reduce spasm and provide pain relief. Massage therapy would be used to treat the whole horse to relieve secondary muscle tightness. Kinesio tape could be applied to address posture and enhance core strength exercises a fascia technique could also be used to provide localised pain relief. Individual stretches could be prescribed to help address any muscle tightness caused by gait abnormalities alongside remedial exercise which would be aimed at building topline and core strength. Depending on the stage of treatment this may involve groundwork, poles or ridden work.

### **4.0 – Summary**

These are just some examples of physiotherapy methods, we are happy to treat other animals and assist in the pain management and/or rehabilitation of numerous orthopaedic or neurological conditions as well as managing the older patient or enhancing performance. Physiotherapy can be successfully used to reduce the levels of NSAIDs or delay the onset of requirement in cases of OA. It can also be utilised alongside joint medication to enhance the effects by treating gait compensations and re-educating gait. Examples of other conditions that can benefit from physiotherapy include:

- muscular dysfunction – strains, tears, atrophy
- osteoarthritis
- neck/back pain
- sacroiliac dysfunction/pain
- tendon/ligament injury
- neurological conditions
- hip/elbow dysplasia
- cruciate damage
- patella luxation
- spinal/disc conditions
- fractures
- post-operative or conservative management of diagnosed conditions

This list is not exhaustive so if you have any other conditions that you think may benefit please contact me.

### **5.0 – Contact Details**

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