SUGGESTED RESOURCE MATERIAL FOR ABVO EXAMINATION

Revised November 1, 2018

All Written examination questions are supported by a reference within the past seven years or from a textbook or journal article on this list of **"Required"** references.

Required Textbooks

Anatomy, Histology, Embryology

Evans and Christensen. Miller's Anatomy of the Dog, Ocular and Orbital Sections. WB Saunders Co, (Most recent edition; Chapters on eye, orbit, and cranial nerves).

Physiology

Moses. Adler's Physiology of the Eye. CV Mosby Co, (Most recent edition).

Pharmacology

Gelatt (ed.). Veterinary Ophthalmology (5th edition). Wiley-Blackwell 2013. (Chapter 7 by Regnier, Clode, Rankin and Herring).

Pathology

Dubielzig R, et al. Veterinary Ocular Pathology: A Comparative Review. Elsevier, 2010.

Jubb and Kennedy, Pathology of Domestic Animals, (Most recent edition) (eye chapter only). (review general ocular pathology, the histology and basic mechanisms of pathologic lesions for each section of the eye, and pathologic features of diseases directly applicable to veterinary medicine).

Gelatt (ed.). Veterinary Ophthalmology (5th edition), Wiley-Blackwell 2013. (Chapter 8 by Grahn and Peiffer).

Neuro-Ophthalmology

Gelatt (ed.). Veterinary Ophthalmology (5th edition). Wiley-Blackwell 2013. (Chapter 34 by Webb and Cullen).

Miller's Anatomy of the Dog. WB Saunders, (Most recent edition) (Cranial nerve section).

Surgery

Eisner. Eye Surgery, An Introduction to Operative Technique. Springer-Verlag, (Most recent edition). *This text describes instrumentation, fundamentals of microsurgery and surgical procedures including a method for extracapsular lens extraction that may be useful for the surgical portions of the Practical Examination.*

Troutman RC. Microsurgery of the anterior segment of the eye. Volume 1: Introduction and Basic Techniques. Mosby. 1974.

Gelatt (ed.). Veterinary Ophthalmology (5th edition). Wiley-Blackwell 2013. (Chapter 11 by Wilkie).

Seibel BS: Phacodynamics: Mastering the Tools and Techniques of Phacoemulsification Surgery. Slack Inc. (Most recent edition).

Veterinary Clinics of North America. 27:5. Surgical Management of Ocular Disease. September, 1997.

Clinical Ophthalmology

Gelatt (ed.). Veterinary Ophthalmology (5th edition). Wiley-Blackwell 2013.

Veterinary Clinics of North America (All issues and sections specifically relating to ophthalmology from the year 2000 to present. Individual issues/sections specified elsewhere in this reading list are also recommended.)

Gilger BC. Equine Ophthalmology 3rd edition. Elsevier Saunders, Philadelphia, 2017.

Gilger BC, Cook C, Brown M. Standards for Ocular Toxicology and Inflammation (1st edition). Springer 2018.

Textbooks Recommended for Image Recognition exam preparation

The following texts may be useful in preparing for the Image Recognition portion of the examination. No questions will be derived from these texts for the Written portion of the examination.

Barnett KC. Color Atlas of Veterinary Ophthalmology, Williams and Wilkins, (Most recent edition).

Barnett KC. Color Atlas and Text of Equine Ophthalmology, CV Mosby/Wolf, (Most recent edition).

Ketring KL, Glaze MB. Atlas of Feline Ophthalmology. Veterinary Learning Systems, (Most recent edition).

Joan Dziezyc, Nicholas J. Millichamp. Color Atlas of Canine and Feline Ophthalmology. W.B. Saunders (Most recent edition).

Lim CC. Small Animal Ophthalmic Atlas and Guide. Wiley-Blackwell. (Most recent edition).

Required Journals

Past Seven Years of journal articles *in print* prior to January 1 of the year of the examination. Example: for the 2019 ABVO Examination, the date of the first publication covered on the exam range from January 1, 2012-December 31, 2018.

Note: No questions on the Written examination will be derived from case reports that involve single animals. Review of images in these case reports is recommended for Image Recognition exam preparation.

ESSENTIAL VETERINARY JOURNALS (The large majority of questions for the Written examination will be derived from these journals):

American Journal of Veterinary Research
Canadian Veterinary Journal
Journal of Feline Medicine and Surgery
Equine Veterinary Journal
Journal of Small Animal Practice
Journal of the American Animal Hospital Association
Journal of the American Veterinary Medical Association
Veterinary Ophthalmology

(Note: 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 ophthalmic disease.)

OTHER VETERINARY AND HUMAN JOURNALS (Questions derived from pertinent articles* from these journals may occur infrequently on the Written examination):

Current Eye Research
Experimental Eye Research
Graefe's Archives for Clinical and Experimental Ophthalmology
Investigative Ophthalmology and Visual Science
Journal of Ocular Pharmacology and Therapeutics
Journal of Veterinary Internal Medicine
Veterinary Immunology and Immunopathology

Veterinary Pathology
Veterinary Record
Veterinary Surgery

(*Note: Review of basic science, human clinical and other veterinary specialty journals should be limited to those articles dealing with situations or diseases directly applicable to veterinary ophthalmology (eg. where a common domestic animal is used as an animal model). Review of human clinical conditions or basic science articles unrelated to veterinary ophthalmology is not necessary for exam preparation.)

Recommended, Non-required Reading

The following texts and journal articles are considered recommended reading for veterinary ophthalmologists and ophthalmology residents. However, specific exam questions will not originate from these articles or books, most of which are out of print, but still available in many veterinary school libraries.

Textbooks

Havener. Ocular Pharmacology. CV Mosby Co. (Most recent edition).

Duke-Elder. System of Ophthalmology, Vol 1, The Eye in Evolution. CV Mosby Co, 1958 (especially important are chapters on exotic and domestic species).

Prince. Comparative Anatomy of the Eye. CC Thomas, 1956 (recommend review of the rabbit, pig, ruminant sections, other species are covered in more contemporary texts- see below).

Lavach. Large Animal Ophthalmology, CV Mosby Co., 1990.

Rubin. Atlas of Veterinary Ophthalmoscopy, Lea and Febiger, 1974.

Rubin. Inherited Eye Diseases in Purebred Dogs. William & Wilkins, 1989.

Supplemental ("Classic") Journal Article List (Revised 10/2013)

*The following articles are considered recommended reading for veterinary ophthalmologists and ophthalmology residents. However, specific exam questions will **not** originate from these articles. Most are still available in many veterinary school libraries.*

Acland, G.M., and Aguirre, G.D.: Retinal degenerations in the dog: IV. Early retinal degeneration (erd) in Norwegian Elkhounds. *Exp. Eye Res*., 44:491, 1987.

Aguirre, G.D., and Acland, G.M.: Variations in retinal degeneration phenotype inherited at the prcd. locus. *Exp. Eye. Res.* 46:663,1988.

Aguirre, G.D., and Laties, A.: Pigment epithelial dystrophy in the dog. *Exp. Eye. Res*., 23:247, 1976.

Aguirre, G.D., and Rubin, L.F.: Progressive retinal atrophy in the Miniature Poodle: An electrophysiologic study. *J. Am. Vet. Med. Assoc*., 160:191,1972.

Aguirre GD, Rubin LF, Bistner SI. Development of the canine eye. *Am J Vet Res* 1972;33(12):2399-2414.

Aguirre, G.D., et al.: Rod-cone dysplasia in Irish Setters: A defect in cyclic GMP metabolism in visual cells. *Science*, 201:1133, 1978.

Aguirre, G.D.: Electroretinography in veterinary ophthalmology. *J. Am. Anim. Hosp. Assoc*., 9:234, 1973.

Aguirre, G.D.: Retinal degeneration in the dog. I. Rod dysplasia. *Exp. Eye Res*., 26:233, 1977.

Albert, D.M., et al.: Retinal neoplasia and dysplasia. I. Induction by feline leukemia virus. *Invest. Ophthalmol. Vis. Sci*., 16:325, 1977.

Albert, D.M., et al: Canine herpes-induced retinal dysplasia and associated ocular anomalies. *Invest. Ophthalmol. Vis. Sci*., 15:267, 1976.

Anderson: Morphologic recovery in the reattached retina. *Invest. Ophthalmol. Vis. Sci*., 27(2):168-183, 1986.

Bahn CF, Glassman RM, MacCallum DK, Lillie JH, Meyer RF, Robinson BJ, Rich NM.: Postnatal development of corneal endothelium. *Invest Ophthalmol Vis Sci.* 1986 Jan;27(1):44-51.

Bedford PGC. A gonioscopic study of the iridocorneal angle in the English and American breeds of cocker spaniel and the basset hound. *J Small Anim Pract* 1977;18:631-642.

Bellhorn, R.W., and Bellhorn, M.S.: The avian pecten. I. Fluorescein permeability. *Ophthalmol. Res.*, 7:1, 1975.

Bellhorn, R.W., Aguirre, G.D., and Bellhorn, M.B.: Feline central retinal degeneration. *Invest. Ophthalmol. Vis. Sci.* 13:608, 1974.

Bellhorn, R.W.: A survey of ocular findings in 16-to-24-week-old beagles. *J. Am. Vet. Med. Assoc.*, 162:139, 1973.

Bellhorn, R.W.; Fluorescein fundus photography in veterinary ophthalmology. *J. Am. Anim. Hosp. Assoc*., 9:227, 1973.

Bergsma, D.R., and Brown, K.S.: White fur, blue eyes and deafness in the domestic cat. *J. Hered.*, 62:171, 1971.

Berson, E.L., et al.: Retinal degeneration in cats fed casein. II. Supplementation with methionine, cysteine, or taurine. *Invest. Ophthalmol. Vis. Sci*., 15:52, 1976.

Bill, A.: Formation and drainage of aqueous humor in cats. *Exp. Eye Res*., 5:185, 1966.

Bistner, S.I., Rubin, L.F., and Saunders, L.Z.: The ocular lesions of bovine viral diarrhea-mucosal disease. *Vet. Pathology*, 7:272, 1970.

Blair, N.P., Dodge, J.T., and Schmidt, G.M.: Rhegmatogenous retinal detachment in Labrador Retrievers. I. Development of retinal tears and detachment. *Arch. Ophthalmol*., 103:842, 1985.

Blair, N.P., Dodge, J.T., and Schmidt, G.M.: Rhegmatogenous retinal detachment in Labrador Retrievers. II. Proliferative vitreoretinopathy. *Arch. Ophthalmol*., 103:848, 1985.

Bok: Retinal photoreceptor-pigment epithelium interactions. *Invest. Ophthalmol. Vis. Sci*., 26(11):1659-1694, 1985.

Buyukmihci, N.C., Aguirre, G., and Marshall, J.: Retinal degenerations in the dog. II. Development of the retina in rod-cone dysplasia. *Exp. Eye Res*., 30:575, 1980.

Buyukmihci, N.C.: Photic retinopathy in the dog. *Exp. Eye. Res*., 33:95, 1981.

Carmichael, L.E.: The pathogenesis of ocular lesions of infectious canine hepatitis I. Pathology and virological observations. *Pathol. Vet*., 1:73, 1964.

Carmichael, L.E.: The pathogenesis of ocular lesions of infectious canine hepatitis II. Experimental ocular hypersensitivity produced by the virus. *Pathol. Vet*., 2:344, 1965.

Chase, J.: The evolution of retinal vascularization in mammals. *Ophthalmology*, 89:1518-1525, 1982.

Crispin SM, Barnett KC. Dystrophy, degeneration and infiltration of the canine cornea. *J Small Anim Pract* 1983;24:63-83.

Curtis R, Barnett KC. Primary lens luxation in the dog. *J Small Anim Pract* 1980;21:657-668.

Davidson MG et al. Phacoemulsification and Intraocular Lens Implantation: a Study of Surgical Results in 182 Dogs. *Vet Comp Ophthalmol* 1991;1(4):233-238.

de Schaepdrijver L, Simoens P, Lauwers H. Morphologic study of the retinal microvasculature in the dog. *Vet Comp Ophthalmology* 1996;6(2):100-109.

Donovan, A.: The postnatal development of the cat retina. *Exp. Eye Res*., 5:249, 1966.

Gelatt, K.N. et al.: Animal models for inherited cataracts: A review. *Curr. Eye Res*., 3(5):765-778, 1984.

Gelatt, K.N., Henderson, S.F., and Steffen, G.R.: Fluorescein angiography of the normal and diseased ocular fundi of the laboratory dog. *J. Am. Vet. Med. Assoc*., 169:980, 1976.

Gelatt KN, Peiffer RL, Gwin RM, Gum GG, Williams LW. Clinical manifestations of inherited glaucoma in the beagle. *Invest Ophthalmol Vis Sci* 1977;16(12):1135-1142.

Gum, G.C., et al.: Maturation of the retina of the canine neonate as determined by electroretinography and histology. *Am. J. Vet. Res.*, 45:1166, 1984.

Gwin, R.M., Lerner, I., Warren, K., and Gum, G.: Decrease in canine corneal endothelial cell density and corneal thickness as a function of age. *Invest. Ophthalmol. Vis. Sci*., 22:267, 1982.

Hayes, K.C., Nielson, S.W., and Eaton, H.D.: Pathogenesis of the optic nerve lesion in vitamin A deficient calves. *Arch. Ophthalmol*., 80:777, 1968.

Johnston, M.C., et al.: Origins of avian ocular and periocular tissues. *Exp. Eye Res*., 29:27-43. 1979.

Jubb, K.V., Saunders, L.Z., and Coates, H.V.: The intraocular lesions of canine distemper. *J. Comp. Pathol.*, 67:21, 1957.

Kern TJ. Orbital neoplasia in 23 dogs. *JAVMA* 1985;186(5):489-491.

Martin, C.L., and Chambreau, T.: Cataract production in experimentally orphaned puppies fed a commercial replacement for bitch's milk. J. Am. Anim. Hosp. Assoc., 18:115, 1982.

Martin, C.L.: Development of pectinate ligament structure of the dog: Study by scanning electron microscopy. Am. J. Vet. Res., 35:1433, 1974.

Martin, C.L.: Gonioscopy and anatomical correlations of the drainage angle of the dog. J. Small Anim. Prac., 10:171, 1969.

Martin, C.L.: Scanning electron microscopic examination of selected canine iridocorneal angle abnormalities. *J. Am. Anim. Hosp. Assoc*., 11:300, 1975.

Martin, C.L.: Slit lamp examination of the normal canine anterior ocular segment. Part I: Introduction and technique. *J. Small Anim. Pract*., 10:143, 1969.

Martin, C.L.: Slit lamp examination of the normal canine anterior ocular segment. Part II: Description. *J. Small Anim. Pract*., 10:151, 1969.

Martin, C.L.: Slit lamp examination of the normal canine anterior ocular segment. Part III: Description and summary. *J. Small Anim. Pract*. 10:163, 1969.

Martin, C.L.: The normal canine iridocorneal angle as viewed with the scanning electron microscope. *J. Am. Anim. Hosp. Assoc*., 11:180, 1975.

Miller PE, Pickett JP. Comparison of the human and canine Schiotz tonometry conversion tables in clinically normal dogs. *JAVMA* 1992;201(7):1021-1025.

Miller PE, Pickett JP. Comparison of the human and canine Schiotz tonometry conversion tables in clinically normal cats. *JAVMA* 1992;201(7):1017-1020.

Miller PE, Murphy CJ. Vision in dogs. *JAVMA* 1995;207(12):1623-1634.

Millichamp NJ, Dziezyc J.: Cataract phacofragmentation in horses. *Vet Ophthalmol*. 2000;3(2-3):157-164.

Moore CP, Wilsman NJ, Nordheim EV, Majors LJ, Collier LL. Density and distribution of canine conjunctival goblet cells. *Invest Ophthalmol Vis Sci* 1987;28:1925-1932.

Murphy, C.J., and Howland, H.C.: The optics of comparative ophthalmology. *Vision Res*., 27:599, 1987.

Mutti DO, Zadnik K, Murphy CJ.: Naturally occurring vitreous chamber-based myopia in the Labrador retriever. *Invest Ophthalmol Vis Sci*. 1999 Jun;40(7):1577-84.

Narfstrom, K.: Progressive retinal atrophy in the Abyssinian cat: Clinical characteristics. *Invest. Ophthalmol. Vis. Sci*., 26:193, 1985.

Peiffer, R.L., Jr., Gelatt, K.N., and Gum, G.C.: Determination of facility of outflow in the dog comparing in vivo and in vitro tonographic and constant pressure perfusion techniques. *Am. J. Vet. Res*., 37:1473, 1976.

Peiffer RL, Wilcock BP. The Pathogenesis and Significance of Pre-iridal Fibrovascular membrane in Domestic Animals. *Vet Pathol* 1990;27:41-45.

Percy, D.H., Scott, F.W., and Albert, D.M.: Retinal dysplasia due to feline panleukopenia virus infection. *J. Am. Vet. Med. Assoc*., 167:935, 1975.

Priester, W.A.: Congenital ocular defects in cattle, horses, cats, and dogs. *J. Am. Vet. Med. Assoc*., 160:1504-1511, 1972.

Ramsey DT, Hauptman JG, Petersen-Jones SM.: Corneal thickness, intraocular pressure, and optical corneal diameter in Rocky Mountain Horses with cornea globosa or clinically normal corneas. *Am J Vet Res*. 1999 Oct; 60 (10):1317-21.

Riis RC, Sheffy BE, Loew E, Kern TJ, Smith JS. Vitamin E deficiency retinopathy in dogs. *Am J Vet Res* 1981;42:74-86.

Roberts, S.R., and Dellaporta, A., and Winter, F.C.: The collie ectasia syndrome. Pathology of the eyes of young and adult dogs. *Am. J. Ophthalmol*., 62:728, 1966.

Roberts, S.R., Dellaporta, A., and Winter, F.C.: The collie ectasia syndrome. Pathologic alterations of the eyes of pups one to fourteen days of age. *Am. J. Ophthalmol*., 61:1458, 1966.

Roberts, S.R.: The Collie eye anomaly. *J. Am. Vet. Med. Assoc*., 155:859, 1969.

Rodriguez-Peralta L.: The blood-aqueous barrier in five species. *Am J Ophthalmol*. 1975 Oct;80(4):713-25.

Sandberg, M.A. et al.: Full field electroretinograms in miniature poodles with progressive rod-cone degeneration. *Invest. Ophthalmol. Vis. Sci*., 27:1179, 1986.

Schmidt, S.Y., Berson, E.L., and Hayes, K.C.: Retinal degeneration in cats fed casein. I. Taurine deficiency. *Invest. Ophthalmol. Vis. Sci*., 15:47, 1976.

Schmidt, S.Y., et al.: Retinal degeneration in cats fed casein. III. Taurine deficiency and ERG amplitudes. *Invest. Ophthalmol. Vis. Sci*., 16:673, 1977.

Sharpnack, et al.: Vascular pathways of the anterior segment of the canine eye. *Am. J. Vet. Res*., 45(7):1287-1294, 1984.

Shatz, C.J., and Levay, S.: Siamese cat: Altered connections of visual cortex. *Science*, 204:328, 1979.

Shively, J.N., and Epling, G.: Fine structure of the canine eye: cornea. *Am. J. Vet. Res*., 13:713, 1970.

Shively, J.N., and Epling, G.P.: Fine structure of the canine eye: Iris. *Am. J. Vet. Res*., 30:219, 1969.

Shively, J.N., Epling, G.P., and Jensen, R.: Fine structure of the postnatal development of the canine retina. *Am. J. Vet. Res*., 32:283, 1971.

Shively, J.N., Epling, G.P., and Jenson, R.: Fine structure of the canine eye: Retina. *Am. J. Vet. Res*., 31:1339, 1970.

Stryer, L. The molecules of visual excitation. *Sci. American*, 257(1), 42-50, 1987.

Tripathi, R.C., and Tripathi, B.J.: The mechanisms of aqueous outflow in primates, lower mammals and birds. A comparative study. *Exp. Eye Res*., 17:393, 1973.

Tripathi, R.C.: Ultrastructure of the exit pathway of the aqueous in lower mammals. *Exp. Eye Res.*, 12:311, 1971.

Van Buskirk, E.M.: The canine eye: The vessels of aqueous drainage. *Invest. Ophthalmol. Vis. Sci.*, 18:223, 1979.

Whiteley, H.E., et al.: Ocular lesions of bovine malignant catarrhal fever. *Vet. Pathol.*, 22:219, 1985.

Wilcock, B.P., and Peiffer, R.L.: Morphology and behavior of primary ocular melanomas in 91 dogs. *Vet. Pathol.*, 23:418, 1986.

Wilcock, B.P., and Peiffer, R.L.: The pathology of lens-induced uveitis in dogs. *Vet. Pathol*., 24:549, 1987.

Witzel, D.A., et al.: Congenital stationary night blindness: An animal model. *Invest. Ophthalmol. Vis. Sci.*, 17:788-796, 1978.

Wong, et al.: Vasculature of cat eye. *Arch. Ophthalmol*., 72:351-358, 1964.