Diets for cats must provide complete nutrition and meet the needs of the individual patient. There is no single diet that is perfect for all cats, and veterinarians must consider the needs of the cat as well as the preferences of the owners when making dietary recommendations. This article focuses on the interface between animal factors and nutritional needs in cats and is divided into 3 sections. Section 1 addresses the dietary needs of healthy cats, including differences among life stages. Section 2 addresses common myths regarding feline nutrition. Section 3 addresses common nutrient-sensitive conditions in cats, including sarcopenia of aging.

To provide the best dietary recommendations to maintain optimal patient health, veterinarians must be able to assess a patient’s nutritional status and offer necessary diet adjustment recommendations. Because obtaining accurate diet histories and answering owner questions about specific diet options can be time-consuming, this article summarizes efficient methods to complete this process. Short case illustrations of common nutrition calculation equations and an example diet history form are included. Members of the entire veterinary team can be involved with the assessment process to reduce the veterinarian’s workload, while improving the quality of information obtained and the recommendations made for the pet.

In this article, we review cats’ feeding behaviors, and discuss ways of feeding cats that promote physical and mental/behavioral health, while providing cats with choices that allow expression of preferences. We address the management of several feeding issues that cat owners may face, such as obesity, pickiness, begging for food, and feeding in multi-cat households. Food puzzles are one way to provide environmental enrichment for cats, and food can be used in multiple ways for behavior modification in the clinical setting, including counterconditioning and differential reinforcement of alternative behaviors.
Regenerative medicine is a complex field of research, with much hope placed on the ability to use regenerative therapies such as stem cells to provide new treatment options for many frustrating disease processes in human and veterinary medicine. Significant research is still needed and ongoing from basic mechanistic studies to advanced bioengineering applications to practical cell delivery methods. Small studies of mesenchymal stem cell therapy shows significant promise in inflammatory feline diseases. Continued research will hopefully help determine the potential of mesenchymal stem cell therapy in feline medicine and lead to development of safe and effective products for clinical use.

Feline chronic gingivostomatitis is a frustrating disease to manage owing to its elusive etiopathogenesis and its subsequently suboptimal treatment options. Nevertheless, efforts to shed light on the disease over the past few decades have advanced the knowledge on its potential etiopathogenesis and the success rates of available treatment options. Further research is ongoing, with promising attempts to better understand and treat this, likely, multifactorial disease.

The era of Precision / Genomic Medicine has arrived and can improve the veterinary healthcare of companion animals. The goal of Precision / Genomic Medicine is to use an individual’s DNA signature / profile to tailor their treatments of their specific health problems. Whole genome sequencing is now a cost-effective diagnostic tool, leading to the discovery of DNA variants associated with health outcomes. These DNA variants become genetic tests and can readily be applied to future cases of individuals with similar symptoms. This article addresses the current state of Precision Medicine in domestic cats and the implications for veterinary care.

The era of precision/genomic medicine has arrived, including its application within veterinary medicine for the health care of companion animals. The plummeting costs of assaying large groups of genetic tests into one panel has led many laboratories offering direct-to-consumer (DTC) genetic testing for animals, including cats. However, proper education of the consumer and the veterinarian is lacking, causing a significant lack of genetic counseling pertaining to the results of the genetic tests. This article addresses the current state of DTC testing in domestic cats and the implications for veterinary care.
Feline Infectious Peritonitis: Update on Pathogenesis, Diagnostics, and Treatment
Melissa A. Kennedy

Feline infectious peritonitis (FIP) is a mysterious and lethal disease of cats. The causative agent, feline coronavirus (FCoV), is ubiquitous in most feline populations, yet the disease is sporadic in nature. Mutations in the infecting virus combined with an inappropriate immune response to the FCoV contribute to the development of FIP. Diagnosis can be challenging because signs may be vague, clinical pathology parameters are nonspecific, and the gold standard for diagnosis is invasive: histopathology of affected tissue. This article discusses the developments in the understanding of this disease as well as the progress in diagnosis and treatment.

What's New in Feline Leukemia Virus Infection
Katrin Hartmann and Regina Hofmann-Lehmann

Feline leukemia virus (FeLV) is a retrovirus with global impact on the health of domestic cats that causes tumors (mainly lymphoma), bone marrow disorders, and immunosuppression. The importance of FeLV is underestimated due to complacency associated with previous decline in prevalence. However, with this comes lowered vigilance, which, along with potential for regressively infected cats to reactivate viremia and shed the virus or develop clinical signs, can pose a risk to feline health. This article summarizes knowledge on FeLV pathogenesis, courses of infection, and factors affecting prevalence, infection outcome, and development of FeLV-associated diseases, with special focus on regressive FeLV infection.

Hypertension: Why Is It Critical?
Rebecca F. Geddes

Hypertension is a common problem, particularly in older cats. Hypertension secondary to a concurrent disease is the most common form of hypertension in cats, particularly in association with chronic kidney disease or hyperthyroidism. However, idiopathic hypertension may account for up to 24% of cases. Any form of persistent hypertension risks target organ damage (TOD), therefore measurement of blood pressure is vital in at-risk cats to identify occult hypertension before TOD occurs. This article addresses when and how to perform blood pressure measurement in cats, TOD that has been documented in this species, and our evidence basis for treating hypertension.

Primary Hyperaldosteronism in Cats: An Underdiagnosed Disorder
Hans S. Kooistra

Primary hyperaldosteronism, also known as Conn’s syndrome, is the most common adrenocortical disease in cats. As in humans, this disease is underdiagnosed in cats. Cats presenting with systemic arterial hypertension, hypokalemia, or both quite often are only treated symptomatically without further investigations. This practice may potentially exclude a significant number of cats from receiving appropriate treatment. It is therefore important for general practitioners to be aware of the disease. This article
describes the (patho)physiology, clinical presentation, diagnostic approach, and treatment options of for feline primary hyperaldosteronism.

Hyperthyroidism in Cats: Considering the Impact of Treatment Modality on Quality of Life for Cats and Their Owners

Mark E. Peterson

In cats, hyperthyroidism can be treated in 4 ways: medical management with methimazole or carbimazole, nutritional management (low-iodine diet), surgical thyroidectomy, and radioactive iodine \((^{131}\text{I})\). Each form of treatment has advantages and disadvantages that should be considered when formulating a treatment plan for the individual hyperthyroid cat. Medical and nutritional managements are considered “reversible” or palliative treatments, whereas surgical thyroidectomy and \(^{131}\text{I}\) are “permanent” or curative treatments. The author discusses how each treatment modality could be the optimal choice for a specific cat-owner combination and reviews the advantages and disadvantages of each treatment option.

Updates in Feline Diabetes Mellitus and Hypersomatotropism

Linda Fleeman and Ruth Gostelow

Flash glucose monitoring is a novel, noninvasive monitoring technique that is increasingly used in the management of small animal diabetes. This article provides guidance on the use of flash glucose monitoring in cats and demonstrates how this technique can be used in a range of feline diabetic cases, including those where management is proving challenging. Other aspects of complicated feline diabetic care are also discussed, including management of the sick diabetic cat, potassium depletion myopathy, and treatment options for cats with hypersomatotropism-associated diabetes mellitus. The use of insulin glargine 300 U/ml as a promising new long-acting insulin for diabetic cats is also discussed.

Is It Being Overdiagnosed? Feline Pancreatitis

Julien Bazelle and Penny Watson

In recent years, increased awareness of feline pancreatitis by the veterinary profession and improved diagnostic modalities have led to an increased frequency of diagnosis of pancreatitis in this species. Consequently, pancreatic diseases, especially chronic pancreatitis, are considered highly prevalent, even in populations of apparently healthy individuals. This prevalence has led to the suspicion that the condition may be overdiagnosed. This article summarizes the difficulties of diagnosis of acute and chronic pancreatitis, assesses the reasons why this is a challenging disease to recognize, and considers whether these difficulties could result in either overdiagnosis or underdiagnosis.

Evidence-Based Medicine: Ultrasound-Guided Percutaneous Cholecystocentesis in the Cat

Craig B. Webb

Cholangitis is a common cause of hepatobiliary disease in the cat. Feline cholangitis is characterized as neutrophilic (acute or chronic), lymphocytic,
or caused by liver flukes. The neutrophilic form is caused by bacterial infection of the biliary system, and identification of the specific bacterial agent guides treatment. Bile is the sample of choice for cytology and bacterial culture in these cases, and percutaneous ultrasound-guided cholecystocentesis is used to obtain that sample. This review covers the literature that provides evidence for safety and usefulness of percutaneous ultrasound-guided cholecystocentesis as part of the diagnostic work-up of cats suspected of having hepatobiliary disease.

**Triaditis: Truth and Consequences**

Jonathan A. Lidbury, Shankumar Mooyottu, and Albert E. Jergens

Clinical findings with triaditis and individual disease components overlap and may include hyporexia, weight loss, lethargy, vomiting, diarrhea, dehydration, icterus, abdominal pain, thickened bowel loops, pyrexia, dyspnea, and shock. A definitive diagnosis of triaditis requires histologic confirmation of inflammation in each organ, but this may not be possible because of financial or patient-related constraints. Evidence-based data indicate that histologic lesions of triaditis are present in 30% to 50% of cats diagnosed with pancreatitis and cholangitis/inflammatory liver disease. Treatment of triaditis is based on the overall health status of the patient and the type and severity of disease in component organs.

**Neurobehavioral Disorders: The Corticolimbic System in Health and Disease**

Clare Rusbridge

Video content accompanies this article at [http://www.vetsmall.theclinics.com](http://www.vetsmall.theclinics.com).

The corticolimbic system (prefrontal cortices, amygdala, and hippocampus) integrates emotion with cognition and produces a behavioral output that is flexible based on the environmental circumstances. It also modulates pain, being implicated in pathophysiology of maladaptive pain. Because of the anatomic and function overlap between corticolimbic circuitry for pain and emotion, the pathophysiology for maladaptive pain conditions is extremely complex. Addressing environmental needs and underlying triggers is more important than pharmacotherapy when dealing with feline orofacial pain syndrome or feline hyperesthesia syndrome. By contrast, autoimmune limbic encephalitis requires prompt diagnosis and management with immunosuppression and seizure control.