



## AUSTRALIAN AND NEW ZEALAND COLLEGE OF VETERINARY SCIENTISTS

### FELLOWSHIP GUIDELINES

#### *Veterinary Ophthalmology*

#### **ELIGIBILITY**

1. The candidate must meet the eligibility prerequisites for Fellowship outlined in the *Fellowship Candidate Handbook*.
2. Membership of the College must be achieved prior to the Fellowship examination.
3. Membership must be in Medicine of Cats, Small Animal Medicine, Small Animal Surgery, Veterinary Emergency Medicine and Critical Care, Medicine of Horses, Surgery of Horses, Veterinary Practice (Small Animal), Veterinary Practice (Equine), Avian Medicine and Surgery, Medicine and Management of Laboratory Animals, Veterinary Anaesthesia and Analgesia, Veterinary Pathology, Veterinary Pharmacology, Veterinary Radiology (Large Animal) or Veterinary Radiology (Small Animal).

#### **OBJECTIVES**

To demonstrate that the candidate has sufficient knowledge, training, experience, and accomplishment to meet the criteria for registration as a specialist in Veterinary Ophthalmology.

#### **RESPONSIBILITY**

It is the candidate's responsibility to ensure they have fulfilled all the requirements of the training program guidelines prior to submitting their credentials for eligibility for examination.

## LEARNING OUTCOMES

1. The candidate will have a **detailed**<sup>1</sup> knowledge of:
  - 1.1. the aetiology, pathogenesis, pathophysiology, diagnosis, differential diagnosis and treatment of ophthalmic diseases in all domestic animal and major wildlife species.
  - 1.2. the principles of ophthalmic pharmacology and therapeutics.
  - 1.3. ocular diagnostic procedures including gonioscopy, tonometry, cytology, ultrasonography, and photography.
  - 1.4. ocular techniques including medicine and surgery of the eye and neuro-ophthalmology.
  - 1.5. ocular embryology, ocular and comparative anatomy, ocular biochemistry, ocular physiology, optics and physiology of vision, ocular immunology
  - 1.6. clinical microbiology and clinical pathology as they relate to diseases of the eye.
  - 1.7. ocular pathology and ocular histology and histopathology
  - 1.8. the principles of comparative ophthalmic examination.
2. The candidate will have a **sound** knowledge of:
  - 2.1. ophthalmology as a comparative science with particular reference to all domestic animals, major wildlife species, birds, fish and reptiles.
  - 2.2. eye diseases in exotic species, wildlife, laboratory animals, fish and reptiles.
  - 2.3. ocular manifestations of systemic diseases in animals.
  - 2.4. aspects of human eye research and clinical ophthalmology that have relevance to ophthalmology of domestic animal species.
  - 2.5. ophthalmic oncology.
  - 2.6. ancillary diagnostic procedures computed tomography (CT) and magnetic resonance imaging (MRI).
3. The candidate will, with a **detailed**<sup>2</sup> expertise, be able to:
  - 3.1. perform all specialist level ophthalmologic diagnostic and surgical procedures.
  - 3.2. design pre-operative, operative and post-operative management plans in clinical cases involving the eye and related organ systems.

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### <sup>1</sup> Knowledge levels:

**Detailed knowledge** — candidate must be able to demonstrate an in-depth knowledge of the topic including differing points of view and published literature. The highest level of knowledge.

**Sound knowledge** — candidate 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 and the core literature.

### <sup>2</sup> Skill levels:

**Detailed expertise** — the candidate must be able to perform the technique with a high degree of skill, and have extensive experience in its application. The highest level of proficiency.

**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.<sup>2</sup>

- 3.3. analyse complex ophthalmologic medical problems and make clinical judgements.
- 3.4. collect, interpret and record clinical data including interpreting a range of diagnostic modalities (gonioscopy, tonometry, cytology, ultrasonography, CT and MRI) in complex ophthalmologic cases.
- 3.5. communicate effectively with clients, referring to veterinarians and peers.
- 3.6. integrate these skills to provide high-quality care for patients with the most efficient use of resources in a manner that is responsive to the owner's needs and wishes.
- 3.7. evaluate and incorporate new scientific information relevant to the practice of Veterinary Ophthalmology.
- 3.8. advanced knowledge in Veterinary Ophthalmology through clinical innovation, research and publication

## EXAMINATIONS

The Fellowship examination has **four separate, autonomous components**:

- 1. Written Paper 1** (*Component 1*) - 180 marks  
Basic Science Principles (Three hours)
- 2. Written Paper 2** (*Component 2*) - 180 marks  
Clinical Practice and Applications (Three hours)
- 3. Practical Examination** (*Component 3*) - 120 marks  
Ophthalmic Examination and Diagnostic Techniques and Surgical Technique (Two hours)
- 4. Oral Examination** (*Component 4*) - 120 marks  
Oral (One to two hours)

The written examination will comprise of two separate three-hour written papers taken on two consecutive days, with a total of 180 marks each. There will be an additional 20 minutes perusal time for each paper, during which no typing is permitted. Each examination will consist of Part 1, Part 2 and Part 3.

- Part 1 consists of up to 60 multiple-choice questions.
- Part 2 consists of short answer questions.
- Part 3 consists of long answer questions.

There is no choice of questions. Marks are allocated to each question and to each subsection of questions will be clearly indicated on the written paper.

### Written Paper 1: Basic Science and Principles

This paper is designed to test the candidate's knowledge of the principles of Veterinary Ophthalmology as described in the Learning Outcomes listed earlier. Answers may cite specific

examples where general principles apply but should primarily address the theoretical basis underlying each example. Questions may contain images or photos.

### **Written Paper 2: Clinical Practice and Applications**

This paper is designed to (a) test the candidate's ability to apply the principles of Veterinary Ophthalmology to particular cases/problems or tasks, and (b) test the candidate's familiarity with the current practices and current issues that arise from activities within the discipline of Veterinary Ophthalmology. Questions may contain images or photos.

### **Practical Examination**

This examination will further test the candidate's achievement of the Learning Outcomes. The duration of the practical examination will be two hours. The candidate will be required to provide typed answers to questions presented in an audiovisual format (e.g. Power Point). The questions can relate to current literature, ophthalmic examination of commonly encountered species, diagnostic procedures, clinical images, slit lamp photos, fundus photos, gonioscopy photos, cytology photos, photomicrographs from histopathology, videos, radiographs, CT and MRI images, surgical procedures and techniques, or surgical materials.

### **Oral Examination (duration of minimum one hour, maximum two hours)**

This examination will further test the candidate's achievement of the Learning Outcomes. The oral examination will consist principally of an audiovisual material session and the candidate will be required to identify, assess and solve problems using the information presented. Questions typically include listing lesions or abnormalities, discussing a differential diagnosis list for the specific disease process, stating the most likely aetiologic diagnosis(es) and pathogenesis, listing morphologic diagnosis, outlining appropriate therapy for the condition, knowledge of recent literature on the topic, or identifying species on the slide.

## **TRAINING PROGRAM**

In addition to the requirements of the *Fellowship Candidate Handbook*, the Chapter imposes the following:

1. 144 weeks of Direct Supervised Training (DST) is required over a three-year (156 weeks) period. A minimum of 25 hours of direct supervision is required in a 38 hour week.
2. Compulsory attendance of the William Magrane Basic Science Course in Veterinary and Comparative Ophthalmology. The course will contribute 120 hours (three weeks) of the candidates DST. The purpose of course attendance is to assist the candidate in acquiring a detailed knowledge of ocular embryology, ocular and comparative anatomy, ocular biochemistry, ocular physiology, optics and physiology of vision, ocular immunology, ocular pathology, and histopathology. For course dates and registration details see [www.acvo.org](http://www.acvo.org).
3. The candidate is expected to attend relevant scientific meetings and conferences and attendance at an international veterinary ophthalmology conference is recommended. The credentials document must show documentary evidence that the candidate has prepared and presented at least one oral presentation at a national or international ophthalmologic conference prior to examination. Presentations must be of at least 12 minutes duration and there should be an opportunity for questions from the audience. (A candidate may apply for consideration of shorter times for an oral presentation; this would require approval from the SSC).

4. Cases must be of the type seen in ophthalmology referral institutions which are considered to be specialist procedures. The candidate should attempt to gain as broad a range of experience as possible.

5. Case Minima

Case minima by category are only relevant for cases that require surgery. The candidate must be the primary surgeon for 25% of these cases. For example, if 40 eyelid surgeries are required the candidate must be the primary surgeon for at least 10 of these cases and assistant surgeon for no more than 30 of the cases.

Case minima for species are relevant for all cases seen, both medical and surgical. These must be supervised ophthalmic examinations or surgeries recorded individually. Thus, they may include herd examinations as long as individual animals are recorded separately in hospital records. It is expected however, in the species where herd examinations are performed e.g horses and cattle, that clinical cases will also constitute some part of the totals. Case minima refer to the period of the training program and must be met in order for credentials to be successful. If case minima are met prior to the end of the training program, following approval by the Subject Standards Committee, the candidate may keep a cumulative case log (ie total case numbers) but will not be required to record all case details. These numbers should be recorded in the tables for Case Minima for Category and Species but are not required in the Activity Log Summary.

<b>Case Minima for Category</b>	
Orbital/globe surgery (includes enucleation, intrascleral prosthesis, orbitotomy, retinal detachment, intraocular tumour removal, laser surgery, glaucoma surgery)	30
Eyelid surgery (includes entropion, eyelid reconstruction [following trauma or tumour removal or eyelid agenesis], distichiasis, ectopic cilia)	40
Conjunctiva/TE (includes scrolled cartilage of the third eyelid, prolapse of the third eyelid gland, repair/reconstruction [trauma/tumour removal/eyelid agenesis], symblepharon)	20
Cornea/Sclera (includes tumour removal, foreign body removal, corneal repair, conjunctival graft, keratectomy, corneo-conjunctival transposition, keratoleptysis, corneal grafting)	50

Lens  (include extracapsular lens removal, intracapsular lens removal, phacoemulsification, foreign body removal)	40
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<b>Case Minima for Species</b>	
Canine	300
Feline	100
Equine	30
Other large animal (incl bovine, ovine, caprine)	10
Exotics/birds/Zoo	30

## **TRAINING IN RELATED DISCIPLINES**

Refer to the *Fellowship Candidate Handbook*, Section 2.4.2

Candidates for Fellowship in Veterinary Ophthalmology must spend seven of the 144 weeks supervised in the Training in Related Disciplines (TRD). Four weeks must be as per the following:

- small animal medicine (76 hours, 2 weeks)
- small animal or large animal surgery (76 hours, 2 weeks).

The other three weeks of TRD should be composed of any of the following disciplines:

- veterinary ocular histopathology training (38 hours, 1 week)
- veterinary diagnostic imaging/veterinary radiology (38 hours, 1 week)
- veterinary oncology (38 hours, 1 week)
- veterinary dermatology (38 hours, 1 week)
- veterinary emergency and critical care (38 hours, 1 week)
- veterinary anaesthesia and analgesia (38 hours, 1 week)
- veterinary neurology (38 hours, 1 week)
- human ophthalmic clinical training (38 hours, 1 week)
- laboratory animals/ocular toxicology (38 hours, 1 week)
- feline medicine (38 hours, 1 week)
- aquatic, avian, zoo or wildlife medicine (38 hours, 1 week).

TRD must be undertaken with a registered specialist in that discipline or other person approved by the Training and Credentials Committee (TCC) (see Appendix 2).

## **EXTERNSHIPS**

Refer to the *Fellowship Candidate Handbook*, Section 2.4.1

Candidates for Fellowship in Veterinary Ophthalmology must complete four weeks of Externship activity. This may be completed in two, two-week blocks or alternatively, one continuous four-week externship. The candidate may be required to complete additional Externship(s), following assessment of the Training Program Document by the TCC.

## ACTIVITY LOG SUMMARY

Candidates should refer to the *Fellowship Candidate Handbook*. The Activity Log Summary (ALS) should be kept in the format of Appendix 1. An electronic version of the template is available on the college website. This log records detailed case information which should be recorded daily throughout training.

The activity log summary should include medical AND surgical cases although only initial presentation of cases should be documented. Candidates are required to state whether a case was managed medically (Md) or surgically (Sx) and the system involved, by placing the correct abbreviation in the appropriate box. Obviously more than one system may be involved in an individual case and all systems should be indicated. Candidates should also indicate the working diagnosis (where possible).

The template for the ALS must be submitted for approval with the Training Program documents and completed throughout the training program. The cumulative ALS must be submitted with the annual supervisor report.

## PUBLICATIONS AND PRESENTATION

Refer to the *Fellowship Candidate Handbook*, Section 2.10

Examples of appropriate conferences to present include ANZCVS Science Week and ECVO/ACVO/IEOC and ARVO conferences.

Examples of appropriate journals to submit for publishing include *Veterinary Ophthalmology*, *American Journal of Veterinary Research*, *Journal of Feline Medicine and Surgery*, *Journal of Small Animal Practice*, *Journal of the American Animal Hospital Association*, *Journal of the American Veterinary Medical Association*, *Journal of Veterinary Internal Medicine*, *Australian Veterinary Journal*, *Equine Veterinary Journal*, *New Zealand Veterinary Journal*, *Veterinary Pathology and Veterinary Record*.

## RECOMMENDED READING LIST<sup>34</sup>

The candidate is expected to research the depth and breadth of the knowledge of the discipline. All written examination questions are supported by a reference within the past seven years or from a textbook or journal article on the list of “required” references.

*This list is intended to guide the candidate to some core references and source material. The list is not comprehensive and is not intended as an indicator of the content of the examination.*

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### <sup>3</sup> Definitions of Textbooks:

**Core textbook:** candidates are expected to own a copy of the textbook and have a detailed knowledge of the contents.

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

### <sup>4</sup> Definitions for Journals:

**Core Journal:** candidates are expected to have ready access to either print or electronic versions of the journal and have a detailed knowledge of the published articles in the subject area.

**Recommended Journal:** candidates should have ready access to either print or electronic versions of the journal and have a sound knowledge of the published articles in the subject area.

**Additional Journal:** candidates should be able to access either printed or electronic versions of the journal and have a basic knowledge of the published articles in the subject area.

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## **Core Textbooks**

Gelatt KN. *Veterinary Ophthalmology* 6<sup>th</sup> edn. Wiley-Blackwell. 2021

Gilger BC. *Equine Ophthalmology*, 4<sup>th</sup> edn. Wiley-Blackwell. 2022

Maggs D, Miller P and Ofri R. *Slatter's Fundamentals of Veterinary Ophthalmology*, 6th Edition, Saunders, 2017

## **Additional References**

### **Anatomy, Histology, Embryology**

Hermanson J.W, de Lahunta A and Evans H.E. *Miller's anatomy of the dog (ocular and orbital sections)*. 5th edn. WB Saunders, 2019 (chapters on eye, orbit, and cranial nerves).

### **Physiology**

Levin L.A, Kaufman P.L & Hartnett M.E. *Adler's physiology of the eye*. 12th edn. Elsevier, 2024.

### **Pathology, Immunology**

Dubielzig R, Ketrting K, McLellan G & Albert D. *Veterinary Ocular Pathology: A Comparative Review*. Elsevier 2010.

Klintworth GK & Garner AG, editors. *Garner and Klintworth's pathobiology of ocular disease*. 3rd edn. Informa HealthCare, 2008.

Maxie M, editor. *Jubb, Kennedy and Palmer's pathology of domestic animals*. 6th edn. Saunders Elsevier, 2015 (eye chapter only).

### **Neuro-ophthalmology**

Lorenz MD, Coates J & Kent M. *Handbook of veterinary neurology*. 5th edn. Elsevier, 2010 (chapter 11 Blindness, anisocoria, and abnormal eye movements).

### **Surgery**

Eisner G. *Eye surgery*. Springer-Verlag, 1990.

Gelatt KN & Gelatt JP. *Small animal ophthalmic surgery*. Reed Educational/Elsevier, 2010.

Gelatt KN, Gelatt JP & Plummer CE. *Veterinary Ophthalmic Surgery*. 2<sup>nd</sup> edn. Elsevier. 2021

Seibel BS. *Phacodynamics: mastering the tools and techniques of phacoemulsification surgery*. 4th edn. SLACK Incorporated, 2005.

### **Clinical Ophthalmology**

Barnett. *Equine Ophthalmology: An Atlas and Text*. 2<sup>nd</sup> edn. Mosby. 2004.

Gelatt K and Plummer C. *Color Atlas of Veterinary Ophthalmology*. 2<sup>nd</sup> edn. Lippincott. 2017.

Ketrting K and Glaze M. *Atlas of Feline Ophthalmology*. 2<sup>nd</sup> edn. Wiley-Blackwell. 2013.

## **REQUIRED JOURNALS**

The past seven years of journal articles *in print* prior to January 1 of the year of the examination. Date of e-publication is irrelevant.

**Core Veterinary Journals** (large majority of questions for the written examination will be derived from these journals. Articles from these veterinary journals should be reviewed for any situation or disease that involves ocular, periocular, or neuro-ophthalmic structures, or systemic conditions relevant to ocular disease):

*American Journal of Veterinary Research*

*Journal of Feline Medicine and Surgery*

*Journal of Small Animal Practice*

*Journal of the American Animal Hospital Association*

*Journal of the American Veterinary Medical Association*

*Journal of Veterinary Internal Medicine*

*Veterinary Clinics of North America — Equine, Exotic Animal, Food Animal and Small Animal Practice*

*Veterinary Ophthalmology*

**Additional Veterinary and Human Journals** (questions derived from pertinent articles from these journals may occur infrequently on the written examination. Review of basic science and human clinical journals should be limited to those articles dealing with situations or diseases directly applicable to veterinary ophthalmology, or one where a common domestic animal is used as an animal model. Reviews of human clinical conditions or basic science articles unrelated to veterinary ophthalmology are not necessary for examination preparation);

*Australian Veterinary Journal*

*Equine Veterinary Journal*

*New Zealand Veterinary Journal*

*Veterinary Pathology*

*Veterinary Record*

*Veterinary Surgery*

*Experimental Eye Research*

*Investigative Ophthalmology and Visual Science*

*Vision Research*

## **Other Resource Material**

ACVO Histology Teaching Set

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## **FURTHER INFORMATION**

For further information contact the College Office

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Case Minima for Category		Completed	Required	Primary surgeon for:
NOTE: Only relevant for cases that require surgery				NOTE: must be primary surgeon for 25% of these case
Orbital/globe			<b>30</b>	
Eyelid			<b>40</b>	
Conjunctiva/TE			<b>20</b>	
Cornea/Sclera			<b>50</b>	
Lens			<b>40</b>	

Case Minima for Species		Required
Canine		<b>300</b>
Feline		<b>100</b>
Equine		<b>30</b>
Other large animal (incl bovine, ovine, caprine)		<b>10</b>
Exotic		<b>30</b>
Bird		
Zoo		

## APPENDIX 2

### **Learning Outcomes for Training in Related Disciplines**

Throughout the 144-week training program, the Fellowship candidate in Veterinary Ophthalmology must be exposed to and actively involved in training in several related disciplines. The Fellowship candidate is encouraged to develop a working relationship with one or more specialists in each discipline to facilitate regular discussion and interaction regarding case management. In addition, involvement and participation of a specialist in these disciplines in clinical rounds and seminars attended by the Fellowship candidate is encouraged, as is participation of the Fellowship candidate in relevant rounds and seminars specific to this discipline. The Fellowship candidate must ensure that this time is spent effectively in consolidating knowledge and skills and in covering aspects of this discipline that will not be addressed adequately during the remainder of their program. The Fellowship candidate is expected to be proactive in searching out opportunities, materials and expert tuition and in compiling and organizing relevant material for future reference.

### **Training in the Related Discipline of Small Animal Medicine**

The 76 hours (2 weeks) must be directly supervised by a Fellow of the ANZCVS (Small Animal Medicine, Canine Medicine or Feline Medicine), or a Diplomate of the ECVIM or ACVIM, or exceptionally and with prior approval from the training and credentials committee, another recognised expert. The role of the supervisor is to provide guidance and training in internal medicine as it applies to veterinary ophthalmology patient.

Essential techniques/topics the candidate should gain practical experience with, include but are not limited to the following:

1. Exposure to medical conditions with ocular manifestation of disease e.g. diabetes, renal disease, endocrine diseases, infectious diseases and medical conditions that may affect the patient during anaesthesia, surgery or recovery
2. The development of a broad view of veterinary medical patient evaluation and their ocular implications.
3. The formulation of treatment plans that encompass the medical needs of veterinary patients.
4. The indication for laboratory and other diagnostic tests and interpretation of their results e.g. blood pressure measurement, techniques and pitfalls.
5. Monitoring the patient's response to treatment and modifying treatment as indicated.

### **Training in the Related Discipline of Small Animal or Large Animal Surgery**

The 76 hours (2 weeks) must be directly supervised by a Fellow of the ANZCVS (Small Animal or Large Animal Surgery), or a Diplomate of the ECVS or ACVS, or exceptionally - and with prior approval from the training and credentials committee - another recognised expert. The role of the supervisor is to provide guidance and training in surgery as it applies to veterinary ophthalmology patient.

Essential techniques/topics the candidate should gain practical experience with include but are not limited to the following:

1. Participation in small animal or large animal surgical cases involving the head and neck.
2. An understanding of the underlying principles of surgery including, but not limited to: asepsis, haemostasis, tissue handling, wound healing, wound infection and antibiotic therapy.
3. Formulation of a treatment plan that encompasses the surgical and anaesthesia requirements of the patient.
4. Indications for and use of other diagnostic modalities e.g MRI and CT and the interpretation of these results.
5. Monitoring the patient's response to treatment and modifying treatment as indicated.
6. Evaluation of the patient during anaesthesia, surgery and recovery, and
7. Biopsy techniques.

### **Training in the Related Discipline of Veterinary Histopathology**

The 38 hours (1 week) of histopathology training must be directly supervised by a Fellow of the ANZCVS, Diplomate of the ECVS or ACVP or exceptionally - and with prior approval from the training and credentials committee - another recognised expert. The role of the supervisor is to provide guidance and training in ocular histopathology.

Essential techniques/topics the candidate should gain practical experience with include but are not limited to the following:

1. Normal comparative histological anatomy and embryology.
2. Ocular cytology.
3. Histopathological patterns of common ocular diseases e.g. conjunctivitis, keratitis, ulcerative keratitis, ocular trauma, uveitis, scleritis, inherited retinal diseases (PRA, CEA, retinal dysplasia), optic neuritis, glaucoma, cataractogenesis and common ocular tumours.

### **Training in the Related Discipline of Veterinary Diagnostic Imaging/Veterinary Radiology**

The 38 hours (1 week) of veterinary diagnostic imaging must be directly supervised by a Fellow of the ANZCVS (Veterinary Radiology), Diplomate of the ECVDI or ACVR, or exceptionally - and with prior approval from the training and credentials committee - another recognised expert. The role of the supervisor is to provide guidance and training in diagnostic imaging as it applies to the veterinary ophthalmology patient.

Essential techniques/topics the candidate should gain practical experience with include but are not limited to the following:

1. Radiography including digital radiography of the head and neck.
2. Ocular ultrasonography.
3. Computed tomography (CT) of head and neck.
4. Magnetic resonance imaging (MRI) of the head and neck.

### **Training in the Related Discipline of Veterinary Oncology**

The 38 hours (1 week) of veterinary oncology must be directly supervised by a Fellow of the ANZCVS, Diplomate of the ECVIM or ACVIM or exceptionally - and with prior approval from the training and credentials committee - another recognised expert. The role of the supervisor is to provide guidance and training in veterinary oncology as it applies the veterinary ophthalmology patient.

Essential techniques/topics the candidate should gain practical experience with include but are not limited to the following:

1. Aetiopathogenesis, epidemiology, pathology, diagnosis, treatment and management measures for common oncological diseases of small animal and large animal patients. This should include exposure to surgical principles generally, and specifically in relation to oncology
2. Cytology and histopathology of neoplasia.

### **Training in the Related Discipline of Veterinary Anaesthesia and Analgesia**

The 38 hours (1 week) of veterinary anaesthesia and analgesia must be directly supervised by a Fellow of the ANZCVS, Diplomate of the ECVAA or ACVAA or exceptionally - and with prior approval from the training and credentials committee - another recognised expert. **The role of the supervisor is to provide guidance and training in veterinary anaesthesia and analgesia.**

Essential techniques/topics the candidate should gain practical experience with include but are not limited to the following:

1. Pain management:
  - a. basic physiology of acute and chronic pain.
  - b. recognition and monitoring of pain in surgical patients.
  - c. prevention and control of pain: pre-emptive analgesia, post-operative analgesic techniques, management of acute (including post-operative) and chronic pain.
2. Anaesthesia:
  - a. pre-operative assessment and patient preparation: pre-anaesthetic evaluation and premedication.



- b. equipment used in general anaesthesia delivery and monitoring.
- c. drugs used for sedation/ tranquilization, analgesia, muscle relaxation and anaesthesia, and their application in small and large animal patients.
- d. neuromuscular blocking agents, their use and patient monitoring.
- e. application of analgesic techniques before, during and after a surgical procedure and knowledge of their influence on the course of anaesthesia.
- f. anaesthesia induction, maintenance and recovery techniques in small and large animal surgery patients.
- g. airway maintenance, oxygenation and ventilation, acute respiratory failure.
- h. special anaesthetic considerations: anaesthesia of the neonate, geriatric patient and veterinary patients with special needs eg. patients affected by endocrine disease, renal disease, cardiac disease and liver disease.
- i. standing sedation and general anaesthesia of horses and foals.
- j. monitoring during anaesthesia, effects on the respiratory and CV systems and support of these systems during anaesthesia.
- k. prevention and management of anaesthetic accidents and crises.
- l. local and regional anaesthesia techniques used in large and small animals.

### **Training in the Related Discipline of Veterinary Emergency and Critical Care**

The 38 hours (1 week) of veterinary emergency and critical care must be directly supervised by a Fellow of the ANZCVS, Diplomate of the ECVECC or ACVECC or exceptionally - and with prior approval from the training and credentials committee - another recognised expert. **The role of the supervisor is to provide guidance and training in veterinary emergency and critical care.**

Essential techniques/topics the candidate should gain practical experience with include but are not limited to the following:

1. Fluid and electrolyte disorders and their therapy.
2. Nutrition and metabolism in surgical patients.
3. Management of patients with special needs e.g. diabetic patients, animals affected by endocrine disease and small animals with kidney or liver disease
4. Cardiac failure and resuscitation.
5. Monitoring the of the veterinary surgical patient.

### **Training in the Related Discipline of Veterinary Neurology**

The 38 hours (1 week) of veterinary neurology must be directly supervised by a Fellow of the ANZCVS, Diplomate of the ECVN or ACVIM or exceptionally - and with prior approval from the training and credentials committee - another recognised expert. **The role of the supervisor is to provide guidance and training in neurology as applies to the veterinary ophthalmology patient.**

Essential techniques/topics the candidate should gain practical experience with include but are not limited to the following:

1. Neurological assessment of small and large animals with special emphasis on cranial nerve examination of veterinary patients.
2. Diagnostic investigation and management of neurological diseases in small animal patients.
3. Particular diseases of interest may include neuro-ophthalmic diseases e.g. Horner's syndrome, neurological keratoconjunctivitis sicca (KCS), causes of anisocoria and nystagmus, central causes of vision loss, neoplastic or inflammatory CNS diseases and disorders of the autonomic nervous system.

### **Training in the Related Discipline of Human Ophthalmic clinical training**

The 38 hours (1 week) of human ophthalmic clinical training must be directly supervised by a Fellow of the Royal Australian and New Zealand College of Ophthalmology (RANZCO) or exceptionally - and with prior approval from the training and credentials committee - another recognised expert. **The role of the supervisor is to provide guidance and training in human ophthalmology.**

Essential techniques/topics the candidate should gain practical experience with include but are not limited to the following:

1. The aetiology, pathogenesis, pathophysiology, diagnosis, differential diagnosis and treatment of ophthalmic diseases in humans.
2. Principles of ophthalmic pharmacology and therapeutics.
3. Ocular diagnostic procedures.
4. Optics and physiology of vision.
5. Principles of human ophthalmic surgery.
6. Aspects of human eye research and clinical ophthalmology that have relevance to ophthalmology of domestic animal species.

### **Training in the Related Discipline of Laboratory Animals/Ocular toxicology**

The 38 hours (1 week) of laboratory animals/ocular toxicology must be directly supervised by a Fellow of the ANZCVS, Diplomate of the ECVIM or ACVIM or exceptionally - and with prior approval from the training and credentials committee – another recognised expert. **The role of the supervisor is to provide guidance and training in ophthalmic laboratory animal/ocular toxicology studies.**

Essential techniques/topics the candidate should gain practical experience with include but are not limited to the following:

1. Aspects of eye research and clinical ophthalmology relevant to veterinary clinical ophthalmic practice
2. Observations of pre-clinical laboratory animal toxicology and pharmacology studies in the biotechnology, pharmaceutical and chemical industries
3. Performance of ophthalmic examinations on laboratory animals and observe the effects of various toxicology studies on the eye.

### **Training in the Related Discipline of Aquatic, Avian, Zoo or Wildlife medicine**

The 38 hours (1 week) of aquatic, avian, zoo or wildlife medicine must be directly supervised by a Fellow of the ANZCVS, Diplomate of the ECZM or ACZM or exceptionally - and with prior approval from the training and credentials committee - another recognised expert. **The role of the supervisor is to provide guidance and training in aquatic, avian, zoo or wildlife medicine.**

Essential techniques/topics the candidate should gain practical experience with include but are not limited to the following:

1. Understanding the handling, examination and medicating techniques related to the species being studied.
2. Gaining an understanding of the most important diseases affecting the species being studied.
3. Formulating of a differential diagnosis list for relevant conditions.
4. Formulating a treatment plan.
5. Monitoring the response to treatment and modifying treatment as indicated.
6. Indications for laboratory and other diagnostic tests and interpretation of results.

## **Training in the Related Discipline of Veterinary Dermatology**

The 38 hours (1 week) must be directly supervised by a Fellow of the ANZCVS (Dermatology), or a Diplomate of the ECVD or ACVD, or exceptionally- and with prior approval from the training and credentials committee- another recognised expert. **The role of the supervisor is to provide guidance and training in dermatology as applies to veterinary ophthalmology patient.**

Essential areas that should be covered include but are not limited to:

1. Where possible the candidate should seek exposure to dermatologic conditions with ocular manifestation of disease. For example: parasitic, viral, bacterial, mycotic and allergic blepharitis, immune mediated blepharitis (pemphigus group, ocular-dermatologic syndrome, medical canthal ulcerative syndrome, discoid lupus, systemic lupus), inflammatory pseudotumours (histiocytoses, nodular fasciitis) and idiopathic facial dermatitis of brachycephalic cats
2. Encourage a broad view of veterinary dermatology patient evaluation.
3. Indications for laboratory and other diagnostic tests, their evaluation and interpretation of results e.g. cytology, skin scrapping, microbial culture and sensitivity testing, histological assessment of tissues and skin allergy testing.
4. Formulation of a treatment plan that encompasses the medical needs of veterinary dermatology patients.
5. Monitoring the patient's response to treatment and modifying treatment as indicated.