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Popular Article

Nutritionally responsive disorders of companion animals

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Abstract

Nutritionally responsive disorders are becoming increasingly common in companion animals, affecting their health and well-being. These disorders can range from obesity to nutrient deficiencies and can lead to a variety of health problems such as diabetes mellitus, skin infection, chronic kidney disease (CKD), Periodontal disease and joint problems etc. On the other hand, nutrient deficiencies can arise due to an imbalanced diet or a lack of essential nutrients. This can result in various health problems such as skin and coat issues, weakened immune systems, digestive problems and developmental abnormalities. Fortunately, these disorders are preventable through proper nutrition and lifestyle choices. Pet owners can ensure their pets receive a balanced diet that meets their nutritional needs by consulting with a veterinarian or animal nutritionist. Additionally, regular exercise and weight management can help prevent obesity and improve overall health. In conclusion, nutritionally responsive disorders are a growing concern for pet owners. By being mindful of their pet's diet and lifestyle, owners can help prevent these disorders and promote a happy and healthy life for their furry companions.

Introduction

Nutritionally responsive disorders are health conditions that are caused by an improper or inadequate diet. These disorders can affect the health of cats and dogs in many ways, including poor growth, weakened immune system, digestive problems, skin and coat issues, and even behavioral problems.

These are majorly classified into two categories, which are,

1. **Conditions associated with undernutrition**:

e.g. vitamin or mineral deficiencies, interaction among nutrients - for eg High level of Ca in diets may interfere with absorption of other divalent captions such as zinc.High levels of

zinc can reduce the availability of copper in the body.

2. Conditions associated with overnutrition: e.g. Obesity or hypervitaminosis

Here is, a list of some common nutritionally responsive disorders in cats and dogs, along with their prevention and cure,

1. Obesity:

Obesity is defined as,"the excessive accumulation of fat in the adipose storage areas of the body" (Case et al., 2000).

An alternative definition of obesity is based on actual bodyweight,if the bodyweight is in excess of 15-20% above normal or ideal, then that individual is generally considered to be obese.

Obesity is a common problem in pets, especially in cats and dogs that are overfed or have a sedentary lifestyle.

It can lead to a variety of health issues, including joint problems, diabetes, and heart disease. The primary cause of obesity in pets is overfeeding and lack of exercise.

Prevention of obesity involves feeding pet a balanced diet and ensuring they get enough exercise. Follow feeding guidelines provided by pet food manufacturers and avoid giving pet table scraps or human food. Provides pets with regular opportunities for exercise, such as daily walks or playtime.

If the pet is already overweight or obese, treatment may involve dietary changes and increased exercise. Also recommend a weight loss program that includes a low-calorie diet and regular exercise. They may also recommend supplements or medications to aid in weight loss.

2. Diabetes mellitus:

Diabetes is a common condition where glucose levels of the body are poorly regulated, due to either lack of production of the hormone insulin, made in the pancreas or an increase in resistance of tissues in the body to the effects of insulin.

It can be caused by genetic predisposition, obesity, or pancreatitis.

Majorly classified into two categories

A. Type-1 diabetes mellitus (Insulin Dependent Diabetes Mellitus)

   It results from total or near-complete destruction of the beta-cells.

B. Type-2 diabetes mellitus (Non-insulin Dependent Diabetes Mellitus)

   In this condition insulin producing cells are remain but the amount of insulin produced is insufficient. Most common in older dogs.

Clinical Signs:

They are polyuria, polydipsia, polyphagia, weight loss, owners occasionally report acute blindness secondary to cataract formation.

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Diagnosis:

DM is diagnosed by the presence of the typical clinical signs (excess thirst, excess urination, excess appetite, and weight loss), in addition the presence of a persistently high level of glucose in the blood stream, and the presence of glucose in the urine. The normal level of glucose in the blood is 80-120 mg/dl (4.4-6.6mmol/l). It may rise to 250-300 mg/dl (13.6-16.5mmol/l) following a large or high-calorie meal.

Treatment:

- Short-acting insulin
- Intermediate-acting insulin
- The feeding of a high complex carbohydrate (>50% dry matter), high fiber diet (>10% dry matter) to dogs with DM.

Prevention and control involve a healthy diet, physical exercise, being a normal body weight. Type1 diabetes managed with insulin injections. Type 2 diabetes may be treated with medications with or without insulin.

3. Skin and coat disorders:

Nutritionally imbalanced diets can lead to a variety of skin and coat disorders in dogs and cats. These disorders can be caused by a lack of essential nutrients, an excess of certain nutrients, or the presence of harmful additives or contaminants in the food.

Some common skin and coat disorders caused by nutritionally imbalanced diets include:

- Dry, flaky skin
- Dull, brittle coat
- Excessive shedding
- Itching and scratching
- Hot spots
- Allergic reactions

Prevention of these disorders involves feeding a pet a balanced diet that meets their nutritional needs. Look for high-quality pet food that contains a balance of protein, carbohydrates, fats, vitamins, and minerals. Avoid foods that contain artificial preservatives, colors, or flavors, as well as those that have been contaminated with toxins or bacteria.

Regular grooming and hygiene practices can also help prevent skin and coat disorders. Brushing regularly can help distribute natural oils throughout their coat and prevent matting and tangles. Bathing a pet with a gentle, hypoallergenic shampoo can help remove dirt and allergens that can contribute to skin problems.

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4. chronic kidney disease (CKD)

Chronic kidney disease (CKD) occurs commonly in older dogs and cats.Dietary modification has been shown to increase survival and quality of life and involves more than protein restriction as diets modified for use with CKD are lower in phosphorus and sodium, potassium and B-vitamin replete, and alkalinizing, and they contain n3-fatty acids. Additionally, recognition and management of CKD-associated diseases such as systemic arterial hypertension, proteinuria, and anemia benefit patients.

Clinical signs of CKD:

Increased thirst and urination, decreased appetite, Vomiting, Bad breath, Lethargy etc.

Dietary modification is an important component of treating patients with CKD. Dietary modification can be used to offset many deficiencies and excesses that occur with CKD. It is more than protein restriction as diets formulated for use in patients with CKD are calorically dense, phosphorus and sodium restricted, have increased potassium and B vitamins, contain omega 3 fatty acids, contain soluble fiber, and are alkalinizing. Dietary modification has been shown to increase quality and quantity.

5. Digestive Problems:

Digestive problems such as diarrhea, constipation, and vomiting can be caused by an improper diet or food allergies. Prevention includes feeding a balanced diet with high-quality ingredients. The cure involves dietary changes and medication if necessary.

6. Joint Problems:

Joint problems such as arthritis can be caused by excess weight or nutritional deficiencies. Prevention includes weight management and feeding a balanced diet with joint-supporting nutrients. The cure involves medication and dietary changes.

7. Periodontal disease:

The disease begins with the accumulation of bacterial plaque on the tooth surfaces initiating an inflammatory response that affects the supporting tissues of the tooth and eventuate in the total loss of tooth attachment.

Dental disease also can be caused by a buildup of plaque and tartar on the teeth, which can lead to tooth decay and gum disease. Prevention includes regular dental checkups and a balanced diet. The cure involves dental cleaning and extractions if necessary.

Conclusion:

Nutritionally responsive disorders can have a significant impact on the health of cats and dogs. These disorders can have significant negative impacts on the health and well-being

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of our furry friends. However, by understanding the role that proper nutrition plays in preventing and managing these disorders, pet owners can take proactive steps to ensure their pets live long and healthy lives. This includes providing a balanced and complete diet, consulting with a veterinarian to create a customized diet plan, and monitoring their pet's health and behavior for any signs of nutritional deficiencies or imbalances. By taking these steps, pet owners can help prevent and manage nutritionally responsive disorders, and give their pets the best possible chance for a happy and healthy life. Ultimately, the key to success is education and awareness, and by staying informed about the latest research and best practices in pet nutrition, we can all help our furry friends thrive.

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