

# ACVD Program and Study Guide (effective 2020)

*Based on the response of College membership in the 2018 Job Analysis*

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## Disclaimer

The ACVD certifying examination is designed to test the candidate's broad and specific knowledge of the skin and skin disorders (subcellular, cellular, microscopic, macroscopic, structural, physiologic, pathogenic, and clinical). It covers all aspects of dermatology, as well as disciplines related to the skin and skin disease. Although much of our knowledge of skin structure, function, physiology, and pathology is derived from human medicine, the examination will cover all species including small animals, large animals, exotics, laboratory animals, fish, birds and humans. Skin diseases in any species may be examined in detail. Skin diseases of humans for which there are no animal equivalents or that bear no characteristics that are of comparative interest in veterinary dermatology are only of peripheral interest. This study guide will help you understand the extent and depth of knowledge that may be expected of residents and examination candidates. It should not be viewed as all-encompassing and there may be some questions on the examination from topics not covered in this guide.

### ***ACVD Exam Species Specifications***

<b>Species</b>	<b>Percent weight</b>
General/non-species specific	40
Canine	35
Feline	15
Equine	6
Other species	4

## Tasks and Skills

### History/Examination

- Obtain relevant signalment and history through review of the available medical records and consultation to identify the client's concern and patient's condition
- Perform dermatologic examination to identify cutaneous and/or otic abnormalities and patterns of disease
- History/Examination
- Perform physical examination of the patient to determine the status of other organ systems as related to the patient's dermatologic condition

### Assessment

- Formulate a problem list through the analysis of history and examination findings
- Formulate and prioritize differential diagnoses to develop a diagnostic approach for the patient's problem(s) (e.g., pruritus, alopecia, pustules, nodules, relevant systemic signs)

### Diagnostic Techniques

- Formulate a diagnostic plan and discuss options with client
- Perform and interpret dermatologic diagnostic techniques (e.g., skin scrapings, cytology, hair pluck, Wood's lamp examination, dermatophyte culture, skin biopsies, skin allergy testing, video-otoscopy)
- Obtain and interpret results of additional diagnostic tests (e.g., cultures, hematology, serum biochemical analysis, urinalysis, skin biopsies, allergy testing, endocrine assays)
- Request imaging modalities (e.g., radiographs, ultrasonography, CT scan, MRI) and interpret reports
- Establish working/tentative diagnoses to guide a treatment plan

## Treatment/Patient Management

- Assess prognosis related to the tentative/working diagnoses
- Discuss prognosis with the client to facilitate further diagnostic and treatment options
- Formulate and discuss a list of treatment options with the client
- Select and initiate a treatment plan with the client to improve quality of life for the pet and owner
- Monitor and assess the response to treatment and modify the treatment plan and prognosis as indicated

## Professional Responsibility

- Document clinical activities by maintaining accurate and complete medical records
- Consult with or refer to other professionals when indicated to provide the most appropriate patient care
- Communicate in a timely and professional manner about patient care (e.g., with client, primary care veterinarian, and other specialists)
- Follow legal and ethical guidelines to protect the public, enhance patient care, and maintain professional integrity
- Evaluate literature critically and participate in continuing education courses to maintain expertise
- Uphold the ACVD mission to educate the veterinary community and general public to raise the standard of care and increase awareness of dermatologic diseases
- Advance science and knowledge through supporting research in veterinary dermatology

## **Knowledge**

### ***ACVD Exam Content Specifications***

<b>Knowledge domain</b>	<b>Percent weight</b>
Atopy and Hypersensitivity	18
Otology	8
Infectious Diseases	11
Parasitology	8
Structure, Function, and Disorders of Epidermis, Dermis, and Adnexa	12
Immune Function and Immune-Mediated Diseases	9
Internal Medicine, Endocrinology, and Oncology	10
Nutritional and Environmental/Traumatic Disorders	5
Psychoneurodermatology	3
Pharmacology	9
Dermatohistopathology	7

### Atopy and Hypersensitivity

- Origin and physiology of cells that play a role in atopic dermatitis and other hypersensitivities (e.g., keratinocytes, dendritic cells, mast cells, basophils, eosinophils, lymphocytes)
- Origin and physiology of antibodies that play a role in atopic dermatitis and other hypersensitivities
- Role of inflammatory mediators in atopic dermatitis and other hypersensitivities (e.g., biogenic amines, granule proteins, lipid mediators, cytokines, chemokines)
- Pathophysiology of atopic dermatitis (e.g., barrier function, flare factors, pruritus, immune imbalance, superantigens, microbiome alterations, genetics)
- Pathophysiology of other hypersensitivity disorders that affect the skin (e.g., parasite, microbial, adverse food reaction, contact versus irritant reaction, adverse drug reaction, eosinophilic skin disorders)
- Diagnosis of atopic disease and other hypersensitivities (e.g., clinical signs, history, rule out other causes of pruritus, histological features, patch testing, diet trials, allergy testing)
- Allergy testing (e.g., types and methodologies of allergy testing, allergens)
- Immunotherapy (e.g., mechanism of action, allergen selection, formulation, delivery, side effects)

- Management of atopic disease and other hypersensitivities (e.g., avoidance, topical and systemic therapeutics)

### Otology

- Anatomy and physiology of the ear
- Pathophysiology of external and middle ear disease (e.g., predisposing, primary, secondary, and perpetuating factors and causes, polyps, PSOM)
- Diagnosis of external and middle ear disease (e.g., clinical signs, cytology, sample selection, acquisition and submission, report interpretation, video otoscopy)
- Treatment and prognosis of external and middle ear disease (e.g., topical and systemic therapeutics, ototoxicity, husbandry/grooming, hygiene, surgery)

### Infectious Diseases

- Characteristics of the normal skin flora and microbiome (e.g., diversity, regional variation, skin immune response including tolerance)
- Normal cutaneous and immune defenses against infectious diseases (e.g., pattern recognition receptors including TLR, antimicrobial peptides, fatty acids)
- Geographic distribution of infectious organisms that cause dermatologic disease (e.g., fungal, mycobacterial)
- Characteristics of infectious organisms that cause dermatologic disease (e.g., for viruses, rickettsia, mycoplasma, L-forms, bacteria, fungi, oomycetes)
- Pathophysiology of dermatologic disease caused by infectious organisms (e.g., host, vector, mode of transmission, biofilm, immune response)
- Diagnosis of dermatologic diseases caused by infectious organisms (e.g., skin lesions, systemic clinical signs, cytology, sample selection and acquisition, submission, report interpretation)
- Management of infectious dermatologic diseases and their transmission (e.g., topical and systemic therapeutics, surgery, environmental control, client education)
- Zoonoses and reportable diseases related to dermatology
- Veterinary relevant dermatophyte diagnosis (e.g., culture techniques and identification, PCR testing)
- Resistance, virulence factors, and immune response (e.g., *Staphylococcus*, *Pseudomonas*, dermatophytes, *Malassezia*)

### Parasitology

- Life cycle and biology of arthropods, protozoa and helminths related to dermatology
- Geographic distribution of arthropods, protozoa and helminths that cause dermatologic disease
- Pathophysiology and clinical features of dermatologic disease caused by arthropods, protozoa, and helminths
- Diagnostic parasitology and its application to dermatologic disease (e.g., laboratory diagnostics, identification)
- Management of dermatologic disease caused by arthropods, protozoa and helminths (e.g., parasiticides, anti-inflammatories, environmental)
- Zoonoses and reportable diseases related to dermatology

### Structure, Function, and Disorders of Epidermis, Dermis, and Adnexa

- Anatomy and physiology of the epidermis related to keratinization (e.g., epidermal cell kinetics, differentiation, cornification, desquamation)
- Anatomy and physiology of the skin basement membrane, dermis, and subcutis (e.g., collagen, elastic fibers, extracellular matrix, adhesion molecules, vasculature, lymphatics)
- Anatomy and physiology of the hair follicle and glandular structures (e.g., hair cycle, embryology, gross and microscopic features, hormones and growth factors, anal sacs, perianal glands)
- Anatomy, physiology, and diseases of special keratinized structures (e.g., claw, hoof, feather, beak, horn, footpad, nasal planum)
- Anatomy, physiology, and pathophysiology of pigmentation (e.g., melanocytes, melanogenesis, post-inflammatory changes, normal coat color variation)

- Pathophysiology of keratinization disorders (e.g., primary and secondary)
- Pathophysiology of hair follicle and glandular disorders (e.g., dysplasia, traumatic, hair cycle arrest, non-scarring/scarring alopecia, sebaceous adenitis, anhidrosis, acne)
- Pathophysiology of congenital/hereditary skin diseases
- Diagnosis of keratinization disorders (e.g., clinical signs, sample selection and acquisition, submission, report interpretation)
- Diagnosis of hair follicle and glandular disorders (e.g., clinical signs, trichography, sample selection and acquisition, submission, report interpretation)
- Diagnosis of congenital/hereditary diseases (e.g., clinical signs, genetic testing, sample selection and acquisition, submission, report interpretation)
- Diagnosis, management, and prognosis of pigmentary disorders
- Management and prognosis of keratinization disorders (e.g., topical and systemic therapeutics, husbandry/grooming)
- Management of hair follicle and glandular disorders (e.g., topical and systemic therapeutics, surgery, husbandry/grooming)
- Management and prognosis of congenital/hereditary diseases (e.g., topical and systemic therapeutics, husbandry/grooming)

### Immune Function and Immune-Mediated Diseases

- Characteristics of the innate and acquired immune system of the skin (e.g., cells, soluble factors, receptors, barrier functions, adhesion molecules, antigen presentation/MHC, tolerance, antigen processing)
- Immune-mediated disease pathogenesis principles (e.g., initiation, antibody vs. cell mediated, immune complexes, genetics)
- Pathophysiology of diseases that affect the skin (e.g., auto-immune or immune-mediated diseases of any cutaneous structures)
- Diagnosis of immune-mediated diseases that affect the skin (e.g., skin lesions, systemic clinical signs, cytology, sample selection and acquisition, submission, report interpretation)
- Management and prognosis of immune-mediated diseases that affect the skin (e.g., topical and systemic therapeutics, environmental)

### Internal Medicine, Endocrinology, and Oncology

- Systemic disorders with dermatologic manifestations (e.g., endocrine, vascular, lymphatic, paraneoplastic, infectious, immune-mediated)
- Systemic signs associated with dermatologic disorders (e.g., fever, lethargy, gastrointestinal abnormalities)
- Anatomy, physiology, and pathophysiology of endocrine glands that affect the skin (e.g., thyroid, adrenal, pituitary, gonadal)
- Interactions and activity of hormones in normal and diseased animals (e.g., hormones, protein binding, receptors)
- Diagnostic tests for endocrine disorders affecting the skin
- Management of endocrine disorders affecting the skin
- Effect of exogenous hormone therapy in normal and diseased animals
- Diagnosis, management, and prognosis of dermatologic symptoms related to systemic diseases with dermatologic manifestations (e.g. hepatocutaneous, paraneoplastic)
- Cancer pathogenesis principles (e.g., initiation, progression, environmental factors, cell cycle)
- Diagnosis and management of non-neoplastic tumors of the skin (e.g., clinical signs, cytology, surgery, laser, cryotherapy)
- Principles of diagnosis and prognosis of neoplastic tumors of the skin (e.g., clinical signs, cytology, biopsy, gross features of malignancy)
- Differentiation of cutaneous round cell tumors (e.g., cytology, biopsy)
- Diagnosis, prognosis, and management of epitheliotropic lymphoma
- Pathogenesis, diagnosis, prognosis, and management of preneoplastic and neoplastic solar induced lesions
- Diagnosis, prognosis, and management of viral-induced neoplasia

### Nutritional and Environmental/Traumatic Disorders

- Protective and reparative mechanisms of the skin and hair (e.g., thermoregulation, wound healing)
- The role of optimal nutrition in maintaining healthy skin and keratinized tissue (e.g., zinc, protein, fatty acids)
- Synthesis and utilization of vitamins and fatty acids relevant to skin health
- Dermatologic disorders related to diet (e.g., vitamins, minerals, proteins, phytates, flavones)
- Congenital and acquired nutritional disorders that affect the skin (e.g., lethal acrodermatitis, photosensitivity)
- Use of nutritional supplementation for the treatment of skin disorders (e.g., zinc, vitamin A, phytoestrogens, n-3 fatty acids)
- Diagnosis, management, and prognosis of traumatic/environmental dermatologic disorders (e.g., burns, bites, envenomation, callus, pressure sores, photosensitization, temperature related-disorders)

### Psychoneurodermatology

- Neuroanatomy and neurobiology of the skin (e.g., Merkel cells, A and C fibers, specialized nerve sensors)
- Pathophysiology of pruritus (e.g., soluble mediators, allergic vs. neurogenic, thresholds and summation effect, gate theory)
- Diagnosis of psychogenic and neurogenic diseases (e.g., clinical signs, history, referral and report interpretation, behavior and response to therapy)
- Management and prognosis of psychogenic and neurogenic diseases (e.g., topical and systemic therapeutics, behavior modification)

### Pharmacology

- Pharmacokinetics of topical and systemic therapeutics used in dermatological practice (e.g., drug absorption, distribution, metabolism, elimination)
- Pharmacodynamics of topical and systemic therapeutics used in dermatological practice (e.g., mechanism of drug action, relationship between concentration and effect, pharmacogenomics)
- Side effects and drug interactions of topical and systemic therapeutics used in dermatological practice

### Dermatohistopathology

- Histologic and histopathologic terminology and interpretation of biopsy reports
- Histopathologic patterns of disease (e.g., images, written description)
- Special stains