



## AUSTRALIAN AND NEW ZEALAND COLLEGE OF VETERINARY SCIENTISTS

### MEMBERSHIP GUIDELINES

#### *Small Animal Surgery*

These Membership Guidelines must be read in conjunction with the *Membership Candidate Handbook*.

#### **ELIGIBILITY**

Refer to the *Membership Candidate Handbook*.

#### **OBJECTIVES**

To demonstrate that the candidate has sufficient knowledge of the common surgical diseases of the dog and cat, and the experience and ability, to appropriately advise animal owners and veterinary colleagues about the current treatment options for these surgical diseases.

Membership of the ANZCVS Small Animal Surgery Chapter is an official recognition of a veterinary surgeon's knowledge and experience in Small Animal Surgery. Membership is an indication to the profession and the general public of an advanced practitioner, representing a middle-tier of knowledge, competence and experience in the field of Small Animal Surgery.

#### **LEARNING OUTCOMES**

Quality surgical care requires the logical application of knowledge drawn from a broad base across body systems and disciplines, as well as sound skills in analysis and interpretation of clinical information.

Members of the Chapter are expected to be able to provide sound advice to owners and veterinary colleagues about surgical diseases and their recognition, diagnosis, decision making, management, and prognosis.

Sufficient knowledge and understanding of the complementary disciplines of internal medicine, ECC, clinical pathology, pharmacology, anaesthesia, and diagnostic imaging are also required to diagnose and treat surgical diseases.

This examination is limited to the species of dogs and cats.

#### **Knowledge Levels:**

Sound knowledge – candidates must know all of the principles of the topic including some of the finer detail, and be able to identify areas where opinions may diverge. A middle level of knowledge.

Basic knowledge – candidate must know the main points of the topic

### **Skill Levels**

Sound expertise – the candidate must be able to perform the technique with a moderate degree of skill, and have moderate experience in its application. A middle level of proficiency.

Basic expertise – the candidate must be able to perform the technique competently in uncomplicated circumstances

### **Definitions:**

- Skill is the ability to do something well, especially with practice and experience. Skill refers to the ability to perform a task or achieve a goal in a reliable and proficient manner.
- Knowledge is the familiarity with something, which might include facts (propositional knowledge), skills (procedural knowledge), or objects (acquaintance knowledge). Knowledge refers to a justified, true belief that is based on evidence or reason.
- Understanding is the ability to grasp the meaning of something or to comprehend a concept. Understanding refers to the ability to connect pieces of knowledge together to form a coherent whole. This means that understanding goes beyond simply knowing facts; it also involves being able to see the relationships between those facts and to see how they fit into a larger picture.
- Expertise refers to the knowledge, skills, and abilities that allow reliable and accurate judgments and decisions to be made.

The guidelines are divided into two parts as follows.

### **Part one of the guidelines:**

Part one of these guidelines will cover expected candidate knowledge and expertise regarding the principles of surgical practice applicable to all aspects of surgical care.

### **Part Two of the Guidelines**

Part two will be divided into sections describing the expected knowledge and expertise for each area of practice (eg , urinary system, fractures).

### **Each section in part two will be further divided into the following sections:**

#### **- Surgical principles specific to this area of practice**

This part will define expected candidate knowledge and expertise regarding any principles of surgical practice specific to that area of practice, in addition to those defined in Part One.

#### **- Surgical diseases/conditions**

This part will list surgical diseases/conditions in which candidates will have knowledge and expertise.

For each listed condition, candidates will be expected to demonstrate knowledge and understanding of:

- The aetiology, pathogenesis and pathophysiology
- Macroscopic and microscopic anatomy relevant to the disease/condition
- Normal physiology of the affected body system where relevant to the disease/condition
- Diagnosis of the disease/condition including differential diagnoses
- Treatment options (both surgical and non-surgical)
- Prognosis (including that with different treatment options applied)

Candidates should be able to identify typical signalment, history, examination, laboratory testing, and imaging findings, as well as likely differential diagnoses, for surgical diseases/conditions.

Emphasis is placed on a logical approach in formulating a diagnostic workup, providing sound owner counselling, and creating a therapeutic plan for given potentially surgical case presentations.

#### - **Surgical procedures**

This part will list surgical procedures of which candidates will have knowledge and understanding.

For each listed procedure candidates will be expected to demonstrate knowledge and understanding of:

- The macroscopic and microscopic anatomy relevant to the procedure, including surgical approaches.
- Indications and contraindications for the procedure,
- Surgical technique and any described variations or alternatives
- Potential complications and their minimisation
- Perioperative care including patient stabilisation, anaesthesia, analgesia, and postoperative care
- Prognosis following the procedure

Logical decision making around selection of an appropriate procedure for a given case presentation, including comparison of alternative treatment options and their prognoses is expected.

It is important to note that candidates are NOT expected to be performing all listed procedures in their daily practice.

The following description of topics and areas serves as a guide to the expected level of knowledge and skills.

### **PART ONE: SURGICAL BIOLOGY, PRINCIPLES OF SURGICAL PRACTICE AND PERIOPERATIVE CARE OF THE DOG AND CAT**

1. The candidate will have a **sound** knowledge of **The inflammatory Response**

2. **Fluid Therapy**

The candidate will have **sound** knowledge and expertise in

- 2.1. Perioperative Fluid therapy including preoperative, intraoperative and postoperative fluid therapy of patients with surgical conditions.

The candidate will have **basic** knowledge and expertise in

- 2.2. Blood transfusion and blood products
- 2.3. Electrolyte abnormalities and their correction
- 2.4. Acid base anomalies and their correction

3. **Shock**

The candidate will have a **sound** knowledge and expertise in

- 3.1. Definition and classifications of shock
- 3.2. Clinical stages of shock and their recognition
- 3.3. Clinical findings in hypovolaemic, distributive, cardiogenic and hypoxic shock

- 3.4. Management of hypovolaemic, distributive and hypoxic shock as applied to surgical disease presentations

The candidate will have a **basic** knowledge of

- 3.5. Pathophysiology of shock

#### 4. **Bleeding and Haemostasis**

The candidate will have **sound** knowledge and expertise in

- 4.1. Causes of surgical bleeding
- 4.2. Recognition of surgical diseases and comorbidities that may lead to altered haemostasis
- 4.3. Clinical and laboratory assessment of haemostasis in the surgical patient
- 4.4. Operative and postoperative bleeding- diagnosis and management
- 4.5. Haemostatic techniques in small animal surgery

The candidate will have **basic** knowledge and expertise in

- 4.6. Primary and secondary haemostasis
- 4.7. Haemostatic agents in small animal surgery

#### 5. **Nutritional needs of surgical patients**

The candidate will have **sound** knowledge and expertise in

- 5.1. Definition of malnutrition
- 5.2. Criteria for provision of nutritional support in perioperative patients
- 5.3. Calculation of nutritional needs for perioperative patients
- 5.4. The applications, techniques for placement and appropriate selection in case scenarios of the different types of feeding tubes available.

#### 6. **Wound healing**

The candidate will have a **sound** knowledge of

- 6.1. Phases of wound healing
- 6.2. Healing of the specific tissues of the following body systems
  - 6.2.1. Skin
  - 6.2.2. Gastrointestinal system
  - 6.2.3. Musculoskeletal system
  - 6.2.4. Urinary system
- 6.3. Local and systemic factors affecting wound healing
- 6.4. Species differences in wound healing

#### 7. **Surgical site infections and antimicrobial use**

The candidate will have **sound** knowledge and expertise in:

- 7.1. Definition and classifications of surgical site infection
- 7.2. Risk factors for surgical site infection
- 7.3. Likely pathogens in different surgical sites
- 7.4. Surgical wound classification
- 7.5. Appropriate perioperative antimicrobial usage in Australia and New Zealand
- 7.6. Clinical findings in superficial and deep surgical site infections
- 7.7. Management of superficial and deep surgical site infections
- 7.8. Responsible antimicrobial use in surgical patients

## 8. Diagnostic imaging

The candidate will have **sound** knowledge and expertise in

### 8.1. Radiography

8.1.1. Description and interpretation of radiographs as applicable to the diagnosis of surgical diseases/conditions and perioperative care

8.1.2. Limitations of radiography in the diagnosis of surgical diseases

The candidate will have a **basic** knowledge of

8.2. Applications and limitations of ultrasound in the diagnosis of surgical diseases and conditions

8.3. Applications and limitations of CT in the diagnosis of surgical diseases and conditions

8.4. Applications and limitations of MRI in the diagnosis of surgical diseases and conditions

## 9. Clinical pathology.

The candidate will have **sound** knowledge and expertise in the application and interpretation of the following laboratory testing modalities, as applicable to the diagnosis of surgical diseases/conditions, and to perioperative patient care.

9.1. Blood biochemistry and haematology

9.2. Fluid analysis - effusions and joint fluid

9.3. Urinalysis including sediment analysis

9.4. Bacteriology - culture and sensitivity

The candidate will have **basic** knowledge and expertise in the application and interpretation of the following laboratory testing modalities, as applicable to the diagnosis of surgical diseases/conditions, and to perioperative patient care.

9.5. Cytology

9.6. Histology

9.7. Electrolyte and blood gas/acid base abnormalities

9.8. CSF analysis

9.9. Serology

9.10. PCR testing

9.11. Fungal culture

9.12. Prostatic wash samples

## 10. Emergency and Critical Care

The candidate will have a **sound** knowledge and expertise in the following aspects of emergency and critical care as they apply to assessing, stabilising and treating patients with potentially surgical diseases/conditions.

10.1. Assessment and triage of the emergent patient

10.2. Recognition, assessment, treatment and monitoring of perfusion abnormalities

10.3. Pain recognition and management in the emergent patient

10.4. Indications and techniques for thoracocentesis and abdominocentesis

10.5. Recognition, assessment, treatment and monitoring of sepsis

10.6. Recognition, assessment and treatment of the patient presenting in respiratory distress

The candidate will have **basic** knowledge and expertise in the following aspects of emergency and critical care as they apply to assessing, stabilising and treating patients with potentially surgical diseases/conditions.

10.7. Fluid therapy of the emergent patient

10.8. ECG's: recognition and appropriate management of commonly encountered cardiac arrhythmias

10.9. Recognition, assessment and treatment of increased intracranial pressure

**10.10.** Cardiopulmonary Resuscitation

**11. Anaesthesia and perioperative analgesia**

The candidate will have **sound** knowledge and expertise in the following aspects of anaesthesia and analgesia as they apply to surgical patients

- 11.1. Pre-anaesthesia assessment and stabilisation of the surgical patient to optimise anaesthetic safety
- 11.2. Prevention, recognition and treatment of perioperative pain
- 11.3. Formulation of an appropriate multimodal perioperative analgesic protocol for a given patient signalment and surgical procedure, including consideration of comorbidities.
- 11.4. Selection of an appropriate locoregional anaesthesia technique for a given surgical procedure
- 11.5. Patient assessment for acute pain, including basic knowledge of the use of validated acute pain scoring tools in both species.

The candidate will have **basic** knowledge and expertise in the following aspects of anaesthesia and analgesia as they apply to surgical patients

- 11.6. Pharmacology of the anaesthetic and analgesic drugs commonly used in Australia and New Zealand
- 11.7. Patient monitoring under general anaesthesia
- 11.8. Anaesthesia for patients with pre-existing conditions and/or comorbidities.
- 11.9. Pathophysiology of pain
- 11.10. Formulation of an appropriate anaesthetic protocol for a given patient and surgical procedure.

**12. Preparation of the patient and personnel for surgery**

The candidate will have **sound** knowledge and expertise in

- 12.1. General principles of asepsis
- 12.2. Preparation of the surgical patient
- 12.3. Preparation of the sterile personnel

**13. Principles of sterilisation of surgical equipment**

The candidate will have a **basic** knowledge of

- 13.1. Methods of sterilisation
- 13.2. Sterilisation indicators
- 13.3. Storage of sterilised items

**14. Suture materials, tissue staplers, and closure methods**

The candidate will have **sound** knowledge and expertise in

- 14.1. Characteristics and appropriate selection of commonly used suture materials.
- 14.2. Characteristics and appropriate selection of common suture patterns

The candidate will have **basic** knowledge and expertise in

- 14.3. Principles and applications of surgical stapling devices

**15. Instruments and tissue handling techniques**

The candidate will have a **sound** knowledge and expertise in

- 15.1. Halsted's principles and their application
- 15.2. Correct nomenclature and use of commonly used surgical instruments

The candidate will have **basic** knowledge and expertise in

- 15.3. Principles and application of electrosurgery in small animal surgery

## 16. Bandages and drains

The candidate will have a **sound** knowledge and expertise in

- 16.1. The types of wound dressings commonly available in Australia and New Zealand and justified appropriate selection for a given wound scenario.
- 16.2. Bandaging indications, types, application and care
- 16.3. Surgical drains including those in the abdomen and thorax as well as superficial tissues
  - 16.3.1. Indications for placement of a surgical drain
  - 16.3.2. Types of surgical drains and mechanisms of drainage
  - 16.3.3. Surgical drain placement and care, including indications for removal.
  - 16.3.4. Complications of surgical drains

## 17. Biopsy Principles

The candidate will have a **sound** knowledge and expertise in

- 17.1. General tissue biopsy types and techniques
- 17.2. Selection and description of appropriate biopsy methods for superficial masses, skin, abdominal, thoracic and retroperitoneal organs, lymph nodes and bone.
- 17.3. Definitions of incisional and excisional biopsies, and understanding of which of these is indicated in different tumour case scenarios.
- 17.4. Application of appropriate biopsy location and technique, related to future surgical plan, following appropriate oncological surgery principles.

## 18. Oncologic surgery principles

The candidate will have a **sound** knowledge and expertise in

- 18.1. A knowledge of the tumour types that occur in each body area/organ, sufficient to be able to advise owners or veterinary colleagues on differential diagnoses and prognoses, and to plan a diagnostic, staging, and surgical approach to a suspected tumour encountered in this body area/organ system.

*NOTE: Where this knowledge is expected, it will be listed in section 2 under each body system/area of practice. eg. "prostatic neoplasia", "splenic mass".*

- 18.2. For each of the common tumour types, candidates will have knowledge and understanding of
  - 18.2.1. Clinical findings
  - 18.2.2. Patterns of local and metastatic behaviour
  - 18.2.3. Predictors of tumour behaviour such as mitotic index, tumour grade and other biomarkers
  - 18.2.4. Preoperative patient assessment and staging
  - 18.2.5. Appropriate surgical margins
  - 18.2.6. Perioperative care
  - 18.2.7. Prognosis following surgical management (with and without recommended adjuvant therapies) and for patients where no management is undertaken.

*NOTE "Common tumour types" will be listed under each body system/area of practice within part 2.*

- 18.3. Principles of Oncologic surgical techniques including tissue handling and management and planning of biopsy tracts.
- 18.4. Handling of oncologic samples for pathology
- 18.5. Surgical margin types: intralesional, marginal, wide and radical
- 18.6. The Tumour, Node Metastasis (TMN) system of tumour staging and its application to different tumour case scenarios.

The candidate will have a **basic** knowledge of

- 18.7. Indications for adjuvant and neoadjuvant therapies (chemotherapy, radiation therapy) in the management of commonly encountered surgical neoplastic conditions, and the effect these treatments have on prognosis.
- 18.8. The definition of the following oncological outcome measures: Median Survival Time, Disease Free Survival, Progression Free Survival and Stable Disease.

## PART TWO: SPECIFIC AREAS OF SURGICAL PRACTICE IN THE DOG AND CAT

### 19. Neurology

#### 19.1. Principles of surgical neurology

The candidate will have **sound** knowledge and expertise in

- 19.1.1. Neurologic examination and neuroanatomic diagnosis
- 19.1.2. Advantages and limitations of different neuroimaging modalities
- 19.1.3. Neurologic causes of lameness and their differentiation from orthopaedic causes

The candidate will have **basic** knowledge and expertise in

- 19.1.4. Response of neurologic tissues to injury
- 19.1.5. Nursing care and rehabilitation of the neurologic patient

#### 19.2. Neurology Conditions

The candidate will have a **sound** knowledge of

- 19.2.1. Intervertebral Disc Disease
- 19.2.2. Degenerative Lumbosacral Stenosis
- 19.2.3. Cervical Spondylomyelopathy
- 19.2.4. Spinal Fractures and Luxations
- 19.2.5. Laryngeal Paralysis
- 19.2.6. Nerve sheath neoplasms

The candidate will have a **basic** knowledge of

- 19.2.7. Atlantoaxial Subluxation
- 19.2.8. Neoplasms of the vertebrae and spinal cord
- 19.2.9. Congenital Spinal Malformations
- 19.2.10. Syringomyelia
- 19.2.11. Medical differentials for neurologic presentations.
  - 19.2.11.1. fibrocartilaginous embolism
  - 19.2.11.2. Infectious meningoencephalomyelitis
  - 19.2.11.3. Degenerative myelopathy
  - 19.2.11.4. Meningoencephalitis of Unknown Origin (encompassing granulomatous meningoencephalitis)
  - 19.2.11.5. steroid responsive meningitis-arteritis
  - 19.2.11.6. Discospondylitis
  - 19.2.11.7. Polyneuropathies

#### 19.3. Neurology procedures

The candidate will have a **basic** knowledge of

- 19.3.1. Hemilaminectomy for thoracolumbar intervertebral disc disease
- 19.3.2. Techniques for sampling of CSF
- 19.3.3. Myelography techniques in radiography and CT and their interpretation



## 20. Orthopaedics: General Orthopaedic Principles

The candidate will have **sound** knowledge and expertise in

- 20.1. Systematic and thorough orthopaedic examination including lameness localisation.
- 20.2. Perioperative assessment and management of the orthopaedic trauma patient.
- 20.3. Formulation of an appropriate differential diagnosis list and diagnostic plan for a given lameness scenario following lameness isolation.
- 20.4. Imaging modalities for the musculoskeletal system, including appropriate selection for different conditions and case scenarios.
- 20.5. Bone structure and mechanical properties of bone
  - 20.5.1. Structural properties of bone
  - 20.5.2. The functional units of bone - periosteal, endocortical, cancellous, intracortical
- 20.6. Arthroscopic surgery: advantages, indications and limitations
- 20.7. Autogenous bone grafts
  - 20.7.1. Types of autogenous bone grafts
  - 20.7.2. Indications and contraindications for bone grafts
  - 20.7.3. Biology of bone grafts: osteogenesis, osteoinduction, osteoconduction, osteopromotion
  - 20.7.4. Harvesting and clinical application of autogenous corticocancellous bone grafts
- 20.8. Principles of arthrodesis
- 20.9. Osteomyelitis and Implant associated infection
  - 20.9.1. Aetiopathogenesis of post traumatic osteomyelitis including implant associated osteomyelitis
  - 20.9.2. Clinical findings and diagnosis of osteomyelitis and implant associated infection
    - 20.9.2.1. Treatment of osteomyelitis and implant associated infection

Candidates should have a **basic** knowledge of

- 20.9.3. The concepts of force, moments, stress, strain and load/deformation in bone biomechanics
- 20.9.4. Endochondral and intramembraneous ossification in skeletal development
- 20.9.5. Composition and properties of tendons, ligaments, articular cartilage, muscle and bone
- 20.9.6. Synthetic bone graft substitutes and bone allografts
- 20.9.7. Rehabilitation of the orthopaedic patient

## 21. Orthopaedics: Fractures and Fracture management

### 21.1. Principles of fracture management

The candidate will have **sound** knowledge and expertise in

- 21.1.1. Fracture biomechanics: forces acting on fractured bones
- 21.1.2. Fracture biology: Strain theory and bone healing
- 21.1.3. The processes of primary and secondary bone healing, including factors influencing which of these occurs in a healing fracture.
- 21.1.4. Understanding of the various clinical, biological and mechanical factors that influence fracture healing.
- 21.1.5. Fracture reduction planning
- 21.1.6. Understanding of the concepts of open anatomic reconstruction versus biological osteosynthesis, their advantages and disadvantages and application to clinical case scenarios.
- 21.1.7. Principles of Minimally Invasive Osteosynthesis (MIO)
- 21.1.8. Delayed Union, Non-union and malunions
  - 21.1.8.1. Classifications of delayed union and non-union
  - 21.1.8.2. General causes of delayed unions and non-unions
  - 21.1.8.3. Principles of treatment and prevention of delayed unions, non-unions and malunions
- 21.1.9. Principles common to management of all intra-articular fractures
- 21.1.10. Pathophysiology, classifications and principles of management of physeal fractures
- 21.1.11. Principles of open fracture management
  - 21.1.11.1. Classification of open fractures (Gustillo-Anderson)
  - 21.1.11.2. Initial management of open fractures

- 21.1.11.3. Identification of definitive surgical treatment appropriate for open fractures
- 21.1.11.4. Complications and prognosis specific to open fractures

21.1.12. Recognition of conditions contributing to pathological fractures

21.1.13. Imaging of fractures

- 21.1.13.1. Radiography in fracture imaging
- 21.1.13.2. Indications for CT imaging in fracture management planning
- 21.1.13.3. Radiologic assessment and systematic description of fractures of the appendicular and axial skeleton
- 21.1.13.4. Radiologic assessment of healing fractures

21.2. Specific Fracture Conditions

Candidates should have **sound** knowledge and expertise in

21.2.1. Fractures of the limbs

- 21.2.1.1. Application of mechanical, biological and clinical factor assessment to a given fracture case scenario, in order to create a sound fracture management plan including surgical approach, reduction plan, fixation plan and postoperative care.
- 21.2.1.2. Description and evaluation of fracture fixation decision making and technique in postoperative fracture radiographs.

21.2.2. Fractures of the Pelvis

- 21.2.2.1. Indications for surgical versus non-surgical management of pelvic fractures.
- 21.2.2.2. Selection and description of appropriate fixation methods for sacroiliac fracture/luxations and ilial body fractures.
- 21.2.2.3. Assessment for concurrent neurologic, rectal or urinary trauma in pelvic fracture patients

21.2.3. Fractures and luxations of the spine

- 21.2.3.1. Neurologic assessment of patients with injuries of the vertebral column.
- 21.2.3.2. Indications for surgical versus non-surgical management of spinal fractures and luxations
- 21.2.3.3. Preoperative management of patients with spinal fractures/luxations
- 21.2.3.4. Prognosis assessment for patients with spinal fractures/ luxations

21.2.4. Mandibular and maxillofacial fractures

- 21.2.4.1. Knowledge of forces acting on mandibular and maxillary fractures
- 21.2.4.2. Selection and description of appropriate fixation methods for simple mandibular and maxillofacial fractures

21.2.5. Signalment specific fracture conditions

- 21.2.5.1. Toy breed radius ulna fractures
- 21.2.5.2. Humeral intracondylar fissure
- 21.2.5.3. Feline capital physal fractures/epiphyseal dysplasia

21.3. Fracture management procedures

Candidates should have **sound** knowledge in:

21.3.1. External Coaptation in fracture management

- 21.3.1.1. Appropriate selection of appropriate fracture cases for external coaptation
- 21.3.1.2. Complications of external coaptation, their prevention and management

21.3.2. Surgical Fracture fixation

- 21.3.2.1. Biomechanics, principles of application, indications and contraindications and postoperative care for:
  - 21.3.2.1.1. Intramedullary pins

- 21.3.2.1.2. Orthopaedic wire; cerclage, tension band
- 21.3.2.1.3. Pin and tension band construct
- 21.3.2.1.4. Linear external Skeletal Fixation
- 21.3.2.1.5. Interlocking Nails
- 21.3.2.1.6. Screws
  - 21.3.2.1.6.1. Locking, cortical and cancellous screws
  - 21.3.2.1.6.2. Application of screws as lag, position and plate screws
- 21.3.2.1.7. Plates
  - 21.3.2.1.7.1. Dynamic Compression Plates
  - 21.3.2.1.7.2. Locking Plates
  - 21.3.2.1.7.3. Application of plates in bridging, neutralisation, compression and buttress modes
  - 21.3.2.1.7.4. Comparison of locking and non-locking plate mechanics, application, modes of failure, advantages and disadvantages.
  - 21.3.2.1.7.5. Plate-rod fracture fixation
- 21.3.2.2. Principles of combining different implant types within a fracture fixation scenario.

Candidates should have **basic** knowledge and expertise in

- 21.3.3. Biomechanics, principles of application, indications and contraindications and postoperative care for:
  - 21.3.3.1. Hybrid and ring external fixators
  - 21.3.3.2. Use of Polymethyl Methacrylate (PMMA) in fracture fixation constructs
- 21.3.4. Fixation methods described for spinal fractures

## 22. Orthopaedics: Tendon and Ligament Disorders and Arthrology

### 22.1. Principles of Tendon and Ligament Disorders and Arthrology

Candidates should have a **sound** knowledge and expertise in

- 22.1.1. Technique for examination of each of the joints of the appendicular skeleton for the presence of effusion and joint stability.
- 22.1.2. Pathophysiology and diagnosis of osteochondrosis and osteochondritis dissecans (OCD)
- 22.1.3. Differential diagnoses for pain localising to each of the joints of the appendicular skeleton in patients of varying signalment.
- 22.1.4. Cartilage lesion classification (Modified Outerbridge Score)
- 22.1.5. Phenotypic breeding screening methods for heritable orthopaedic disease and their applications and limitations.

### 22.2. Tendon and Ligament Conditions and Arthrology Conditions

Candidates should have a **sound** knowledge of

- 22.2.1. Inflammatory arthropathies
  - 22.2.1.1. Immune mediated polyarthropathy
  - 22.2.1.2. Septic arthritis
- 22.2.2. Osteoarthritis
- 22.2.3. The shoulder
  - 22.2.3.1. Osteochondrosis/ OCD
  - 22.2.3.2. Biceps brachii tendonopathy
  - 22.2.3.3. Supraspinatus tendonopathy
  - 22.2.3.4. Medial shoulder instability/medial shoulder syndrome
  - 22.2.3.5. Traumatic shoulder luxation
- 22.2.4. The elbow
  - 22.2.4.1. Elbow dysplasia
    - 22.2.4.1.1. Ununited anconeal process

- 22.2.4.1.2. Medial coronoid process disease
    - 22.2.4.1.3. Humeral Condylar OCD
    - 22.2.4.1.4. Medial compartment disease
  - 22.2.4.2. Traumatic luxation
  - 22.2.4.3. Elbow collateral ligament injury
- 22.2.5. The carpus
  - 22.2.5.1. Carpal hyperextension injury
  - 22.2.5.2. Shearing injury
  - 22.2.5.3. Radial/ulnar collateral ligament injury
  - 22.2.5.4. Carpal laxity syndrome
  - 22.2.5.5. Traumatic luxation
- 22.2.6. The metacarpophalangeal and metatarsophalangeal joints
  - 22.2.6.1. Sesamoid diseases
- 22.2.7. The hip
  - 22.2.7.1. Traumatic luxation
  - 22.2.7.2. Hip dysplasia
- 22.2.8. The stifle
  - 22.2.8.1. Medial patella luxation
  - 22.2.8.2. Lateral Patella luxation
  - 22.2.8.3. Femoral deformity associated with patella luxation
  - 22.2.8.4. Patellar tendon rupture/laceration
  - 22.2.8.5. Stifle OCD
  - 22.2.8.6. Acute Traumatic Cranial Cruciate Ligament Rupture
  - 22.2.8.7. Progressive Degeneration of the Cranial Cruciate Ligament
  - 22.2.8.8. Excessive tibial plateau angle in patients with cranial cruciate ligament disease
  - 22.2.8.9. Meniscal injury
  - 22.2.8.10. Multiligamentous injury of the stifle
  - 22.2.8.11. Traumatic luxation/subluxation
  - 22.2.8.12. Caudal cruciate ligament rupture
- 22.2.9. The hock
  - 22.2.9.1. Talar OCD
  - 22.2.9.2. Injury to the medial and/or lateral collateral ligaments (including short and long collaterals in the dog)
  - 22.2.9.3. Tarsal shearing injury
  - 22.2.9.4. Luxation and subluxation of the talocrural joint
  - 22.2.9.5. Luxation or subluxation of the proximal or distal intertarsal joint or tarsometatarsal joints with instability in each of the dorsal, medial, lateral and plantar directions.
  - 22.2.9.6. Disruption of the common calcanean tendon
    - 22.2.9.6.1. Acute complete rupture/laceration
    - 22.2.9.6.2. Partial disruption
  - 22.2.9.7. Luxation of the superficial digital flexor tendon

Candidates should have a **basic** knowledge of

- 22.2.10. Congenital elbow luxation
- 22.2.11. Congenital shoulder luxation
- 22.2.12. Glenoid dysplasia
- 22.2.13. Avulsion of the long digital extensor tendon
- 22.2.14. Tenosynovitis of the adductor pollicis longus tendon of insertion
- 22.2.15. Canine flexor enthesopathy of the elbow
- 22.2.16. Feline medial epicondylitis

### 22.3. Tendon and Ligament Conditions and Arthrology Procedures

Candidates should have **sound** knowledge in

- 22.3.1. Techniques described for tendon and ligament repair including materials and suture patterns.

- 22.3.2.Synoviocentesis of the shoulder, elbow, carpus, hip, stifle and talocrural joints.
- 22.3.3.Patient assessment and medical management of osteoarthritis.
- 22.3.4.Osteochondroplasty for osteochondritis dissecans of the humeral head, humeral condyle, femoral condyle and talus
- 22.3.5.Management of caudal cruciate ligament rupture
- 22.3.6.Closed reduction, joint stability assessment and closed reduction techniques for traumatic luxation of the shoulder, elbow, and hip joints.
- 22.3.7.Joint stability assessment techniques for the stifle, carpus and hock joints.
- 22.3.8.Techniques for management of complete rupture of the medial and/or lateral collateral ligaments of the elbow, stifle, shoulder and talocrural joints.
- 22.3.9.Techniques for surgical management of biceps brachii tendinopathy
- 22.3.10.Surgery for elbow dysplasia
  - 22.3.10.1.Proximal dynamic bioblique ulnar osteotomy
  - 22.3.10.2.Techniques available for management of fragmentation of the medial coronoid process
  - 22.3.10.3.Techniques for management of Ununited Anconeal Process
- 22.3.11.Short Ulnar Syndrome
  - 22.3.11.1.Distal ulnar osteotomy
  - 22.3.11.2.Principles of radial corrective osteotomy including options for fixation techniques
- 22.3.12.Pancarpal Arthrodesis
- 22.3.13.Hip luxation
  - 22.3.13.1.Hip toggle
  - 22.3.13.2.Dorsal capsulorrhaphy/prosthetic capsule technique
  - 22.3.13.3.Femoral Head and Neck Excision Arthroplasty
- 22.3.14.Surgery for hip dysplasia
  - 22.3.14.1.Juvenile Pubic Symphysiodesis
- 22.3.15.Surgery for cranial cruciate ligament disease
  - 22.3.15.1.Extracapsular suture
  - 22.3.15.2.Tibial Plateau Levelling Osteotomy
  - 22.3.15.3.Tibial Tuberosity Advancement
  - 22.3.15.4.Cranial Closing Wedge Osteotomy
  - 22.3.15.5.Techniques available for dogs with concurrent cranial cruciate ligament disease and patellar luxation
  - 22.3.15.6.Techniques for management of dogs with excessive tibial plateau angle and cranial cruciate ligament disease.
- 22.3.16.Surgery of the meniscus
  - 22.3.16.1.Techniques for assessment for meniscal pathology
  - 22.3.16.2.Treatment of meniscus pathology
  - 22.3.16.3.Meniscal release
- 22.3.17.Surgery for management of patellar luxations
  - 22.3.17.1.Surgical decision making in medial and lateral patellar luxation
  - 22.3.17.2.Tibial Tuberosity Transposition
  - 22.3.17.3.Wedge and block trochleoplasty
  - 22.3.17.4.Indications for femoral corrective osteotomy
  - 22.3.17.5.Soft tissue techniques for patellar luxation
  - 22.3.17.6.Techniques for management of patellar luxation in juvenile patients
- 22.3.18.Surgical techniques for management of multiligamentous injury of the stifle
- 22.3.19.Repair of luxation of the SDFT
- 22.3.20.Pantarsal and partial tarsal arthrodesis

Candidates should have a **basic** knowledge of

- 22.3.21.Arthroscopy
- 22.3.22.Cartilage resurfacing techniques for the management of osteochondritis dissecans
- 22.3.23.Techniques for the surgical management of medial shoulder instability
- 22.3.24.Excision arthroplasty of the shoulder
- 22.3.25.Surgery for elbow dysplasia in the dog
  - 22.3.25.1.Proximal Abducting Ulnar Osteotomy
  - 22.3.25.2.Sliding Humeral Osteotomy
  - 22.3.25.3.Elbow replacement procedures

- 22.3.26. Femoral corrective osteotomy in patella luxation
- 22.3.27. Partial Carpal Arthrodesis
- 22.3.28. Surgery for hip dysplasia
  - 22.3.28.1. Total hip replacement
  - 22.3.28.2. Double Pelvic Osteotomy
  - 22.3.28.3. Hip denervation
- 22.3.29. De vita pinning, iliofemoral suture, greater trochanter transposition and transarticular pinning for hip luxation
- 22.3.30. Surgery for cranial cruciate ligament disease
  - 22.3.30.1. Triple tibial osteotomy
  - 22.3.30.2. CORA based levelling osteotomy
  - 22.3.30.3. Transphyseal screw in juvenile patients
  - 22.3.30.4. Intra-articular reconstruction
  - 22.3.30.5. Avulsion fracture of the cranial cruciate ligament
- 22.3.31. Total knee replacement in the dog
- 22.3.32. Arthrodesis of the stifle, elbow and shoulder

#### 22.4. Miscellaneous Orthopaedic conditions and procedures

Candidates should have a **sound** knowledge of

- 22.4.1. Osteosarcoma
- 22.4.2. Slipped Femoral Capital Epiphysis (non-traumatic)
- 22.4.3. Legg-Calve-Perthes disease/avascular necrosis of the femoral head
- 22.4.4. Neoplasms of the digits

Candidates should have a **basic** knowledge of

- 22.4.5. Synovial sarcoma
- 22.4.6. Appendicular chondrosarcoma
- 22.4.7. Haematogenous osteomyelitis
- 22.4.8. Hypertrophic osteodystrophy/metaphyseal osteopathy
- 22.4.9. Panosteitis
- 22.4.10. Craniomandibular Osteopathy
- 22.4.11. Puppy Carpal Laxity Syndrome
- 22.4.12. Swimmer Syndrome
- 22.4.13. Hypertrophic Osteopathy
- 22.4.14. Multiple Cartilagenous Exostoses
- 22.4.15. Disseminated Idiopathic Skeletal Hyperostosis
- 22.4.16. Bone cyst
- 22.4.17. Polymyopathies
- 22.4.18. Iliopsoas muscle injury
- 22.4.19. Gracillis muscle injury/contracture
- 22.4.20. Infraspinatus muscle injury/contracture
- 22.4.21. Angular limb deformity (other than short ulnar syndrome)
  - 22.4.21.1. Evaluation of normal limb alignment and joint orientation
  - 22.4.21.2. Diagnosis, assessment and imaging of angular limb deformities
  - 22.4.21.3. Principles of angular limb deformity correction
- 22.4.22. Limb Sparing surgery for musculoskeletal neoplasia

### 23. Soft Tissue Surgery: The Integument

#### 23.1. Principles of surgery of the integument

Candidate will have a **sound** knowledge and expertise in:

- 23.1.1. Wound classification including mechanism of injury, duration since wounding, degree of contamination and how this relates to diagnostics, surgical decision making and healing characteristics.
- 23.1.2. The principles of tension, shear and viscoelasticity as they relate to surgery of the skin.
- 23.1.3. Immediate and ongoing open wound management including:
  - 23.1.3.1. Lavage

- 23.1.3.2. Debridement options including surgical, mechanical, autolytic, biologic and enzymatic.
- 23.1.3.3. Wound dressings and topical agents
- 23.1.3.4. The types of wound closure and their indications and application including: primary, delayed primary, secondary and second intention healing.
- 23.1.4. The principles of decision making in skin reconstruction that take into account wound, patient, owner and surgeon factors.
- 23.1.5. The function of the lymphatic system

The candidate will have a **basic** knowledge and expertise in

- 23.1.6. Negative pressure wound therapy.

## 23.2. Conditions of the integument

Candidate will have a **sound** knowledge and expertise in:

- 23.2.1. Burns
- 23.2.2. Mast cell tumours
- 23.2.3. Soft tissue sarcomas
- 23.2.4. Lipoma (including infiltrative and intermuscular)
- 23.2.5. Cutaneous haemangiosarcoma
- 23.2.6. Squamous cell carcinoma
- 23.2.7. Mammary tumours
- 23.2.8. Perianal gland tumours

Candidate will have a **Basic** knowledge of:

- 23.2.9. Lymphadenitis
- 23.2.10. Lymphoedema
- 23.2.11. Other tumours of the skin and adnexa
- 23.2.12. Feline injection site sarcomas
- 23.2.13. Skin fold dermatitis and interdigital pyoderma
- 23.2.14. Acquired sinus tracts

## 23.3. Procedures for the skin and adnexa

The candidate will have a **Sound** knowledge in

- 23.3.1. Methods of wound creation
- 23.3.2. Primary wound closure
- 23.3.3. Techniques for relieving tension
  - 23.3.3.1. Local undermining and advancement
  - 23.3.3.2. Tension relieving sutures
  - 23.3.3.3. Skin stretching techniques
  - 23.3.3.4. Relaxing incisions
- 23.3.4. Subdermal plexus flaps
- 23.3.5. Axial pattern flaps
- 23.3.6. Mastectomy for mammary neoplasia
- 23.3.7. Skin grafts including the process of engraftment

The candidate will have a **Basic** knowledge of

- 23.3.8. Myocutaneous flaps

## 24. Soft Tissue: The Abdomen

### 24.1. Spleen

#### 24.1.1. Conditions of the spleen

Candidates should have **sound** knowledge and expertise in

- 24.1.1.1. Splenic mass/localised splenomegaly.
- 24.1.1.2. Splenic haemangiosarcoma
- 24.1.1.3. Splenic trauma
- 24.1.1.4. Splenic torsion

Candidates should have **basic** knowledge and expertise in

- 24.1.1.5. Generalised splenomegaly

#### 24.1.2. Procedures of the spleen

Candidates should have **sound** knowledge in

- 24.1.2.1. Splenectomy including alternative vascular ligation options

Candidates should have **basic** knowledge in

- 24.1.2.2. Partial splenectomy

### 24.2. Abdominal Wall Reconstruction and Hernias

#### 24.2.1. Principles of surgery of abdominal wall reconstruction and hernias

Candidates should have **sound** knowledge and expertise in

- 24.2.1.1. Location, description and classification of abdominal wall hernias
- 24.2.1.2. Pathophysiology of abdominal wall hernias including incarceration, strangulation and space occupying effects

#### 24.2.2. Conditions of the abdominal wall

Candidates should have **sound** knowledge and expertise in

- 24.2.2.1. Inguinal hernia
- 24.2.2.2. Ventral/umbilical hernia
- 24.2.2.3. Caudal hernia
- 24.2.2.4. Traumatic and incisional abdominal wall hernias

Candidates should have **basic** knowledge and expertise in

- 24.2.2.5. Femoral hernias

#### 24.2.3. Procedures of the abdominal wall

Candidates should have **sound** knowledge in



**24.2.3.1.**Repair of inguinal, ventral, caudal, traumatic and incisional abdominal wall hernias

Candidates should have **basic** knowledge in

**24.2.3.2.**Use of autologous and non-autologous methods for the reconstruction of large abdominal wall defects.

### **24.3. Diaphragmatic Hernias**

#### **24.3.1.**Diaphragmatic Hernia Conditions

Candidates should have **sound** knowledge in

**24.3.1.1.**Traumatic diaphragmatic hernia

**24.3.1.2.**Congenital peritoneopericardial diaphragmatic hernia

**24.3.1.3.**Hiatal Hernia

Candidates should have **basic** knowledge in

**24.3.1.4.**Congenital pleuroperitoneal hernia

#### **24.3.2.**Diaphragmatic Hernia Procedures

Candidates should have **sound** knowledge in

**24.3.2.1.**Reduction and suture closure of diaphragmatic hernias

Candidates should have **basic** knowledge in

**24.3.2.2.**Options for closure of diaphragmatic hernias that are unable to be sutured

**24.3.2.3.**surgical management of hiatal hernia

### **24.4. Peritoneum and Retroperitoneum**

#### **24.4.1.**Principles of surgery of the Peritoneum and Retroperitoneum

Candidates should have **sound** knowledge and expertise in

**24.4.1.1.**Peritoneal physiology

**24.4.1.2.**The classification of peritonitis

**24.4.1.3.**Adhesion prevention in peritoneal surgery

#### **24.4.2.**Conditions of the Peritoneum and Retroperitoneum

Candidates should have **sound** knowledge and expertise in

24.4.2.1.Septic peritonitis

24.4.2.2.Bile peritonitis

- 24.4.2.3. Penetrating injuries to the peritoneal cavity
- 24.4.2.4. Uroperitoneum
- 24.4.2.5. Haemoperitoneum
- 24.4.2.6. Pneumoperitoneum

Candidates should have **basic** knowledge and expertise in

- 24.4.2.7. Chyloperitoneum
- 24.4.2.8. Peritoneal and retroperitoneal abscess
- 24.4.2.9. Other types of peritonitis

#### 24.4.3. Procedures of the Peritoneum and Retroperitoneum

Candidates should have **sound** knowledge in

- 24.4.3.1. Systematic exploratory laparotomy

## 25. Soft Tissue: The Gastrointestinal System

### 25.1. Principles of Gastrointestinal Surgery

Candidates should have **sound** knowledge and expertise in

- 25.1.1. Physiologic consequences of removing sections of small intestine, large intestine or rectum, both in general and as applicable to specific surgical procedures.
- 25.1.2. The diagnosis, prevention of and management of ileus as a consequence of gastrointestinal disease or surgery.
- 25.1.3. Assessment of intestinal viability
- 25.1.4. The diagnosis of intestinal obstruction

Candidates should have **basic** knowledge and expertise in

- 25.1.5. The normal physiology of the organs of the gastrointestinal system and the system as a whole.
- 25.1.6. The physiology of swallowing/deglutition
- 25.1.7. The use of stapling devices in gastrointestinal surgery
- 25.1.8. Applications and indications for laparoscopy in gastrointestinal surgery
- 25.1.9. The pharmacology of antiemetics, antacids and prokinetics commonly used in the surgical patient

### 25.2. Gastrointestinal Conditions

#### 25.2.1. Oral Cavity and Salivary Glands

Candidates should have **sound** knowledge and expertise in

- 25.2.1.1. Neoplastic lesions of the oral cavity including the lips and tonsils: malignant melanoma, squamous cell carcinoma, fibrosarcoma, osteosarcoma, and acanthomatous ameloblastoma

- 25.2.1.2. Penetrating injuries of the oral cavity and pharynx
- 25.2.1.3. Sialoceles

Candidates should have **basic** knowledge and expertise in

- 25.2.1.4. Dysphagia
- 25.2.1.5. Disorders of the salivary glands: sialadenosis, sialadenitis, metaplasia, sialoliths, neoplasia

## 25.2.2. Oesophagus and Stomach

Candidates should have **sound** knowledge and expertise in

- 25.2.2.1. Mechanical, functional and inflammatory causes of oesophageal dysfunction
- 25.2.2.2. Oesophagitis
- 25.2.2.3. Oesophageal Foreign Body
- 25.2.2.4. Oesophageal trauma (laceration, thermal injury)
- 25.2.2.5. Hiatal hernia
- 25.2.2.6. Gastric Foreign Body
- 25.2.2.7. Gastric perforation
- 25.2.2.8. Gastric dilation and volvulus

- 25.2.2.9. Gastric neoplasia and infiltrative disease

Candidates should have **basic** knowledge and expertise in

- 25.2.2.10. Cricopharyngeal dysphagia
- 25.2.2.11. Oesophageal neoplasia
- 25.2.2.12. Oesophageal Stricture
- 25.2.2.13. Gastroesophageal intussusception
- 25.2.2.14. Gastric ulceration
- 25.2.2.15. Vascular Ring Anomalies
- 25.2.2.16. Hypertrophic pyloric gastropathy
- 25.2.2.17. Infectious gastric disease

## 25.2.3. Small and Large Intestine

Candidates should have **sound** knowledge and expertise in

- 25.2.3.1. Foreign bodies
- 25.2.3.2. Intussusception
- 25.2.3.3. Incarceration and strangulation
- 25.2.3.4. Intestinal trauma
- 25.2.3.5. Secondary and idiopathic megacolon
- 25.2.3.6. Small and large intestinal neoplasia
- 25.2.3.7. Rectal Prolapse and Intussusception
- 25.2.3.8. Tumours of the rectum, anus
- 25.2.3.9. Rectal perforation
- 25.2.3.10. Rectal strictures

Candidates should have **basic** knowledge and expertise in

- 25.2.3.11. Mesenteric, colonic and cecocolic volvulus
- 25.2.3.12. Pseudo-obstruction and ileus

- 25.2.3.13. Infarction
- 25.2.3.14. Congenital malformations of the intestinal tract
- 25.2.3.15. Diseases of the caecum

#### 25.2.4. Anus and Perineum

Candidates should have **sound** knowledge and expertise in

- 25.2.4.1. Anal sacculitis and anal sac abscessation
- 25.2.4.2. Apocrine gland adenocarcinoma of the anal sac
- 25.2.4.3. Perianal adenoma
- 25.2.4.4. Perineal hernia

Candidates should have **basic** knowledge and expertise in

- 25.2.4.5. Congenital abnormalities of the anus
- 25.2.4.6. Perianal fistula

#### 25.2.5. Liver, Biliary System and Pancreas

Candidates should have **sound** knowledge and expertise in

- 25.2.5.1. Gallbladder mucocele
- 25.2.5.2. Extrahepatic Biliary Obstruction
- 25.2.5.3. Hepatobiliary neoplasia
- 25.2.5.4. Congenital extrahepatic portosystemic shunts

Candidates should have **basic** knowledge and expertise in

- 25.2.5.5. Hepatic abscess
- 25.2.5.6. Cholelithiasis
- 25.2.5.7. Congenital intrahepatic portosystemic shunts
- 25.2.5.8. Pancreatic pseudocysts
- 25.2.5.9. Pancreatitis
- 25.2.5.10. Pancreatic abscess
- 25.2.5.11. Pancreatic Exocrine tumours
- 25.2.5.12. Insulinoma
- 25.2.5.13. Gastrinoma

### 25.3. Gastrointestinal Surgical Procedures

#### 25.3.1. Oral Cavity and Salivary Glands

Candidates should have **sound** knowledge in

- 25.3.1.1. Reconstruction of the lips
- 25.3.1.2. Mandibular and sublingual sialoadenectomy
- 25.3.1.3. Mandibulectomies
- 25.3.1.4. Maxillectomies

Candidates should have **basic** knowledge in

- 25.3.1.5. Lymphadenectomy
- 25.3.1.6. Zygomatic and parotid gland sialoadenectomy
- 25.3.1.7. Salivary gland marsupialisation

#### **25.3.1.8.Tonsillectomy**

#### **25.3.2.Oesophagus and Stomach**

Candidates should have **sound** knowledge in

##### **25.3.2.1.Oesophagotomy**

##### **25.3.2.2.Gastrotomy**

##### **25.3.2.3.Partial gastrectomy**

##### **25.3.2.4.Gastropexy**

##### **25.3.2.5.Gastrostomy**

Candidates should have **basic** knowledge in

##### **25.3.2.6.Oesophageal substitution**

##### **25.3.2.7.Pyloromyotomy and pyloroplasty**

##### **25.3.2.8.Gastroduodenal anastomosis (Billroth 1)**

##### **25.3.2.9.Oesophageal patching**

##### **25.3.2.10.Oesophageal resection and anastomosis**

#### **25.3.3.Small and Large Intestine**

Candidates should have **sound** knowledge in

##### **25.3.3.1.Omentalisation and serosal patching of the intestine**

##### **25.3.3.2.Enterotomy**

##### **25.3.3.3.Intestinal resection and anastomosis**

##### **25.3.3.4.Colopexy**

Candidates should have **basic** knowledge in

##### **25.3.3.5.Enteroplication**

##### **25.3.3.6.Colostomy**

##### **25.3.3.7.Colorectal amputation and pullthrough**

#### **25.3.4.Rectum and Perineum**

Candidates should have **sound** knowledge in

##### **25.3.4.1.Anal saccullectomy including closed and open techniques**

##### **25.3.4.2.Internal Obturator muscle transposition for perineal herniorhaphy**

Candidates should have **basic** knowledge in

##### **25.3.4.3.Surgical options for faecal incontinence**

##### **25.3.4.4.Other techniques for perineal hernia repair: traditional herniorhaphy, superficial gluteal muscle transposition, semitendonosis muscle transposition, prosthetics.**

##### **25.3.4.5.Organopexies in perineal hernia management**

### 25.3.5.Liver, Biliary System and Pancreas

Candidates should have **sound** knowledge in

- 25.3.5.1.Liver biopsy
- 25.3.5.2.Partial and complete hepatic lobectomy
- 25.3.5.3.Choledochal catheterisation and lavage
- 25.3.5.4.Cholecystectomy
- 25.3.5.5.Cholecystotomy
- 25.3.5.6.Pancreatic biopsy

Candidates should have **basic** knowledge in

- 25.3.5.7.Pringle manoeuvre
- 25.3.5.8.The various methods of extrahepatic portosystemic shunt attenuation
- 25.3.5.9.Cholecystoenterostomy
- 25.3.5.10.Choledochal stenting
- 25.3.5.11.Cholecystostomy tube
- 25.3.5.12.Choledochotomy
- 25.3.5.13.The methods of intrahepatic portosystemic shunt attenuation
- 25.3.5.14.Pancreaticoduodenectomy
- 25.3.5.15.Partial pancreatectomy
- 25.3.5.16.Pancreatic drainage

## 26. The Respiratory System

### 26.1. The Nasal Planum, Nasal Cavity and Sinuses

#### 26.1.1.Conditions of the nasal planum, nasal cavity and sinuses

Candidates should have **sound** knowledge and expertise in

- 26.1.1.1.Feline nasal planum squamous cell carcinoma
- 26.1.1.2.Feline nasopharyngeal polyps

Candidates should have **basic** knowledge and expertise in

- 26.1.1.3.Canine sinonasal aspergillosis
- 26.1.1.4.Canine nasal adenocarcinoma

- 26.1.1.5.Choanal atresia
- 26.1.1.6.Nasopharyngeal stenosis
- 26.1.1.7.Nasal foreign bodies

#### 26.1.2.Procedures of the nasal planum, nasal cavity and sinuses

Candidates should have **sound** knowledge in

- 26.1.2.1.Nasal planum resection for feline nasal planum squamous cell carcinoma

Candidates should have **basic** knowledge in

- 26.1.2.2.Non-invasive catheter nasal infusion techniques for treatment of canine nasal aspergillosis
- 26.1.2.3.Rhinotomy and sinusotomy techniques

## **26.2. The Palate**

### **26.2.1. Conditions of the palate**

Candidates should have **sound** knowledge and expertise in

#### **26.2.1.1. Congenital and acquired palatal defects**

### **26.2.2. Procedures of the palate**

Candidates should have **basic** knowledge in

#### **26.2.2.1. Closure methods including flap types available for congenital and acquired defects of the soft and hard palates.**

## **26.3. The Larynx**

### **26.3.1. Principles of surgery of the larynx**

Candidates should have **sound** knowledge and expertise in

#### **26.3.1.1. Performing and describing effective anaesthetised airway exam for laryngeal assessment**

### **26.3.2. Conditions of the larynx**

Candidates should have **sound** knowledge and expertise in

#### **26.3.2.1. Acquired laryngeal paralysis**

#### **26.3.2.2. Laryngeal collapse**

Candidates should have **basic** knowledge and expertise in

#### **26.3.2.3. Laryngeal mass**

### **26.3.3. Procedures of the larynx**

Candidates should have **sound** knowledge in

#### **26.3.3.1. Arytenoid lateralisation**

Candidates should have **basic** knowledge in

#### **26.3.3.2. Partial and total laryngectomy**

## **26.4. Trachea and bronchi**

### **26.4.1. Conditions of the trachea and bronchi**

Candidates should have **sound** knowledge and expertise in

#### **26.4.1.1. Tracheal collapse**

#### **26.4.1.2. Tracheal rupture**

Candidates should have **basic** knowledge and expertise in

- 26.4.1.3.Tracheal neoplasia/mass
- 26.4.1.4.Tracheobronchial foreign bodies
- 26.4.1.5.Bronchial collapse

**26.4.2.Procedures of the trachea and bronchi**

Candidates should have a **sound** knowledge in

- 26.4.2.1.Temporary and permanent tracheostomy
- 26.4.2.2.Tracheal rupture

Candidates should have **basic** knowledge in

- 26.4.2.3.Tracheal resection and anastomosis
- 26.4.2.4.Extraluminal tracheal prosthetics
- 26.4.2.5.Intraluminal tracheal stent

**26.5. Lungs**

**26.5.1.Principles of surgery of the lungs**

Candidates should have **basic** knowledge and expertise in

- 26.5.1.1.Pulmonary physiology: ventilation, gas transport by blood, gas exchange and hypoxemia.

**26.5.2.Conditions of the lungs**

Candidates should have **sound** knowledge and expertise in

- 26.5.2.1.Consolidated lung lobe/abscess
- 26.5.2.2.Lung laceration

Candidates should have **basic** knowledge and expertise in

- 26.5.2.3.Pulmonary cyst, bullae and blebs
- 26.5.2.4.Lung lobe torsion
- 26.5.2.5.Primary and secondary pulmonary neoplasia

**26.5.3.Procedures of the lungs**

Candidates should have a **sound** knowledge in

- 26.5.3.1.Partial lung lobectomy
- 26.5.3.2.Total lung lobectomy

Candidates should have **basic** knowledge in



### **26.5.3.3. Pneumonectomy**

## **26.6. Brachycephalic Obstructive Airway Syndrome**

### **26.6.1. Principles of surgery for Brachycephalic Obstructive Airway Syndrome (BOAS)**

Candidates should have **sound** knowledge and expertise in

- 26.6.1.1.** Specific anatomy and abnormalities found BOAS patients
- 26.6.1.2.** Pathophysiology of BOAS and the secondary implications (both airway and gastrointestinal implications)
- 26.6.1.3.** Perioperative assessment, concerns and considerations specific to patients affected by BOAS
- 26.6.1.4.** Management of the BOAS patient presenting in acute respiratory distress

### **26.6.2. Conditions of BOAS**

Candidates should have **sound** knowledge and expertise in

- 26.6.2.1.** Elongated and thickened soft palate (overlong soft palate)
- 26.6.2.2.** Stenotic nares
- 26.6.2.3.** Laryngeal collapse
- 26.6.2.4.** Everted laryngeal sacculae

Candidates should have **basic** knowledge and expertise in

- 26.6.2.5.** Aberrant turbinates
- 26.6.2.6.** Gastrointestinal abnormalities in patients with BOAS
- 26.6.2.7.** Tracheal hypoplasia
- 26.6.2.8.** Tonsillar eversion

### **26.6.3. Procedures for the treatment of BOAS**

Candidates should have a **sound** knowledge in

- 26.6.3.1.** Staphylectomy
- 26.6.3.2.** Palatoplasty
- 26.6.3.3.** Alarplasty
- 26.6.3.4.** Laryngeal sacculotomy

Candidates should have **basic** knowledge in

- 26.6.3.5.** Laser assisted turbinectomy
- 26.6.3.6.** Tonsillectomy

## **27. Thorax**

### **27.1. Thoracic Wall**

#### **27.1.1. Principles of surgery of the Thoracic Wall**

Candidates should have **sound** knowledge and expertise in

**27.1.1.1.** Selection of appropriate thoracic approaches for different surgical conditions

**27.1.2.** Conditions of the Thoracic Wall

Candidates should have **sound** knowledge and expertise in

**27.1.2.1.** Pectus excavatum

**27.1.2.2.** Thoracic wall trauma

Candidates should have **basic** knowledge and expertise in

**27.1.2.3.** Thoracic wall neoplasia

**27.1.2.4.** Thoracic wall Infection

**27.1.3.** Procedures of the Thoracic Wall

Candidates should have a **sound** knowledge in

**27.1.3.1.** Intercostal thoracotomy

**27.1.3.2.** Medial sternotomy

**27.1.3.3.** Thoracostomy tube placement

Candidates should have **basic** knowledge in

**27.1.3.4.** Xiphoid resection thoracotomy

**27.1.3.5.** Trans-Sternal thoracotomy

**27.1.3.6.** Trans-diaphragmatic thoracotomy

**27.1.3.7.** Paracostal approach to the thorax

**27.1.3.8.** Thoracic wall reconstruction

**27.2. Thoracic Cavity**

**27.2.1.** Principles of surgery of the Thoracic Cavity

Candidates should have **sound** knowledge and expertise in

**27.2.1.1.** Types of pleural effusions

**27.2.1.2.** Clinical signs of intrapleural disease

**27.2.1.3.** Diagnostic imaging of the patient with suspected pleural disease

**27.2.2.** Conditions of the Thoracic Cavity

Candidates should have **sound** knowledge and expertise in

**27.2.2.1.** Trauma to the thoracic cavity

**27.2.2.2.** Haemothorax

**27.2.2.3.** Pneumothorax

**27.2.2.4.** Chylothorax

**27.2.2.5.** Pyothorax

Candidates should have **basic** knowledge and expertise in

**27.2.2.6.** Mediastinal mass

**27.2.2.7.** Mediastinal abscess

**27.2.2.8.** Neoplastic pleural effusion

**27.2.3. Procedures of the Thoracic Cavity**

Candidates should have a **sound** knowledge in

**27.2.3.1. Thoracocentesis**

**27.2.3.2. Thoracostomy tube placement**

Candidates should have **basic** knowledge in

**27.2.3.3. Thoracoscopy**

**28. Cardiovascular System**

**28.1. Principles of surgery of the Cardiovascular System**

Candidates should have **sound** knowledge and expertise in

**28.1.1. The pathophysiology of cardiac tamponade**

**28.1.2. Stroke Volume, cardiac output, blood pressure and vascular resistance**

**28.2. Conditions of the Cardiovascular System**

Candidates should have **sound** knowledge and expertise in

**28.2.1. Patent Ductus Arteriosus**

**28.2.2. Pericardial effusion**

Candidates should have **basic** knowledge and expertise in

**28.2.3. Pulmonic Stenosis**

**28.2.4. Heart base tumour**

**28.2.5. Ventricular Septal Defect**

**28.2.6. Aortic Stenosis**

**28.2.7. Atrial and atrioventricular septal defect**

**28.2.8. Tetralogy of Fallot**

**28.2.9. Mitral Valve regurgitation**

**28.2.10. Pacemaker systems**

**28.2.11. Constrictive pericarditis**

**28.3. Procedures of the Cardiovascular System**

Candidates should have a **sound** knowledge in

**28.3.1. Patent Ductus Arteriosus ligation**

**28.3.2. Pericardiocentesis**

Candidates should have **basic** knowledge in

**28.3.3. Pericardiectomy**

**28.3.4. Central Venous Catheter placement**

## **29. Soft Tissue: The Urogenital Systems**

### **29.1. Principles of Urogenital surgery**

Candidates should have **sound** knowledge and expertise in

**29.1.1.** The neurologic and physiologic control of continence and micturition.

Candidates should have **basic** knowledge and expertise in

**29.1.2.** Reproductive physiology in both males and females, including pregnancy and parturition, as it applies to the management of surgical diseases

**29.1.3.** Renal physiology including the formation of urine and neuro-endocrine functions

### **29.2. Urogenital Conditions**

#### **29.2.1. Male Reproductive Tract**

Candidates should have **sound** knowledge and expertise in

**29.2.1.1.** Cryptorchidism

**29.2.1.2.** Orchitis/epididymitis

**29.2.1.3.** Testicular torsion

**29.2.1.4.** Testicular neoplasia

**29.2.1.5.** Paraphimosis

**29.2.1.6.** Phimosis

**29.2.1.7.** Benign prostatic hyperplasia

**29.2.1.8.** Prostatitis and prostatic abscess

**29.2.1.9.** Prostatic carcinoma

Candidates should have **basic** knowledge and expertise in

**29.2.1.10.** Congenital and developmental disorders of the prepuce and penis

**29.2.1.11.** Traumatic and inflammatory disorders of the prepuce and penis

**29.2.1.12.** Penile and preputial neoplasia

**29.2.1.13.** Prostatic metaplasia

**29.2.1.14.** Prostatic trauma

#### **29.2.2. Female Reproductive Tract**

Candidates should have **sound** knowledge and expertise in

**29.2.2.1.** Ovarian remnant syndrome

**29.2.2.2.** Cystic endometrial hyperplasia

**29.2.2.3.** Pyometra

- 29.2.2.4.Metritis
- 29.2.2.5.Dystocia
- 29.2.2.6.Recessed vulva
- 29.2.2.7.Vaginal oedema and vaginal prolapse

Candidates should have **basic** knowledge and expertise in

- 29.2.2.8.Congenital abnormalities of the vagina and vestibule
- 29.2.2.9.Ovarian cysts
- 29.2.2.10.Congenital abnormalities of the ovary
- 29.2.2.11.Endometrial polyps
- 29.2.2.12.Uterine torsion
- 29.2.2.13.Uterine rupture
- 29.2.2.14.Uterine prolapse
- 29.2.2.15.Congenital abnormalities of the uterus
- 29.2.2.16.Intersex conditions
- 29.2.2.17.Neoplastic conditions of the female reproductive tract

### 29.2.3.Urinary Tract

Candidates should have **sound** knowledge and expertise in

- 29.2.3.1.Renal trauma
- 29.2.3.2.Ureteral obstruction
- 29.2.3.3.Ureteral trauma
- 29.2.3.4.Ureteral ectopia
- 29.2.3.5.Bladder and urethral trauma
- 29.2.3.6.Bladder and urethral calculi/urolithiasis
- 29.2.3.7.Bladder and urethral neoplasia
- 29.2.3.8.Urethral obstruction
- 29.2.3.9.Urethral prolapse
- 29.2.3.10.Urethral sphincter mechanism incompetence

Candidates should have **basic** knowledge and expertise

- 29.2.3.11.Acute and chronic kidney disease
- 29.2.3.12.Congenital and developmental disorders of the kidney
- 29.2.3.13.Renal abscesses
- 29.2.3.14.Renal Calculi
- 29.2.3.15.Renal and ureteral neoplasia
- 29.2.3.16.Renal cysts and perirenal pseudocysts
- 29.2.3.17.Ureterocoeles
- 29.2.3.18.Polypoid cystitis
- 29.2.3.19.Congenital bladder abnormalities
- 29.2.3.20.Urethritis
- 29.2.3.21.Feline Lower Urinary Tract Disease (FLUTD)

## 29.3. Urogenital Procedures

### 29.3.1.Male Reproductive Tract

Candidates should have **sound** knowledge in

- 29.3.1.1.Orchiectomy
- 29.3.1.2.Scrotal ablation
- 29.3.1.3.Penile amputation
- 29.3.1.4.Preputial advancement
- 29.3.1.5.Preputial reconstruction
- 29.3.1.6.Prostatic drainage
- 29.3.1.7.Prostatic omentalisation
- 29.3.1.8.Partial prostatectomy

Candidates should have **basic** knowledge in

- 29.3.1.9.Vasectomy
- 29.3.1.10.Prostatic marsupialization
- 29.3.1.11.Total prostatectomy

### 29.3.2.Female Reproductive Tract

Candidates should have **sound** knowledge in

- 29.3.2.1.Ovariectomy
- 29.3.2.2.Ovariohysterectomy
- 29.3.2.3.Caesarean section
- 29.3.2.4.Episiotomy
- 29.3.2.5.Vulvoplasty/episioplasty

Candidates should have **basic** knowledge in

- 29.3.2.6.Vaginal cytology
- 29.3.2.7.Artificial insemination
- 29.3.2.8.Vulvovaginectomy

### 29.3.3.Urinary Tract

Candidates should have **sound** knowledge in

- 29.3.3.1.Renal biopsy
- 29.3.3.2.Partial and complete nephrectomy/ureteronephrectomy
- 29.3.3.3.Neoureterocystostomy
- 29.3.3.4.Neoureterostomy
- 29.3.3.5.Cystocentesis
- 29.3.3.6.Catheter biopsy
- 29.3.3.7.Cystotomy
- 29.3.3.8.Cystectomy
- 29.3.3.9.Cystostomy
- 29.3.3.10.Cystopexy
- 29.3.3.11.Urethrotomy
- 29.3.3.12.Urethral anastomosis
- 29.3.3.13.Perineal Urethrostomy in cats
- 29.3.3.14.Scrotal urethrostomy in dogs

Candidates should have **basic** knowledge in

- 29.3.3.15.Nephrostomy tube placement
- 29.3.3.16.Nephrotomy/pyelotomy

- 29.3.3.17. Renal transplant
- 29.3.3.18. Ureterotomy
- 29.3.3.19. Ureteral resection and anastomosis
- 29.3.3.20. Ureteral stenting
- 29.3.3.21. Subcutaneous ureteral bypass
- 29.3.3.22. Management of intramural ureteral ectopia with laser surgery
- 29.3.3.23. Colposuspension
- 29.3.3.24. Urethropexy/cystourethropexy
- 29.3.3.25. Artificial urethral sphincter
- 29.3.3.26. Transpelvic urethral sling and transobturator vaginal tape
- 29.3.3.27. Cystoscopy
- 29.3.3.28. Urethral bulking agents
- 29.3.3.29. Transpelvic, subpubic, and prepubic urethrostomy in cats
- 29.3.3.30. Prescrotal, perineal, and prepubic urethrostomy in dogs

## 30. Endocrine System

### 30.1. Principles of surgery of the Endocrine System

Candidates should have **basic** knowledge and expertise in

- 30.1.1. Imaging and clinicopathologic diagnosis of adrenal, thyroid and parathyroid disease

### 30.2. Conditions of the Endocrine System

Candidates should have **basic** knowledge and expertise in

- 30.2.1. Feline hyperthyroidism
- 30.2.2. Canine thyroid tumours
- 30.2.3. Hyperparathyroidism
- 30.2.4. Adrenal masses

### 30.3. Procedures of the Endocrine System

Candidates should have **basic** knowledge in

- 30.3.1. Feline thyroidectomy for benign hyperthyroidism
- 30.3.2. Canine thyroidectomy for thyroid tumours
- 30.3.3. Adrenalectomy for the treatment of malignant adrenal neoplasia in dogs
- 30.3.4. Parathyroidectomy for primary hyperparathyroidism

## 31. The Ear

### 31.1. Principles of surgery of the Ear

Candidates should have **sound** knowledge and expertise in

**31.1.1.**Investigation of disease of the external and middle ear including laboratory and imaging techniques.

Candidates should have **basic** knowledge and expertise in

**31.1.2.**Primary causes, predisposing factors and perpetuating factors of otitis externa in dogs and cats

### **31.2. Conditions of the Ear**

Candidates should have **sound** knowledge and expertise in

- 31.2.1.**Aural haematoma
- 31.2.2.**Tumours of the pinna
- 31.2.3.**Septic otitis media
- 31.2.4.**Middle ear polyps
- 31.2.5.**Trauma and avulsion to the external ear canal
- 31.2.6.**Para-aural abscess

Candidates should have **basic** knowledge and expertise in

- 31.2.7.**Otitis externa/media
- 31.2.8.**Secretory otitis media
- 31.2.9.**Cholesteatoma and cholesterol granuloma of the middle ear
- 31.2.10.**External ear canal tumours
- 31.2.11.**Middle ear tumours
  - 31.2.11.1.1.1.External auditory canal atresia

### **31.3. Procedures of the Ear**

Candidates should have a **sound** knowledge in

- 31.3.1.**Auricular haematoma repair
- 31.3.2.**Repair of pinnal lacerations
- 31.3.3.**Total and subtotal pinnectomy
- 31.3.4.**Total ear canal ablation and bulla osteotomy

Candidates should have **basic** knowledge in

- 31.3.5.**Vertical Canal resection

31.3.6.Lateral Wall Resection

## **EXAMINATIONS**

For information on the standard and format of both the Written and Oral examinations candidates are referred to the Membership Candidates Handbook. The Membership examination has two separate components:



1. Written Examination (*Component 1*)  
Written Paper 1 (two hours): Surgical Principles  
Written Paper 2 (two hours): Application of surgical principles
2. Oral Examination (*Component 2*) Oral (45 minutes to one hour)

The written examination will comprise of two separate two-hour written papers taken on the same day. There will be an additional 15 minutes perusal time for each paper, during which no typing is permitted. Each paper will be worth a total of 120 marks. There is no choice of questions. Questions may be long essay type, a series of shorter answer sub-questions, or multiple-choice questions. Marks allocated to each question and sub questions will be clearly indicated on the written paper.

### **Written Paper 1:**

This paper focuses on the principles of surgery and the pathophysiology of surgical diseases.

### **Written Paper 2:**

This paper focuses on the clinical application of small animal surgery. This will include all clinical problems an experienced general practitioner with a large surgical load might be expected to face.

### **Oral Examination:**

This comprises images, radiographs and other clinically relevant material to assess the candidate's diagnostic skills, problem solving skills and ability to apply surgical principles to clinical problems. The duration of this examination is approximately 45 minutes to 1 hour.

**Four** (4) cases are presented with supporting questions asked verbally in a face-to-face setting via online platform (eg Zoom or TEAMS). The oral examination has a total of 100 marks with each case allocated 25 marks.

## **RECOMMENDED READING LIST**

The candidate is expected to read within the discipline and should also be guided by their mentors.

### **Recommended Textbooks**

Veterinary Surgery Small Animal, 2nd Edition  
Johnston and Tobias, ISBN: 9780323320658 ISBN-10: 0323320651 Elsevier - Published August 2017

### **Additional References**

Monteiro et al (2022) WSAVA Guidelines for Recognition, Assessment and Treatment of Pain. JSAP 2022. Open Access at <https://onlinelibrary.wiley.com/doi/10.1111/jsap.13566>

Mitze et al (2022) Brachycephalic Airway Syndrome; much more than a surgical problem *Vet Q.* 2022; 42(1): 213–223. Open Access at <https://www.tandfonline.com/doi/full/10.1080/01652176.2022.2145621>

**Recommended textbook** – candidates should own or have ready access to a copy of the book and have a sound knowledge of the contents.

**Additional references** – candidates should have access to the book and have a basic knowledge of the contents

## **FURTHER INFORMATION**

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