# **AVOT KNOWLEDGE LIST**

A qualified candidate will “know” or, understand, be familiar with, recognize, utilize, and/or intuit 80% of the following information. The topics listed below are in ADDITION to the Ophthalmology Skills List, and though some overlap will occur, any topic that appears on either list is suitable information for examination.

Ophthalmic Anatomy and Physiology – Identify the parts of the eye and describe their function

1. Orbit \_\_\_\_\_\_\_\_\_\_
2. Eyelids \_\_\_\_\_\_\_\_\_\_
3. Conjunctiva \_\_\_\_\_\_\_\_\_\_
4. The Lacrimal System\_\_\_\_\_\_\_\_\_\_
5. The Globe \_\_\_\_\_\_\_\_\_\_
   1. The cornea
   2. The sclera
   3. The uveal tract
   4. The lens
   5. The vitreous
   6. The retina
6. The optic nerve and central visual pathways\_\_\_\_\_\_\_\_\_\_

Acquired/Inherited ophthalmic disease – Identify and locate ocular lesions; know the treatment options both surgical and medical

1. Ectropion \_\_\_\_\_\_\_\_\_\_
2. Distichiasis \_\_\_\_\_\_\_\_\_\_
3. Trichiasis \_\_\_\_\_\_\_\_\_\_
4. Eyelid injuries \_\_\_\_\_\_\_\_\_\_
5. Blepharitis \_\_\_\_\_\_\_\_\_\_
6. Eyelid Neoplasia \_\_\_\_\_\_\_\_\_\_
7. Injuries to the third eyelid \_\_\_\_\_\_\_\_\_\_
8. Prolapse of the Nictitans gland \_\_\_\_\_\_\_\_\_\_
9. Scrolling of the third eyelid \_\_\_\_\_\_\_\_\_\_
10. Inflammatory condition affecting the third eyelid\_\_\_\_\_\_\_\_\_\_
11. Neoplasia of the third eyelid \_\_\_\_\_\_\_\_\_\_
12. Feline Herpes Virus \_\_\_\_\_\_\_\_\_\_
13. Entropion \_\_\_\_\_\_\_\_\_\_
14. *Chlamydophila* \_\_\_\_\_\_\_\_\_\_
15. Calicivirus \_\_\_\_\_\_\_\_\_\_
16. Keratoconjunctivitis Sicca \_\_\_\_\_\_\_\_\_\_
17. Ulcers \_\_\_\_\_\_\_\_\_\_
    1. Indolent
    2. Superficial
    3. Descemetocele
    4. Corneal perforation
18. Corneal sequestrum \_\_\_\_\_\_\_\_\_\_
19. Pannus \_\_\_\_\_\_\_\_\_\_
20. Pigmentary keratitis \_\_\_\_\_\_\_\_\_\_
21. Eosinophilic keratoconjunctivitis \_\_\_\_\_\_\_\_\_\_
22. Uveitis \_\_\_\_\_\_\_\_\_\_
23. Iris cysts \_\_\_\_\_\_\_\_\_\_
24. Uveal neoplasia \_\_\_\_\_\_\_\_\_\_
25. Hyphema \_\_\_\_\_\_\_\_\_\_
26. Cataract \_\_\_\_\_\_\_\_\_\_
27. Nuclear sclerosis \_\_\_\_\_\_\_\_\_\_
28. Lens luxation \_\_\_\_\_\_\_\_\_\_
    1. Breeds affected
    2. Treatment options
    3. Primary vs. secondary
29. Glaucoma \_\_\_\_\_\_\_\_\_\_
    1. Acute vs. chronic
    2. Breeds affected
    3. Primary vs. secondary
    4. Causes of secondary glaucoma
    5. Treatment options
30. Vitreal Syneresis \_\_\_\_\_\_\_\_\_\_
31. Asteroid hyalosis \_\_\_\_\_\_\_\_\_\_
32. Progressive retinal atrophy \_\_\_\_\_\_\_\_\_\_
33. Sudden acquired retinal degeneration \_\_\_\_\_\_\_\_\_\_
34. Retinal detachment \_\_\_\_\_\_\_\_\_\_
35. Hypertensive retinopathy \_\_\_\_\_\_\_\_\_\_
36. Chorioretinitis \_\_\_\_\_\_\_\_\_\_
37. Taurine deficiency in cats \_\_\_\_\_\_\_\_\_\_
38. Proptosis \_\_\_\_\_\_\_\_\_\_

Congenital ophthalmic disease – Identify and locate ocular lesions; know the treatment options both surgical and medical

1. Ophthalmia neonatorum \_\_\_\_\_\_\_\_\_\_
2. Eyelid agenesis \_\_\_\_\_\_\_\_\_\_
3. Dermoid \_\_\_\_\_\_\_\_\_\_
4. Persistent Pupillary membranes \_\_\_\_\_\_\_\_\_\_
5. Cataract \_\_\_\_\_\_\_\_\_\_
6. Microphakia \_\_\_\_\_\_\_\_\_\_
7. Glaucoma \_\_\_\_\_\_\_\_\_\_
8. Persistent hyaloid artery \_\_\_\_\_\_\_\_\_\_
9. Collie eye anomaly \_\_\_\_\_\_\_\_\_\_
10. Retinal dysplasia \_\_\_\_\_\_\_\_\_\_
11. Microphthalmos \_\_\_\_\_\_\_\_\_\_
12. Multiple ocular defects \_\_\_\_\_\_\_\_\_\_
13. Goniodysgenesis \_\_\_\_\_\_\_\_\_\_

Ultrasonography

1. Physical principles of ultrasound \_\_\_\_\_\_\_\_\_\_
   1. Relating to how to perfect an image
   2. Relation to artifacts
2. Application of normal images for dogs, cats, and horses \_\_\_\_\_\_\_\_\_\_
3. Ocular ultrasound appearance and findings of common acquired ocular disease\_\_\_\_\_\_\_\_\_\_

Electroretinogram

1. Basic concepts of electroretinogram (ERG) recording (electrode placement, patient positioning, eliminating electrical interference, etc.) \_\_\_\_\_\_\_\_\_\_
2. Differentiate normal, abnormal, and electrical inference waves\_\_\_\_\_\_\_\_\_\_

Ocular pharmacology and therapeutics – Identify commonly used ophthalmic medications and relate them to ocular physiology and the treatment of eye conditions; know what drugs are contraindicated with common ophthalmic diseases; know what supplies are needed for injections; know what drugs have common ocular side effects (i.e. KCS inducing)

1. Topical administration \_\_\_\_\_\_\_\_\_\_
2. Local injections \_\_\_\_\_\_\_\_\_\_
   1. Subconjunctival
   2. Intracameral
   3. Intravitreal
   4. Retrobulbar
3. Systemic medication \_\_\_\_\_\_\_\_\_\_
4. Pharmacological agents for ocular use \_\_\_\_\_\_\_\_\_\_
   1. Antimicrobial agents
   2. Antibacterial agents
   3. Antiviral agents
   4. Antifungal agents
   5. Anti-inflammatory drugs
   6. Corticosteroids
   7. Non-steroidal anti-inflammatory drugs
   8. Immunosuppressive agents
   9. Anti-glaucoma drugs
   10. Mydriatic and cycloplegic agents
   11. Tear stimulants and substitutes
   12. Topical anesthetic agents
   13. Ophthalmic dyes
   14. Anticollagenase agents
   15. Fibrinolytic agents

Anesthesia for ophthalmic surgery

1. Local blocks – know preparation for, correct needle size, and what each block does

\_\_\_\_\_\_\_\_\_\_

* 1. Auriculopalpebral
  2. Supraorbital
  3. Lacrimal nerve
  4. Intratrochlear
  5. Zygomatic

1. Pre-anesthetics and their ocular effects \_\_\_\_\_\_\_\_\_\_
2. Patient positioning and effects on ventilations and perfusion\_\_\_\_\_\_\_\_\_\_
3. Intraocular pressure effects of pre-anesthetics and anesthetics\_\_\_\_\_\_\_\_\_\_
4. Oculocardiac reflex \_\_\_\_\_\_\_\_\_\_
5. Fluid therapy and the potential ocular effects \_\_\_\_\_\_\_\_\_\_
6. Neuromuscular blockades \_\_\_\_\_\_\_\_\_\_
7. Diabetics – special precautions \_\_\_\_\_\_\_\_\_\_
8. Air way protection - demonstrate advanced knowledge of methods to avoid airway compromise during positioning for ocular procedures \_\_\_\_\_\_\_\_\_\_

Cranial Nerves and Ocular Involvement – Identify the ocular involvement of each of the cranial nerves

\_\_\_\_\_\_\_\_\_\_

1. CN II – Optic Nerve
2. CN III – Oculomotor nerve
3. CN IV – Trochlear nerve
4. CN V – Trigeminal nerve
5. CN VI – Abducens nerve
6. CN VII – Facial nerve
7. CN VIII – Vestibulocochlear nerve

Ocular Manifestation of Systemic Disease – Identify ocular lesions associated with systemic disease; know what ocular lesions could be seen in association with systemic diseases

1. Viral \_\_\_\_\_\_\_\_\_\_
   1. Adenovirus
   2. Distemper
   3. Herpes
   4. FeLV
   5. FIP
   6. FIV
   7. Equine Viral Disease
      1. EIA
      2. Herpes Virus – 2
      3. West Nile
2. Parasites \_\_\_\_\_\_\_\_\_\_
   1. Dirofilariasis
   2. Toxocara canis
   3. Cuterebra
   4. Ancylostoma
   5. Onchocerciases
   6. Thelazia
   7. Demodex
   8. Habronemiasis
3. Fungal Disease \_\_\_\_\_\_\_\_\_\_
   1. Blastomycosis
   2. Coccidiomycosis
   3. Cryptococcosis
   4. Histoplasmosis
   5. Toxoplasmosis
   6. Aspergillosis
   7. Fusarium
4. Diabetes Mellitus \_\_\_\_\_\_\_\_\_\_
5. Hypertension \_\_\_\_\_\_\_\_\_\_
6. Neoplasia \_\_\_\_\_\_\_\_\_\_
   1. Lymphosarcoma
   2. Melanoma
   3. Squamous Cell Carcinoma
7. Algae \_\_\_\_\_\_\_\_\_\_
   1. Protothecosis
8. Bacterial \_\_\_\_\_\_\_\_\_\_
   1. Brucellosis
   2. Borrelia
   3. Leptospirosis
   4. Bartonellosis
   5. Neonatal Septicemia
   6. Moraxella equi
   7. Streptococcus equi
   8. Rhodococcus equi
9. Immune Mediated \_\_\_\_\_\_\_\_\_\_
   1. Immune Mediated thrombocytopenia
   2. Uveodermatologic syndrome (VKH-like)
   3. Thrombocytopenia
10. Rickettsial \_\_\_\_\_\_\_\_\_\_
    1. Ehrlichia
    2. Rocky Mountain Spotted Fever
11. Hyperlipidemia \_\_\_\_\_\_\_\_\_\_
12. Dental Disease \_\_\_\_\_\_\_\_\_\_
13. Equine Cushing’s disease \_\_\_\_\_\_\_\_\_\_

Applicant Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

I, the undersigned, attest that the above- named applicant has achieved the AVOT definition of “knowledge” of the above topics that are marked with my initials.

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