



AUSTRALIAN AND NEW ZEALAND COLLEGE OF VETERINARY SCIENTISTS

MEMBERSHIP GUIDELINES

Animal Welfare

INTRODUCTION

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

ELIGIBILITY

Refer to Section 2 of the *Membership Candidate Handbook*.

OBJECTIVES

To demonstrate that the candidate has sufficient knowledge of and experience in animal welfare to be able to give sound advice to colleagues on problems and procedures commonly encountered in this field.

LEARNING OUTCOMES

This subject is described in the following learning outcomes and covers animal welfare of all species of animals which are defined in Australian, New Zealand and/or International laws, regulations and agreements. These may include domestic animals such as cattle, sheep, goats, pigs, poultry, horses and companion animals, laboratory, zoo and feral animals, wildlife, fish and cephalopods.

1. Introduction to Animal Welfare Science

1.1. The candidate will have a **sound**¹ knowledge of:

- 1.1.1. Concepts of animal welfare
 - 1.1.1.1. Biological function
 - 1.1.1.2. Animal feelings
 - 1.1.1.3. Naturalness or *telos*

¹Knowledge levels:

Detailed knowledge — candidates 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

- 1.1.1.4. The constituents of animal wellbeing, animal suffering, and animal distress
- 1.1.1.5. Frameworks to consider the needs of animals (e.g. Five Freedoms, Five Domains)
- 1.1.1.6. Scientific approaches to animal welfare, their use in assessment and their limitations

1.2. The candidate will have a **basic** knowledge of:

- 1.2.1. Domestication and use of animals
- 1.2.2. Differences and similarities between animal rights and animal welfare concepts
- 1.2.3. Factors influencing public perception of animal use and associated impact on animal welfare

2. The Ethics of Animal Use

2.1. The candidate will have a **basic** knowledge of:

- 2.1.1. Philosophical concepts for assessing human use of animals
- 2.1.2. Practical ethical frameworks for harm/benefit analyses [consequentialist and non-consequentialist approaches]
- 2.1.3. The use of animals in research and teaching (The THREE Rs (refinement, reduction and replacement))

3. Psychological and Physiological Aspects of Adverse States

3.1. The candidate will have a **sound** knowledge of:

- 3.1.1. Behaviour
 - 3.1.1.1. Changes in behaviour reflecting welfare state
 - 3.1.1.2. Abnormal behaviour related to housing and husbandry
 - 3.1.1.3. Motivation, self-awareness, self-consciousness and cognition in animals
- 3.1.2. Physiological
 - 3.1.2.1. Stress and its scientific evaluation
- 3.1.3. Pain pathways, perception and response
- 3.1.4. Relationships between disease and welfare e.g. lameness in cattle, leg weakness in broilers, tail-biting in pigs

4. Environment and Human Factors

4.1. The candidate will have a **sound** knowledge of:

- 4.1.1. Resource based factors
 - 4.1.1.1. The effects of environmental factors on welfare e.g. cage and pen design, stocking density, safety aspects, building design (humidity, noise etc), enrichment
 - 4.1.1.2. Welfare challenges of intensive and extensive farming systems
 - 4.1.1.3. Problems associated with social groupings or isolation
- 4.1.2. Human animal relationship factors
 - 4.1.2.1. Human-animal bond
 - 4.1.2.2. Selection of animal attendants, animal technicians and stock persons
 - 4.1.2.3. Stockmanship and productivity

4.1.2.4. The link between animal abuse and domestic violence

5. The Veterinary Profession's Role in Animal Welfare

5.1. The candidate will have a **basic** knowledge of:

- 5.1.1. Advocacy and advisory roles with stakeholders (including veterinarians, lawyers, government, industry, pet owners, animal welfare organisations and ethics committees)
- 5.1.2. Leadership role in welfare for the profession and the community
- 5.1.3. Advice on management of animal welfare during natural disasters and disease outbreaks
- 5.1.4. Veterinary professional ethics

6. Veterinary Aspects of Animal Welfare

6.1. The candidate will have a **sound** knowledge of:

- 6.1.1. Pain recognition and assessment
- 6.1.2. Methods of euthanasia and their assessment for humaneness

6.2. The candidate will have a **basic** knowledge of:

- 6.2.1. Pharmacokinetics of pain relief
- 6.2.2. Welfare assessment of routine procedures such as spaying, castration, tail docking, mulesing, disbudding, branding
- 6.2.3. Management of animals with hereditary problems including advice on breeding programmes

7. Legislation and Animal Welfare

7.1. The candidate will have a **sound** knowledge of:

- 7.1.1. Animal welfare legislation (Acts and Regulations) in Australia and New Zealand and its implementation including enforcement
- 7.1.2. Animal welfare codes of practice/standards and guidelines including regulation of the use of animals for scientific purposes
- 7.1.3. Animal welfare in quality assurance schemes

7.2. The candidate will have a **basic** knowledge of:

- 7.2.1. International, National and State Responsibilities
- 7.2.2. Government committee structure
- 7.2.3. Animal law – role and impact

8. Contemporary Animal Welfare Issues

8.1. The candidate will have a **sound** knowledge of:

- 8.1.1. Production animals – live export, intensive production, dairy
- 8.1.2. Companion animals – overpopulation, brachycephalic breeds
- 8.1.3. Wild animals (including captive, native and introduced)
- 8.1.4. Sport and entertainment (racing, circuses and rodeos)

EXAMINATIONS

For information on the required standard and format for both the Written and Oral examinations, candidates are referred to the *Membership Candidate Handbook*. The Membership examination has **two separate, components**:

1. **Written Examination** (*Component 1*)
Written Paper 1 (two hours): Principles of the Subject
Written Paper 2 (two hours): Applied Aspects of the Subject
2. **Oral Examination** (*Component 2*)
Oral (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 writing in an answer booklet is permitted. In each paper you are provided with six (6) questions to answer, worth 20 marks each, giving a total of 120 marks per paper. There is no choice of questions. Questions may be long essay type or a series of shorter answer sub-questions. Marks allocated to each question and to each subsection of questions will be clearly indicated on the written paper.

Written Paper 1:

This paper is designed to test the candidate's knowledge of the principles of animal welfare as described in the Learning Outcomes. Where questions relate to general principles, answers may cite specific examples, but should primarily demonstrate an understanding of the underlying theoretical basis.

Written Paper 2:

This paper is designed to (a) test the candidate's ability to apply the principles of animal welfare to particular cases/problems or tasks and (b) test the candidate's familiarity with the current practices and issues that arise from activities within the discipline of animal welfare in Australia and New Zealand.

Oral Examination:

This examination requires the candidate to demonstrate achievement of the above mentioned Learning Outcomes. Discussion will be predominantly based on case material. The duration of this examination is approximately one (1) hour. A variety of multimedia is likely to be used during this examination. Five (5) cases are presented with supporting questions asked verbally in a face-to-face setting. The oral examination has a total of 100 marks with each case allocated 20 marks.

RECOMMENDED READING MATERIAL

The candidate is expected to research the depth and breadth of the knowledge of the discipline. 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.

Recommended Texts and Resources²

Appleby, M.C., Mench, J.A., Olsson, I.A.S. and Hughes, B.O., (Eds.). (2011). *Animal Welfare*. 2nd Edition Wallingford, UK, CAB International.

Broom, D.M., and Fraser, A.F. (2015). *Domestic animal behaviour and welfare*. 5th Edition CAB International, Wallingford, UK.

Sandøe, P., and Christiansen, S.B. (2008). *Ethics of animal use* John Wiley and Son.

Wathes, C.M., Corr, S.A., May McCulloch, S.P., and Whiting, M.C. (2011) *Veterinary and Animal Ethics*. Proceedings of the 1st International Conference on Veterinary and Animal Ethics. UFAW. Wiley-Blackwell.

Yates, J. (2013). *Animal Welfare in Veterinary Practice*. UFAW Animal Welfare Series.

Recommended Resources for Legislation

Australian State and Territory Animal Welfare Legislation and Codes of Practice.

It is recommended that the candidate refer to the legislation and codes for their own particular state or territory.

The following article on the RSPCA Knowledgebase contains links to all Australian State/Territory animal welfare legislation (accessed February 17, 2017). What is the Australian legislation governing animal welfare? (http://kb.rspca.org.au/What-is-the-Australian-legislation-governing-animal-welfare_264.html)

The Australian Animal Welfare Strategy (<http://www.australiananimalwelfare.com.au/>) [accessed March 7, 2017]

New Zealand Animal Welfare Legislation

MAF. Information on Animal Welfare Act 1999 and New Zealand Animal Welfare Strategy 2013 (<http://www.mpi.govt.nz/law-and-policy/legal-overviews/animal-welfare/>) [accessed February 17, 2017]

MAF Animal Welfare Website (<http://www.mpi.govt.nz/protection-and-response/animal-welfare/>) [accessed February 17, 2017]

² **Definitions of Textbooks**

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

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 reading

Animal Welfare Science

Fraser, D. (2008). *Understanding animal welfare: The science in its cultural context*. Wiley-Blackwell.

Phillips, C.J.C. (2009). *The Welfare of Animals: The Silent Majority*. 220 pp. Springer, Dordrecht.

OIE (2014) *Animal Welfare: Focusing on the future*. Vol 33 (1) Scientific and Technical Review. (http://boutique.oie.int/index.php?page=ficprod&id_produit=1307&fichrech=1)

Sharp, T. & Saunders, G. (2011). *A model for assessing the relative humaneness of pest animal control methods*. (Second Edition). Australian Government Department of Agriculture, Fisheries and Forestry, Canberra ACT. Printed by: New Millennium Print.

Ethics

Singer, P. (2011). *Practical Ethics*. 3rd Edition. Cambridge University Press.

Stephens, T. (2012). Chapter 19 'Veterinary Ethics'. In *Applied Ethics: Strengthening Ethical Practices*. Ed Bowden P. Tilde University Press.

Sandøe, P., Corr, S., and Palmer, C. (2015). *Companion Animal Ethics*. UFAW Animal Welfare Series.

Verrinder, J.M., and Phillips, C.J.C. (2017). 'Ethics and Animal Welfare'. In: Hodgson, J., and Pelzer, J. (Editors). *Veterinary Medical Education: A Practical Guide*. Wiley, Chichester, in press.

Physiological and Psychological Aspects of Welfare

Gregory, N.G. (2004) *Physiology and behaviour of animal suffering*. Blackwell Publishing.

Moberg, G.P., and Mench, J.A. (2000). *The biology of animal stress: Basic Principles and Implications for Animal Welfare*. CABI Publishing.

Mellor, D.J., & Beausoleil, N.J. (2015). 'Extending the "Five Domains" model for animal welfare assessment to incorporate positive welfare states'. *Animal Welfare* 24: 241-253.

Mellor, D.J. (2017). *Operational details of the Five Domains Model and its key applications to the assessment and management of animal welfare*. *Animals* 7(8), 60;

Environment and Human Factors

Gregory, N., and Grandin, T. (2007). *Animal Welfare and Meat Production*. 2nd Edition CABI Publishing.

Webster, J. (2011). *Management and Welfare of Farm Animals: The UFAW Handbook*. UFAW Animal Welfare.

Benson, G.H., and Rollin, B.E. (2004). *The well-being of farm animals*. Blackwell Publishing.

Grandin, T. (2014). *Livestock handling and transport*. 4th Edition (T. Grandin, ed), CAB International, Wallingford, UK.

Hemsworth, P.H., and Coleman, G.J. (1998). *Human Livestock Interactions. The Stockperson and the Productivity and Welfare of Intensively Farmed Animals*. New York, Oxford University Press.

NZ MPI (2010). *Good Practice Guide for the Use of Animals in Research, Teaching and Testing*. <http://www.mpi.govt.nz/document-vault/3660>

Veterinary Aspects

Borer-Weir, K. Chapter 5 'Analgesia'. In Clarke, K., Trim, C. (Eds.). (2013). *Veterinary Anaesthesia*. 11th Edition. Elsevier.

Flecknell, P. (2016). *Laboratory animal anaesthesia*. 4th Edition. London, Academic Press.

Frank, D. 'Recognising Behavioral Signs of Pain and Disease' (2014). *Vet Clin Small Anim*. 44:507-524.

Overall, K.L. (2013). *Manual of Clinical Behavioural Medicine for Dogs and Cats*. Mosby.

Other References in areas that might be of interest

Abdul Rahman, S. (2017). 'Religion and Animal Welfare - An Islamic Perspective', *Animals* 7(2) 11, doi:10.3390/anni7020011

Appleby, M.C., Mench, J.A., and Hughes, B.O. (2004). *Poultry Behaviour and Welfare*. CABI Publishing.

Appleby MC, Cussen V, Gorces L, Lambert LA and Turner J (Eds) (2008) *Long Distance Transport and Welfare of Farm Animals*. CABI Publishing.

Ascione FR (Ed) (2008) *The International Handbook of Animal Abuse & Cruelty*. Purdue University Press.

Blazina, C., Boyraz, G., and Shen-Miller, D. (Eds.). (2011). *The Psychology of the Human-Animal Bond*. Springer.

Broom, D.M., and Johnson, K.G. (1993). *Stress and Animal Welfare*. London, Chapman and Hall (Kluwer Academic Publishers).

Dawkins, M.S., and Bonney, R. (2008). *The future of animal farming: Renewing the Ancient Contract*. Wiley-Blackwell.

Dolan, K. (1999). *Ethics, animals and science*. Blackwell Science.

Grandin, T., and Deesing, M.J. (2014). *Genetics and the Behaviour of Domestic Animals*. Academic Press.

McGreevy, P. (2004). *Equine Behaviour*. Saunders.

McMillan, F. (Ed.). (2005). *Mental Health & Well-Being in Animals*. Franklin Blackwell

Mellor, D.J. (2012). *Animal emotions, behaviour and the promotion of positive welfare states*. *New Zealand Veterinary Journal* 60, 1-8.

Monamy, V. (1996). *Animal Experimentation: A Student Guide to Balancing the Issues*. Adelaide, ANZCCART. (<http://www.adelaide.edu.au/ANZCCART/publications/#>)"

Mullan, S., and Fawcett, A. (2017). *Veterinary ethics: navigating tough cases*. 5M.

Panksepp, J. (1998). *Affective neuroscience – The Foundation of Human and Animal Emotions*. Oxford University Press.

Phillips, C. (2002). *Cattle Behaviour and Welfare*. Blackwell Publishing.

Rachels, J. (2014). *The Elements of Moral Philosophy*. McGraw-Hill.

Regan, T. and Singer, P. (Eds.). (1989). *Animal Rights and Human Obligations*. 2nd Edition. New Jersey, Prentice-Hall.

- Rollin, B. (1998). *The Unheeded Cry: Animal Consciousness, Animal Pain and Science*. Iowa State University Press.
- Singer, P. (2001). *Animal liberation*. Ecco.
- Spedding, C.W.F. (2002). *Animal Welfare*. Earthscan.
- Theurer, M.E., et al (2013). 'Remote noninvasive assessment of pain and health status in cattle'. *Vet Clin Food Anim.* 29:59-74
- Tiplady, C. (2013). *Animal abuse: Helping Animals and People*. CABI Publishing.
- Verrinder, J.M., McGrath, N., and Phillips, C.J.C. (2016). 'Science, animal ethics and the law'. In: D. Cao and S. White (Eds), *Animal Law and Welfare - International Perspectives*. Springer, New York. p 63-85.
- Waran, N. (Ed.). (2002). *The Welfare of Horses*. Kluwer Academic Publishers.
- Webster, J. (2016). *Animal welfare: Freedoms, dominions (sic) and 'A Life Worth Living'*. *Animals* 6(5), 35.
- Webster, J. (2005). *Limping towards Eden*. Blackwell Science.
- Webster, J. (2013). *Animal Husbandry regained: The place of farm animals in sustainable agriculture*. Earthscan.
- Young, R.J. (2003). *Environmental Enrichment for Captive Animals*. UFAW.
- Springer Animal Welfare Series:
- The Welfare of Cats (Ed. I. Rochlitz, 2005)
 - The Welfare of Laboratory Animals (Ed. E. Kaliste, 2004)
 - The Welfare of Dogs (Author K. Stafford, 2005)
 - The Welfare of Cattle (Authors J. Rushen, A.M. de Passillé, M.A.G. von Keyserlingk and D.M. Weary, 2008)
 - The Welfare of Pigs (Ed. J.M. Marchant, 2009)
 - The Welfare of Sheep (Ed. C.M. Dwyer, 2009)
 - The Welfare of Animals: the Silent Majority (Author C.J.C. Phillips, 2009)
 - The Welfare of Poultry and other Captive Birds (Eds. I.J. Duncan and P. Hawkins, 2010)
 - Education in Animal Welfare (Author, T. Eadie, 2011)
 - The Welfare of Farmed Flightless Birds (Eds. P. Glatz, C. Lunam and I. Malecki, 2011).
- Springer Animal Behaviour Series:
- Stress and Animal Welfare (Authors D. Broom and K. Johnson)

Journals³

Recommended Journals

Animal Welfare
Animals
Anthrozoos
Applied Animal Behaviour Science
Australian Veterinary Journal
Journal of Applied Animal Welfare Science
Journal of the American Veterinary Medical Association
New Zealand Veterinary Journal
The Veterinary Journal

Additional Journals

Australian Veterinary Practitioner
Canadian Veterinary Journal
Journal of Veterinary: Clinical Applications and Research
Journal of Veterinary Medical Education
Laboratory Animals
Veterinary Clinics of North America

Information Resource Centres

Animal Behaviour (resources for applied ethology) www.animalbehaviour.net [Accessed March 7, 2017]

Animal Welfare Science and Bioethics Centre, Massey University New Zealand (https://www.massey.ac.nz/massey/learning/departments/centres-research/animal-welfare-science-and-bioethics-centre/animal-welfare-science-and-bioethics-centre_home.cfm) [Accessed March 7, 2017]

Animal Welfare Science Centre, Melbourne Australia (<http://www.animalwelfare.net.au>) [Accessed March 7, 2017]

ANZCCART (<http://www.adelaide.edu.au/ANZCCART/>) [Accessed March 7, 2017]

Centre for Animal Welfare and Ethics (<https://veterinary-science.uq.edu.au/centre-animal-welfare-and-ethics>) [Accessed March 7, 2017]

International Fund for Animal Welfare (IFAW) Resource Centre (<http://www.ifaw.org/australia/resource-centre>) [Accessed March 7, 2017]

RSPCA Australia (<http://kb.rspca.org.au/>) [Accessed February 17, 2017]

Universities Federation for Animal Welfare (UFAW) (<http://www.ufaw.org.uk/>) [Accessed March 7, 2017]

World Animal Protection Resources for Veterinary Professionals
<https://www.worldanimalprotection.org.au/our-work/education-animal-welfare/animal-welfare-professionals> [Accessed March 7, 2017].

³ 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.

World Organisation for Animal Health (OIE) Animal Welfare
(<http://www.oie.int/en/animal-welfare/animal-welfare-at-a-glance/>) [Accessed March 7, 2017]

American Veterinary Medical Association Animal Welfare
(<https://www.avma.org/Pages/home.aspx>) [Accessed March 7, 2017]

Anthrozoology Research Group (ARG) (<http://www.anthrozoologyresearchgroup.com/>) [Accessed March 7, 2017]

Australian Veterinary Association (<http://ava.com.au>) [Accessed March 7, 2017]

BVA Animal Welfare Foundation (<https://www.bva-awf.org.uk/advice-vets>) [Accessed March 7, 2017]

Canadian Council on Animal Care (http://www.ccac.ca/en_/) [Accessed March 7, 2017]

New Zealand Veterinary Association
(<http://www.nzva.org.nz>) [Accessed March 7, 2017]

One Welfare <http://onewelfare.cve.edu.au/> [Accessed March 7, 2017]

FURTHER INFORMATION

For further information contact the College Office

Telephone: International +61 (07) 3423 2016

Fax: International +61 (07) 3423 2977

Email: examinations@anzcvs.org.au

Web: www.anzcvs.org.au

Postal Address: Building 3, Garden City Office Park, 2404 Logan Road
EIGHT MILE PLAINS QLD 4113 Australia

© 2017 The Australian and New Zealand College of Veterinary Scientists ABN 00 50 000894 208

This publication is copyright. Other than for the purposes of and subject to the conditions prescribed under the Copyright Act, no part of it may in any form or by any means (electronic, mechanical, microcopying, photocopying, recording or otherwise) be reproduced, stored in a retrieval system or transmitted without prior written permission. Enquiries should be addressed to the Australian and New Zealand College of Veterinary Scientists.