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TOP STORIES

SCIENTISTS DEVELOP NEW FLU VACCINES FOR DOGS

Scientists at the University of Rochester School of Medicine and Dentistry have developed two live-attenuated vaccines against H3N8 canine influenza virus, using a genetic engineering technique called reserve genetics to create a live vaccine that replicates in the nose, but not in the lungs. In the safety & efficacy study, this live vaccine was found safe and able to induce better immune protection against H3N8 canine influenza virus in mice and dog tracheal cells than a commercially available inactivated vaccine.

DOG STOOL MICROBIOME PREDICTS CANINE INFLAMMATORY BOWEL DISEASE

Researchers at University of California, San Diego School of Medicine discovered a pattern of microbes indicative of IBD in dogs. With more than 90 percent accuracy, the team used that information to predict which dogs had IBD. However, they also determined that the gut microbiomes of dogs and humans are not similar enough to use dogs as animal models for humans with this disease.

MARS RELEASES FELINE DNA GENETIC TEST

Mars Veterinary released a new DNA genetic health test for cat breeders under the brand Optimal Selection. The test was developed in partnership with Genoscoper Laboratories, a Helsinki, Finland company known for its DNA testing for pets. The Optimal Selection test lets breeders screen individual cats for more than 25 mutations. This first-of-its-kind disease testing panel to cat breeders enables them to work proactively to identify diseases in their litters. It can help them to make informed choices and may reduce the likelihood of producing kittens with preventable genetic conditions.

FDA ALERTS VETERINARIANS AND PET FOOD MANUFACTURERS ABOUT POTENTIAL PRESENCE OF THYROID HORMONES IN PET FOODS AND TREATS

The U.S. Food and Drug Administration is advising pet owners and caretakers, veterinarians, and the pet food industry to be aware that pet food and treats made with livestock gullets (meat from the throat region) have the potential to contain thyroid tissue and thyroid hormones. The FDA is issuing this alert now after a recent Center for Veterinary Medicine investigation into reports of three dogs in different households that showed signs of hyperthyroidism. The source of thyroid hormones is likely from the use of gullets from which the thyroid glands were not completely removed before adding to pet food or treats.

ZOETIS TO ACQUIRE NEXVET VETERINARY BIOLOGIC THERAPEUTICS CO.

Zoetis, headquartered in Parsippany, N.J announced it will purchase Nexvet Biopharma veterinary biologic therapeutics company. Nexvet, founded in 2010 and headquartered in Tullamore, Ireland, develops monoclonal antibody (mAb) therapies for companion animals in pain and other therapeutic areas. Nexvet's pipeline product ranevetmab, an mAb targeting nerve-growth factor for treatment of chronic pain associated with osteoarthritis in dogs, would be the companion animal industry's first monoclonal antibody therapy administered monthly by injection for chronic pain. Nexvet is also developing frunevetmab, a monoclonal antibody targeting NGF to treat chronic pain associated with osteoarthritis in cats. According to Zoetis, the acquisition will strengthen the company's portfolio of solutions for chronic pain management in dogs and cats.

PETS ALTER INFANTS' MICROBIOTA TO LOWER RISK OF ALLERGIES, OBESITY

A new study found that infants who were exposed to pets before & after birth demonstrated a twofold increase in the abundance of *Ruminococcus* and *Oscillospira* in their guts, compared with infants not exposed to household pets. These changes in gut bacteria were found to be linked to lower risk of allergies and obesity.

ELANCO OFFERS ORAL RINGWORM TREATMENT FOR CATS

Elanco Animal Health, Greenfield, Ind., has launched an oral itraconazole treatment for ringworm in cats, marketed under the name Itrafungol. While itraconazole is available in formulations for humans and compounded into a form for veterinary patients, Itrafungol is the first FDA-approved formulation of itraconazole for veterinary use in cats.

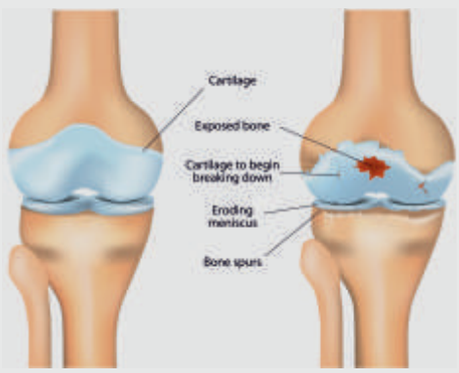
OSTEOARTHRITIS IN DOGS: A COGNIZANCE

About 20 per cent of adult dogs and 80 per cent of geriatric dogs suffer from osteoarthritis.

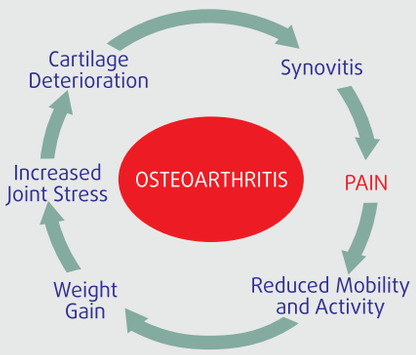
More than 50% of dogs with OA go undiagnosed.

Osteoarthritis is not cured, but its symptoms are treated in order to improve the quality of life for the dog.

Prevalence of Osteoarthritis in pets
- 35% of dogs over the age of 4 yrs
- 20% of cats over the age of 2 yrs
- 45% of dogs between 8 - 12 yrs
- 90% of the cats over the age of 12 yrs



Normal OA

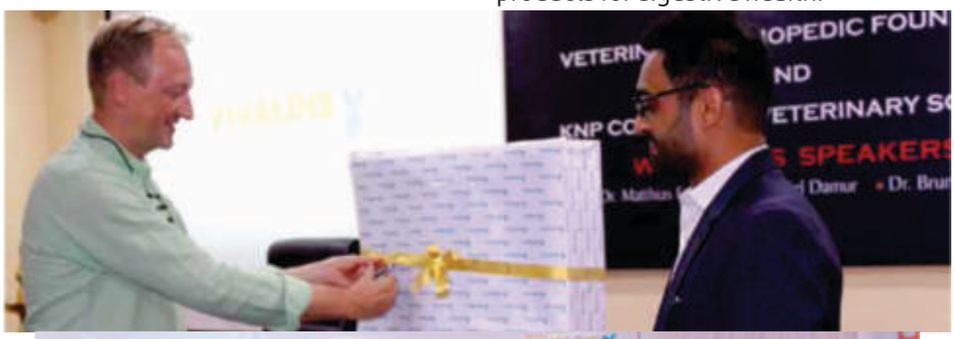


Risk factors:

- Advanced age
- Large size
- Fast growth
- Genetic predisposition & congenital disorders
- Working dogs/athletes
- Trauma
- Obesity/overweight

VIVALDIS LAUNCHES COSEQUIN, WORLD'S LEADING PET JOINT CARE PRODUCT IN INDIA

Vivaldis announces its collaboration with Bioiberica, a Spanish biotech company, which is specialized in research, development, production and commercialisation of 'biomolecules'. Bioiberica has consolidated its leadership in production of Glycosaminoglycans including Chondroitin sulphate, Hyaluronic acid & Glucosamine. Under the collaboration, Cosequin, a world's leading joint care product, has been launched in India during the Orthopedic Workshop held recently at Shirval in Maharashtra. Vivaldis has plans to introduce three more new products from Bioiberica in near future. The new range will include a product for atopic dermatitis and two products for digestive health.



Permanent Acupuncture With Gold Bead Implants For Hip Dysplasia In Dogs

A two years follow-up double blinded study was conducted by Gry Jæger at Norwegian School of Veterinary Science, on pain-relieving effect of gold bead implantation in dogs with hip-joint arthritis. After six months the effect of the treatment was considered. The dogs with implanted gold had significantly less pain and minimal loss of function compared to those that had not received gold. After further year and a half follow-up, 80% of the dogs still showed a positive effect of treatment. Although hip dysplasia had not improved & many dogs showed increased calcification round the affected hip joints, but they lived better after the gold treatment.

Gold bead implants are a permanent form of acupuncture dealing with chronic diseases. Gold beads are used to treat degenerative joint disease, osteochondritis, ventral spondylosis, and seizures.

Acupuncture stimulates an endogenous response resulting in analgesia, healing and immune modulation.

REGENERATIVE MEDICINE FOR CANINE OSTEOARTHRITIS

1. STEM CELL THERAPY: A NEW THERAPY FOR OLD DISEASES

Traditional multi-modal therapy of canine osteoarthritis involves reducing inflammation and pain with long term NSAID therapy, physical therapy, diet and weight management & dietary supplements. In veterinary medicine, the use of Mesenchymal stem cells (MSC), isolated from bone marrow or adipose tissue, as alternative modality for treating orthopaedic conditions is increasing. These cells are found in a variety of tissues and have the ability to rapidly proliferate and differentiate to musculoskeletal lineages including bone and cartilage. MSCs can differentiate into several cell types including cardiomyocytes, endothelial cells, adipocytes, chondrocytes, and osteocytes . They have an affinity for damaged joint tissue; recent studies have confirmed that stem cells have the ability to localize and participate in the repair of damaged joint structures. MSCs have significant effects on regeneration and maintenance of articular cartilage, modulating local inflammatory response & releasing anti-inflammatory chemicals, inducing anti-apoptotic effects and the stimulation of endothelial progenitor cell proliferation which are speculated to repair damage in the joint. MSCs have recently been suggested as a new cell source for OA treatment in accordance with their ability to differentiate into chondrocytes and the paracrine effects of secretedbioactive substances. The anti-inflammatory and immunomodulatory effects of MSCs may also retard the progression of OA. Recent commercial MSC-based therapies for OA in which a suspension of MSCs is injected into the osteoarthritic lesions have been developed . A 2005 pilot study showed that dogs with induced meniscal tears when treated with stem cells had improved angiogenesis, chondrogenesis, prominent immune cell infiltrate and proliferation of the fibroblasts compared to untreated controls.

2. PLATELET-RICH PLASMA THERAPY: A NOVEL APPROACH

Platelet-rich concentrates (PRC), such as PRP have gradually started to gain attention in the treatment of various acute and chronic sport injuries, particularly tendon and ligament injuries, in both human and veterinary medicine. Platelet-rich plasma (PRP) is an autogenous fluid concentrate composed primarily of platelets and growth factors. Recent studies have shown PRP to mediate healing by supplying growth factors, cytokines, chemokines, and other bioactive compounds. Growth factors stored in the platelets such as platelet-derived growth factor (PDGF), transforming growth factor ɴ1 (TGF-ɴ1), insulin-like growth factor 1 (IGF-1), vascular endothelial growth factor (VEGF), basic fibroplastic growth factor (bFGF) and epidermal growth factor (EGF), take part in the regulation and synthesis of the articular cartilage . PRP have been shown to act either individually or synergistically to enhance cellular migration and proliferation, angiogenesis, and matrix deposition to promote tendon and wound healing, aid in bone healing, and counteract the cartilage breakdown that is associated with osteoarthritis One recent study in dogs with partially transected cranial cruciate ligaments and meniscal release demonstrated improved range of motion, decreased pain, and improved limb function for up to 6 months—after treatment with 5 intra-articular injections of leukoreduced PRP—compared with the control group.

References:

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EARLY NEUTERING RAISES RISK OF JOINT DISORDERS IN GERMAN SHEPHERDS

Researchers from the University of California at Davis have found that neutering or spaying German shepherds before one year of age triples the risk of one or more joint disorders – particularly for cranial cruciate ligament, or CCL, tears. The research was conducted over a fourteen-and-a-half year long period on intact and neutered/spayed) German shepherd dogs for joint disorders and cancers.

Findings included:
7% intact males were diagnosed with one or more joint disorders, compared to 21% of males neutered prior to a year of age
In intact females, 5% were diagnosed with one or more joint disorders, while in females neutered prior to one year of age this measure was significantly increased to 16%
Mammary cancer was diagnosed in 4% of intact females compared with less than 1% in females neutered before one year of age. (The occurrence of the other cancers followed through eight years of age was not higher in the neutered than in the intact dogs.)
Urinary incontinence, not diagnosed in intact females, was diagnosed in 7%of females neutered before one year of age.

SCIENCE SPEAKS

LARGEST DOG GENETIC STUDY CONCLUDES

Researchers from Cornell University (Cornell) investigated 180,000 genetic markers, DNA sequences with a known physical location on a chromosome in 4,200 dogs. They found 17 genes for body size in dogs that can predict a dog's size with 90 percent accuracy. In the study, the researchers conducted simulations to show that the genetic risk factors for most major diseases in dogs can be identified.

RESEARCHERS STUDY ANIMALS IN MOTION

French physicists studied the relationship between speed and size, from bacteria to the largest mammals, and concluded that body length, not mass, determines an animal's speed. The researchers also concluded that animals move 10 body lengths per second, reported Gizmodo Australia. Paleontologists at Brown University in Providence, R.I., have developed open-source software that makes X-rays of bones and joints moving inside live animals. The researchers are then able to manipulate the bones and joints, not only to learn how fossilized creatures might have moved, but also to anticipate neurological conditions in today's animals.

CLIMATE CHANGE IMPACTED CANINE EVOLUTION

In a study, published in Nature Communications, researchers examined 40 million year old dog fossils discovered in North America, and, specifically, the elbow joints of such fossils, which were compared with those from approximately two million years ago and identified morphological differences. Older elbows, were made for grabbing prey; "newer" elbows were made for running. Due to climatic changes, the canines' bodies adapted to "pursuit hunting" rather than "ambush" hunting. The researchers concluded that climate change and its impact on vegetation and habitat structure played a critical role, not only for ecological innovation but also in altering canine evolution.