



Where You Refer Your Patient First Makes All The Difference

## INSIDE THIS ISSUE

JANUARY/FEBRUARY 2024 Volume 17 - Issue 1

## 1 Prosthetics for Small Animals

Catherine A. Loughin, DVM, DACVS, DACCT

## 2 A Note from the Editor

Leonard J. Marino, MD, FAAP, LVT

## **10 Food Therapy for Pets**

Michel Selmer, MS, DVM, CTCVMP, CVMMP, Integrative Medicine

## **PROSTHETICS FOR SMALL ANIMALS**

Catherine A. Loughin, DVM, DACVS, DACCT



We as veterinarians have recommended limb amputation for birth defects, severe traumatic injuries or tumors of the limbs. Dogs and cats can usually navigate on three limbs and there is no social stigma associated with limb loss; therefore, amputation has been a good option for most animals. However, studies involving limb amputated animals have revealed secondary conditions that occur due to the changes in stance and gait. These include ligament breakdown causing carpal or tarsal collapse; cranial cruciate injury; chronic neck and back pain; weight gain; and muscle pain syndromes. Such issues can affect the quality of life for an animal and result in euthanasia. Also large and giant breed dogs

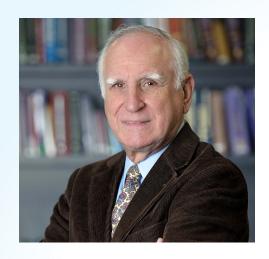
or animals with concurrent osteoarthritis are not always good candidates for amputation. Prosthetics offer the option of lower joint level amputations, including partial paw, instead of amputations at the hip or shoulder joints.

In recent years the technology used to construct prosthetic limbs for humans has been applied to animals. Prosthetics are made using thermosetting laminate plastic and closed cell thermo-foams, providing a snug fit for weight bearing comfort and functional use. Prosthetic paws have a rocker bottom surface for a smoother gait, and a rubber grip on the bottom that allows for good traction on slippery surfaces and longer use of the prosthetic paw. Custom colors and cosmetic designs are available (Fig 1). Current technology provides a prosthetic limb for the front or hind limb so long as 40 to 50% of the radius/ulna or tibia/fibula are present.

Most animals adapt very well to the use of a prosthetic limb. Familiarizing the animal to the prosthetic limb, learning to walk properly in the limb as well as learning to negotiate the environment is necessary in the early stages. The residual limb must be checked daily for skin

Continued on page 4

## A NOTE FROM THE EDITOR



We are now entering our 26th year at LIVS with a referral center that has the only 3 Tesla MRI to complement the spiral 3-dimensional

CT scanner, the digital radiography system, and a thermography suite on Long Island. These imaging methodologies in pet care diagnostics and treatment permit us to remain at the forefront of cutting-edge veterinary care locally, nationally, and worldwide. Our staff members continue to lecture nationally and internationally to a broad audience of veterinarians. LIVS continues to be the focus of more successful standard, mini, micro, and nano total hip replacement procedures than any veterinary facility in the world. It is with personal pride that this editor has served as surgical assistant to the chief of staff at LIVS in over 700 total hip replacement procedures since the first one in 1998.

In January 2008, "LIVS in PlainView" first appeared. It will continue to feature articles originating from LIVS personnel on continuing education topics as well as dedicated columns featuring items of interest to practicing veterinarians.

Locally, Long Island weather has, despite a substantial snowstorm in late January, not interrupted the function of LIVS as a 24-hour facility serving all of Long Island's veterinary emergency needs. A noted national TV and airwave personality, Bill O'Reilly, has commented on his show more than once that his dog "Holly" was operated on at LIVS and he vividly praised the facility and surgical care received.

## Here are some photos of events held recently at LIVS.













The Wendy and Gail Waller Holiday luncheon that they have hosted yearly. The Waller family are part of the LIVS family and are noted animal welfare advocates and lovers of all creatures. Their support for pets in need and generosity towards the LIVS team is so greatly appreciated!

The 15th Annual Holiday Baking Event at Ronald McDonald House. LIVS staff members, led by our outreach coordinator Jeannie O'Brien, bake treats for the house residents and their families being treated at the Northwell facility.

The LIVS-sponsored breakfast for LIU College of Veterinary Medicine students. LIVS provided an assortment of sandwiches and juices to celebrate the last week of classes.

Finally, the LIVS family wished Rosette and Annelouise a retirement full of health and happiness. We thanked them both for their over twenty years of dedication and commitment to LIVS.

All our departments remain fully staffed to serve our patients at all hours of every day and night.

Consultations and appointments can be made by calling (516) 501-1700. Our Integrative Medicine Department directed by Dr. Michael Selmer, a practitioner of Traditional Chinese Veterinary Medicine, holds hours regularly at LIVS and can be reached by calling (516) 501-1700.

We hope the New Year will bring to our loved ones, our families, and our pets the joys of life and a brighter 2024. As before, we welcome all comments. Please submit them to Imarino@livs.

-Leonard J. Marino, MD, FAAP, LVT

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## WHERE YOU REFER YOUR PATIENTS FIRST MAKES ALL THE DIFFERENCE



Jonathan Goodwin, DVM, MS DACVIM (Cardiology) Cardiology



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Dominic J. Marino, DVM DACVS, DACCT, CCRP Surgery, Neurosurgery, Radiation Therapy, Physical Rehab



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## **EMERGENCY DEPARTMENT OPEN 24/7**



## **Prosthetics for Small Animals**

Continued from front cover

irritation or wounds. Excessive activity while wearing the prosthetic limb must be monitored. The prosthetic limb must be kept clean and in good working condition.



**Figure 1** Prosthetic for a left hind tarsus.

Human beings receiving a prosthetic limb undergo professional rehabilitation, and it is important for animals with prosthetic limbs as well. Most animals quickly adapt to a prosthetic limb, but there is a learning period. During this time the animal will need to learn to recognize the ground through the prosthetic, learn to step up and over obstacles, sit, lay down, get up, stairs, getting in and out of vehicles, and manage on different surfaces (ground, carpet, hardwood floor, etc.). Rehabilitation will also take into consideration the secondary muscle strain and weakness, and focus on pain relief and strengthening. Maintenance of the prosthetic is required for life, and the company that makes the prosthetic will work with you and the owner to make sure fit and longevity of the prosthetic are retained.

## Case

Lulu is a 1 year-old female spayed mixed breed dog. She was hit by a car and sustained a skin avulsion to the left thorax and abdomen, degloving injury right medial hind limb (including shearing from the stifle to the metatarsals), and traumatic amputation of the distal paw on the left hind limb (Fig 2). She was treated for shock and once stabilized her wounds were addressed. The left hind paw was hanging by the skin with no intact nervous nor blood supply, and therefore needed to be removed. This left a stump at the tarsometatarsal joint (Fig 3). Both limbs and the thorax/

abdominal wound were managed as open wounds with daily bandage changes until healthy tissue enabled closure. Due to the age of the dog, her high activity level, and damage to the right tarsus a prosthetic was considered for the left hind limb.



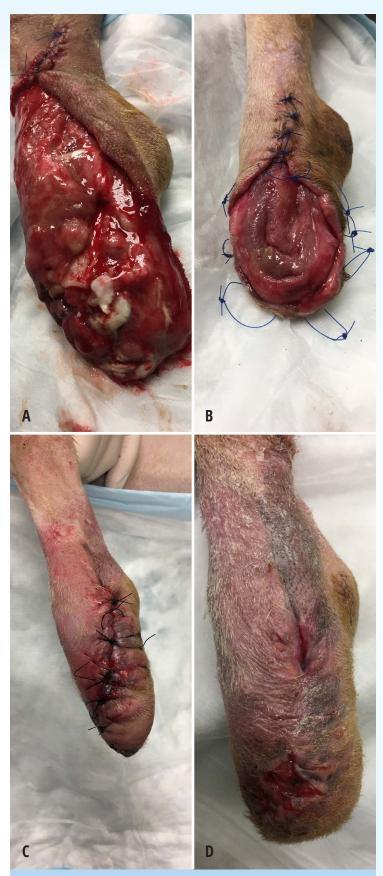
**Figure 2** Left hind limb paw at time of presentation.

The left thoracic/abdominal wound needed a vacuum system to assist with primary closure and took 2 weeks before an H-plasty was used for closure. The medial side of the right hind limb grew healthy granulation tissue, but due to the bone shearing and loss of ligament, the right tarsus was fused with a medial pantarsal arthrodesis plate 11weeks after the injury. The left hind limb stump was surgically debrided, medicinal honey was used for the anti-bacterial and anti-inflammatory properties, and alginate dressings were used until healthy granulation tissue was noted. The wound was then slowly closed to stretch the skin and cover the stump. This took 12 weeks. During this time a metasplint fitted with 3 stockinette donuts covered in tape was used as a temporary prosthetic to allow Lulu to use both hind limbs for ambulation during the healing period (Fig 4)



**Figure 3** Radiographs of lateral left tarsus after amputation of the paw.

A mold of the left hind limb stump was made by us and sent a company certified to make a prosthetic. It took 6 weeks for the prosthetic to be made and mailed to the owner. We made sure the prosthetic fit Lulu, and then had her walk around the hospital (Fig 5). Due to the 9 weeks Lulu spent in the handmade splint, she was able to acclimate to the prosthetic quickly. A 3-ply sock needs to be placed over the stump before the prosthetic is velcroid into place. The owner followed instructions for acclimation and has purchased several socks so they can be laundered regularly. As Lulu gets more comfortable with the prosthetic and her skin has toughened, we hope that she will be able to go for walks with her owner and run across the yard again.



**Figure 4** Progression of the left hind stump. A) 7 day post trauma, B) 36 day post trauma, C) 66 day post trauma, and D) 75 day post trauma.



**Figure 5** The stump day of prosthetic fitting (A) and Lulu is prosthesis (B).

**Integrative Medicine** 

The best of both worlds in veterinary medicine.

The Integrative Medicine Team takes a holistic and gentle approach to treating animal disorders and puts an emphasis on the patient's emotional and mental well-being. Dr. Michel Selmer is one of only a handful of Traditional Chinese Veterinary Medicine Practitioners that holds a Master's Degree in the United States.

## Services offered include:

- Acupuncture
- Chinese Herbology
- Class IV Cold Laser Therapy
- Medical Manipulation (Chiropractic Care)
- Food Therapy
- Herbal Medicine
- Nutritional Consults
- Tui-na Massage



To refer your patients to Dr. Selmer, call 516-501-1700 or visit livs.org

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Long Island Veterinary Specialists

When you need to do more than 'scratch' the surface...

# There's LIVS Dermatology Service

Between flea allergies, food allergies, and environmental factors, pets are presenting with allergy symptoms throughout the year.

## Our dermatology service offers the following:

- Allergy testing
- Allergy shots
- Skin cytology
- Skin biopsies
- Bacterial cultures and sensitivity testing
- Skin scrapings

Long-term management is often required for chronic skin conditions and our team is here to provide the necessary relief that your patients desperately need!

\*All dermatology cases seen at LIVS are reviewed by a board certified dermatologist via telemedicine.

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7

# **VETTRIAGE**



## After-Hours Video Telehealth Triage Services

## **DVM Video Sessions**



24/7 video telehealth services provided by experienced, US-based veterinarians that triage client-perceived pet emergencies. Connect minutes, no software downloads or appointments needed, connect in minutes in 3 easy steps from any computer or mobile device.

## Maintain Veterinary Quality of Life



Eliminate the need for a veterinarian or technician to be on-call after-hours and overnights. This has shown to substantially improve recruitment efforts for new vets and technicians for clinic partners.

## Your Cases Stay Your Cases



VetTriage is a seamless extension of your clinic, and are recommended to follow-up with you, their primary veterinarian. A session summary is emailed to both your office and your client allowing you to reference their triage session and insert it into the medical records.

## No Cost to the Clinic



VetTriage services are offered at no cost to your clinic! The client pays a small triage session fee to video chat with our veterinarians. Save money by eliminating the need for an after-hours answering service, whom are not medically trained and a source of frustration for the client.

## Cases are Triaged for Actual Emergencies

Nearly 80% of cases do not require a visit to the ER and the unnecessary expense associated with it. These cases are given advice and are re-directed back to the clinic for follow-up, diagnostics, and treatment. While actual emergencies are sent to the ER for immediate evaluation.

## Enhance Client Loyalty and Trust



Instill comfort in your current clientele that a reliable and experienced telehealth service is available during times of limited office hours and for emergency triage during after-hours, overnights, and holidays.

For more information contact our medical director Shadi Ireifej, DVM, DACVS at

(845) 527-9812 or shadi.ireifej@vettriage.com



## A revolution in chronic elbow OA pain management



# Synovetin OA 1 simple treatment relieves OA pain up to I full year.

## For easy, enduring relief of chronic OA pain, use Synovetin OA.

- Long-lasting relief: Up to 1 full year of OA pain relief
- Consistent effectiveness: 92% (12/13) in mild to moderate elbow OA<sup>1</sup>, 71% (10/14) in severe<sup>2</sup>
- Non-systemic: No systemic adverse effects<sup>3</sup>
- Convenient: 1 simple, targeted procedure
- 1. Aulakh KS, Lopez MJ, Hudson C, et al. Prospective clinical evaluation of intra-articular injection of tin-117m (117mSn) radiosynoviorthesis agent for management of naturally occurring elbow osteoarthritis in dogs: A pilot study. Veterinary Medicine: Research and Reports. 2021;12:1-12.
- 2. Donecker J, Fabiani M, Gaschen L, Aulakh KS. Treatment response in dogs with naturally occurring grade 3 elbow osteoarthritis following intra-articular injection of Sn (tin) colloid. PLoS ONE. 2021;16(7). e0254613.https://
- 3. Lattimer JC, Selting KA, Lunceford JM, et al. Intraarticular injection of a Tin-117m radiosynoviorthesis agent in normal canine elbows causes no adverse effects. Vet Radiol Ultrasound. 2019:1-8. doi: 10.1111/vru.12757.

Homogeneous Tin (117mSn) Colloid] Veterinary Device for Use in Dogs

### NAME: Synovetin OA

Tin (117mSn) stannic colloid in ammonium salt. It is supplied as a 2-4 mCi (74-148 MBq)/mL suspension for intra-articular (IA) injection.

Vials contain a prescribed dose up to 6.0 mCi (222 MBq) at the date and time to treat one dog.1 mL of suspension contains 2-4 mCi (74-148 MBg) of tin (117mSn) stannic colloid in ammonium salt at the date and time of end use.

### PRODUCT DESCRIPTION

Synovetin OA® is a conversion electron therapeutic veterinary device comprising a colloidal, sterile suspension with a pH between 6.5 and 9.0 where at least 90% of the particles have a size between 1.5 µm and 20 µm (HORIBA light scatter instrument). The 117% Sn emits monoenergetic conversion electrons (significant energies 127–158 keV; emission probability 113%) and imageable gamma radiation (159 keV, 86% abundant). Accompanying low-energy emissions are Auger electrons (<22 keV) and X-rays (<30 keV). The half-life of "TmSn is 14 days. 117mSn decays by isomeric transition to stable "TSn."

Excipients include ammonium carbonate ((NH,) 2CO,), ammonium chloride (NH,CI), ammonium iodide (NH,I), iodine (L) and trace tin (Sn) salts.

Synovetin OA® is a veterinary device consisting of a homogeneous tin colloid which emits discrete (<300 μm) low-energy conversion electrons confined to the joint space. The colloid is composed of microparticles (1.5 µm to 20 µm) that are retained in the joint space of the dog. The particles are absorbed and retained by synoviccytes and macrophages in the synovium, resulting in apoptosis and reduction of inflammatory cells. Elimination of the pro-inflammatory cells reduces inflammation of the joint synovium, thereby reducing pain associated with synovitis. The data, including radiographic evidence, supports use in Grade 1, 2, and 3 osteoarthritis (OA) of the elbow joint.

Federal law restricts this device to sale by or on the order of a licensed veterinarian trained in the use of radioactive veterinary medical products. Use of this product is restricted to facilities with a compatible Radioactive Materials (RAM) license

Synovetin OA® is intended to reduce synovitis and associated pain of canine elbow joints afflicted with osteoarthritis

### WARNINGS

Do not exceed 6.0 mCi (222 MBq) of radiation activity per dog per treatment. Not for use in humans. Keep this and all medications out of reach of children. Consult a physician in case of accidental injection or ingestion by humans.

Injection should be performed only by a licensed veterinarian skilled in the delivery of intra-articular (IA) injections who is located at a facility that has a RAM license

Rigorous aseptic technique must be ensured during injection

### ROUTE OF ADMINISTRATION

Intra-articular injection. The product must NOT be administered by any other route. Confirmation of needle placement is recommended, whether by anatomical landmarks, fluoroscope, C-arm, ultrasound, or radiography.

## Available here!



For more information, contact us at (516) 501-1700

Dogs should be appropriately anesthetized or deeply sedated prior to administration to prevent vocalization and resistance to dosing. A 22-ga. needle can be used to inject Synovetin OA® directly into the elbow joint. Pain during and after treatment may occur. Administration of non-steroidal anti-inflammatory agents at the labeled dose may help any post-treatment pain

### FREQUENCY OF ADMINISTRATION

If needed, Synovetin OA® can be readministered to a previously treated elbow at least 12 months after the last treatment.

### DURATION OF EFFECT FROM ADMINISTRATION

Effectiveness has been shown to last up to 12 months following a single treatment of dogs with naturally occurring OA of the elbow

Total radiation dose per joint should not exceed 3.0 mCi/joint, with the total body dose not exceeding 6.0 mCi (i.e., two elbow joints during a 12-month period).

MAXIMUM ANNUAL DOSE

Dogs participating in clinical studies to evaluate safety and effectiveness (n=74 dogs, 97 elbow joints) exhibited no significant adverse reactions when administered Synovetin OA®. Discomfort in the treated elbow has been rarely reported in some dogs up to 72 hours after treatment. If adverse events are observed or suspected, please report them by calling Exubrion Therapeutics' Customer Service at 1-833-942-1247

Following administration of Synovetin OA®, the dog can recover with other post-operation animals in the general clinic population. Once the dog has fully recovered from anesthesia, it can be discharged to go home with the approval of the facility radiation safety officer or authorized user. All treatment site policies and license requirements should be observed.

### OWNER INSTRUCTIONS FOR POST-TREATMENT CARE

When the level of radiation is determined to be below the established levels for release, the dog can be discharged. The dog will rever, retain a low level of radioactivity in the treated joint(s) for a short period of time. Specific written instructions based post-treatment radiation dosimetry for care and proximity to the treated dog will be provided by the radiation safety officer (RSO) or authorized user (AU) of a radioactive materials (RAM)-licensed veterinary hospital to the dog owner. These instructions include information on limiting proximity to the dog in the post-treatment period. If in the judgement of the veterinarian, the dog owners are not likely to comply with the release instructions, the product should not be administered. A RAM-licensed veterinary hospital RSO or AU should contact Exubrion Therapeutics® if there are specific questions. Apart from the proximity requirements to protect people there is no requirement for restraint of the dog itself, and it can resume its normal level of activity subject to the distance requirements.

### MANUFACTURED BY Theragenics Corporation for Exubrion Therapeutics®

Manufacturer's contact information: Theragenics Corporation 5203 Bristol Industrial Way Buford, GA 30518 Customer Service Phone: 833-942-1247 info@exubrion.com

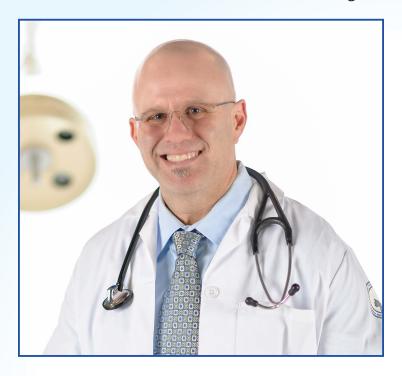
### STORAGE INSTRUCTIONS

Store in the shipping container at controlled room temperature (10°-30°C or 50°-86°F) until ready to use



## **FOOD THERAPY FOR PETS**

Michel Selmer, MS, DVM, CTCVMP, CVMMP, Integrative Medicine



Hippocrates said, "Let food be thy medicine, and let medicine be thy food," in 400 BC, indicating that for centuries people have realized nutrition was important to help prevent and cure disease. Food therapy is a component of Traditional Chinese Veterinary Medicine (TCVM) that uses specific foods and herbs to treat pets based on genetic tendencies, age, species, environment, disease patterns, personality, and stress levels. Food therapy does not simply involve recommending generally healthy foods, but rather prescribing particular foods based on the pet's individual needs. Food therapy selects and combines the appropriate foods for your four-legged friend to restore and maintain their balance and optimal health.

## Food therapy goals for pets

Food therapy's purpose is to determine each pet's distinct patterns and suggest ingredients that can benefit their individual needs and constitution. Food therapy recipes can be classified as follows:

- Health promotion and prevention These diets are meant to improve health on an everyday basis and to prevent climate-related and seasonal problems.
- Disease treatment These diets are formulated to complement primary treatments for clinical conditions, such as skin problems, autoimmune disease, otitis, cancer, kidney and liver disease, and immunodeficiency.

Food therapy is not meant to replace traditional medicine but to enhance conventional and integrative therapies.

## Food therapy philosophy for pets

Food therapy is based on TCVM's Five Element Theory, which takes a holistic approach to pets' health and healing by organizing the body into five functioning organ systems that correspond with natural elements. Each element has unique properties that influence the digestive system and overall health and wellness. Foods are classified as cooling or warming in each of the five elements, which include:

**Water element** — The water element governs the kidneys and bladder and includes foods that contain water to help cleanse and detoxify the body, flush out toxins, and hydrate cells.

- Warming water element foods include beef, lamb, chicken, and ginger.
- Cooling water element foods include cucumber, watermelon, mung bean, and cabbage.

**Wood element** — The wood element governs the liver and gallbladder, which store and release bile to help break down fats.

- Warming wood element foods include oatmeal, brown rice, millet, and honey.
- Cooling wood element foods include celery, lettuce, broccoli, and sprouts.

**Fire element** — The fire element governs the small intestine and heart and includes hot or spicy foods that help increase circulation and metabolism.

- Warming fire element foods include chili pepper, cinnamon, nutmeg, and cloves.
- Cooling fire element foods include watermelon, tomatoes, strawberries, and oranges.

**Earth element** — The earth element governs the spleen and stomach, which are responsible for food digestion.

- Warming earth element foods include sweet potatoes, yams, peanuts, and sesame seeds.
- Cooling earth element foods include radishes, beets, and carrots.

**Metal element** — The metal element governs the lungs and colon, which help control breathing and body fluid and waste removal.

- Warming metal element foods include pumpkin, squash, and ginger.
- Cooling metal element foods include pears, apples, bananas, and papaya.

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## Flavors can influence food therapy for pets

Your pet can receive therapeutic benefits from different flavors, such as:

- **Bitter** Bitter foods cool down the body and direct energy downward, helping to reduce inflammation.
- **Sweet** Sweet foods nourish bodily fluids and aid digestion. Processed sugars create internal heat and inflammation and lead to conditions such as obesity and diabetes, while healthy sweet foods such as Chinese yams can help boost energy levels and aid digestion.
- **Spicy** Spicy foods can help with moving energy outward and with treatment of respiratory issues.
- **Salty** Salty foods, which help cool the body and move energy inward, help improve thyroid function.
- **Sour** Sour foods can help with GI issues, such as diarrhea.

## Seasonal influence on food therapy for pets

Food choices should be balanced and modified with the season, especially in northern climates with dramatic seasonal changes. Considerations include:

• **Spring and summer** — Spring and summer foods should help your pet reduce and dispel heat and stay hydrated.

• **Fall and winter** — Fall and winter foods should help keep your pet warm, but not stimulate inflammation.

## Temperature and color can influence food therapy for pets

A food's temperature and color can also influence their effect on the body. Specifics include:

- **Temperature** Warm foods help with digestion and circulation, while cool foods help calm the mind.
- **Color** Different-colored foods target specific body areas that need attention. For example, black foods, such as blackberries and black beans, can help with kidney issues; yellow foods, such as ginger, squash, and yams, can aid digestion; and leafy green foods can minimize liver problems.

Food therapy combined with other treatment modalities can enhance your pet's overall treatment effectiveness and help ensure an optimal outcome. If you would like to learn more about food therapy and the Integrative Medicine services provided by Dr. Michel Selmer, contact Long Island Veterinary Specialists at (516) 501-1700, or visit us at livs.org.

# **Cutting-Edge Surgical Care**

When surgery is determined to be the best option, your patients will be in excellent hands at LIVS.

## **Surgery Services**

- Emergency Surgery
- Interventional Radiology (stents)
- Minimally-Invasive (arthroscopy, thoracoscopy, • Stem Cell Therapy laparoscopy, rhinoscopy)
- Neurosurgery
- Oncologic Surgery
- Orthopedic Surgery
- Soft Tissue Surgery

### **Diagnostics**

- CT
- Digital Radiography
- Endoscopy
- Fluoroscopy
- MRI
- Ultrasound

## Now offering Synovetin OA,®

a new therapy that can help restore a dog's active life. One injectable treatment has been proven effective in the treatment of dogs with elbow OA and can last up to one full year!

516-501-1700





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