

ECVSMR Sample questions 2022

Part 1 MCQ:

What describes the Vertical Impulse ?

It represents the area under the force curve

It defines the force related to the body mass

It defines the force related to the body weight

It is a basic kinematic parameter

The relaxed collagen fibres of tendon demonstrate a wavy configuration, called crimping, that disappears when tendons are stretched. In which phase of the stress-strain curve of the tendon does this happen?

In the toe region of the curve

In the linear elastic deformation region of the curve

In the plastic deformation region of the curve

When the ultimate failure point of the curve is exceeded

During exercise, what percentage of the chemical energy from stored substrates is released as heat?

70-80%

60-70%

50-60%

80-90%

What is the most important method of heat loss for exercising dogs?

Evaporation

Radiation

Conduction

Convection

A radial extracorporeal shockwave device, or a ballistic generator is an alternative to focused extracorporeal shockwaves. Compared to focused shockwaves, what are the differences in pressure profile and energy delivered to the tissues with radial shockwaves?

Radial pressure waves apply energy to a wider circumference with decreased tissue penetration

Radial pressure waves have higher energy and a faster rise time

The negative component and positive components have different magnitudes

The energy applied increases proportionally to the square of the distance from the applicator head

Hydrotherapy equipment allows the regulation of water temperature. What is the cardiovascular response to exercise in cold water?

Heart rate decreases and stroke volume increases

Heart rate decreases and stroke volume decreases

Heart rate increases and stroke volume increases

Heart rate increases and stroke volume decreases

Pressure algometry measures the mechanical nociceptive threshold (MNT) in animals. Most commonly it is employed over skeletal muscle. What does this value express?

A semi-objective value to quantify muscle tenderness

An objective value to quantify muscle tenderness

A semi-objective value to measure muscle fatigue

An objective value to measure muscle fatigue

Guttural pouch mycosis most commonly involves which cranial nerves?

IX and X

X and XI

VIII and X

X and XII

Part 2 cases:

Case example small animal:

One of your clients asks for a consultation. He would like to purchase a Labrador from a Field-Trial line and use it later in sport and/or hunting. The puppy comes from a very successful line, but even though the puppies come from HD-free parents, he would like an early assessment of the hip joints.

1. Explain to the owner ...

- a. the advantage of the PennHIP method (1 point)
- b. the value on which the risk assessment is based (0.5 point)
- c. name the limit value at which a hip joint is considered as very tight (0.5 point)
 - a. A major advantage of the PennHIP method is the ability to assess the “risk” of a young dog developing the osteoarthritis of canine hip dysplasia (1) later in life.
 - b. The distraction index (DI) (0.5) is used to estimate that risk.
 - c. Dogs with a high distraction index (looser hip joints) will show radiographic (and clinical) signs earlier than those with a lower distraction index (tighter hip joints). A DI < 0,3 (0.5) is considered as a “very tight hip”.

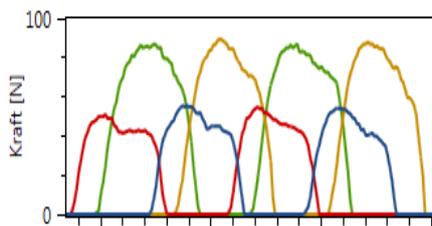
2. Now the owner wants to know whether he can take additional preventive measures to keep his future dog's musculoskeletal system healthy for as long as possible. Beside radiographic examination of the dog, further preventive strategies can be used to minimize the risk for osteoarthritis of canine hip dysplasia. One of the best investigated preventive measures is caloric restriction, early in life. Explain the owner the benefits of keeping osteoarthritis-susceptible dogs lean for life as investigated in a life span study in Labrador Retrievers with respect to:

- A. Occurrence of osteoarthritis of hip dysplasia (1 point)
 - B. median life span (1 point)
 - C. pain management (1 point)
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- A. Osteoarthritis of hip dysplasia was delayed in onset and reduced in severity (1) in lean dogs
 - B. the median life span of lean dogs was 1.8 years longer (1)
 - C. lean dogs required pain management 3 years later (1) compared with overweight dogs

3. The owner now wants to know from you what effects wearing dummies has on weight distribution. Below you can see a video that was recorded in the context of a study in which this was investigated. In this study the dogs wore dummies with different weights while being guided over a pressure plate. In the video shown here, the dog walks over the pressure plate without a dummy. In addition the calculated ground reaction force curves are shown.

- A. Describe which 2 important ground reaction force parameters can be derived from the curves (commonly used in studies). (1 point)

- B. In order to compare parameters between dogs of different weights, which method can be used? (1 point)



- A. Peak vertical force (0.5) – the highest force value and Vertical Impulse (0.5) – a function of force and time
- B. Normalization to body mass, or total force, or calculation of symmetry indices (one must be named, 1)

4. a. With respect to peak vertical force and vertical impulse, what was the main effect of carrying a weight? (1 point)

b. Based on that – explain the owner in easy words the effect of carrying weights on the body mass distribution (1 point)

- a. The PFz and IFz significantly increased in forelimbs and decreased in hindlimbs with increasing dummy weight(1)
- b. The load on the front legs is not only increased by transferring the weight of the dummy or game to the front legs, the dog also tilts forward, which further increases the load on the front legs (1).

5. Finally, the future Labrador owner has one more question. He has heard of a disease called "limber tail", which occurs frequently in working dogs. Since he wants to spare his dog this disease, he has decided not to use the dog for water work.

Based on the results of Pugh et al. (2017), how useful do you think this idea is? (1 point)

This decision cannot safely prevent the appearance of a limber tail, because even dogs that have not been swimming can develop this disease. (1)

Case example equine

A horse is presented with an acute, severe lameness after sustaining a horizontal, penetrating wound at the plantarodistal aspect of the metatarsus. What kind of lesion is typically associated with the abnormalities observed at the walk? (Video) (1 point)



Complete transection of the superficial (0.5 point) and deep digital flexor tendon (0.5 point)

What would be the three most important things to do when you are confronted with this case in the field, prior to referral of the horse? (3 points)

Wound care (stop bleeding, clip, clean, bandage) (0.5 point)

Immobilisation (plantar splint, kimzey/monkey splint, or half-limb cast) (1 point if any of these are given)

Medication: broad-spectrum antimicrobial (0.5 point), anti-inflammatory treatment (0.5 point) and tetanus prophylaxis (0.5 point)

There was no synovial penetration, and you succeeded to perform surgical repair of the lacerated tendon using a three-loop pulley technique. What would be your protocol for the anesthetic recovery of this horse which can be performed in most modern equine clinics? Be specific. (2 points)

Full-limb cast (1 point)(NOT: half-limb cast) and rope-assisted recovery (head and tail rope)(1 point)

No points for pool recovery (as this is not widely available)

List 4 important possible complications after this surgical repair. (2 points)

Adhesions

Cast sores

Rupture peroneus tertius tendon/hip luxation

Necrotic tendinopathy

Exuberant granulation tissue

Flexural deformity

Contralateral limb laminitis

Failure of the repair

Infection

(0.5 points per correct answer)

Describe the 3 main parts and their duration (in weeks/months) in the rehabilitation programme of this injury (starting immediately after surgery until 6 months later). (2 points)

- 1) Minimally 6-8 weeks cast immobilisation (maximally 12 weeks) (1 point)(no points if less than 6 weeks of cast, or if longer than 12 weeks)
- 2) Additional box rest for 2-3 months (0.5 point)
- 3) Box rest with ascending hand-walking schedule 2-3 months (0.5 point)