

VET CANDY

Special Edition
SURGERY

DR. PHILIPPA
PAVIA ON
SLAYING THE
CONFIDENCE
GAME

FIVE WAYS
TO GET
SURGICAL
CONFIDENCE



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PETS?
WHAT YOU
NEED TO
KNOW.**

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MASTER
COURSE**

**SUTURES
MADE
EASY**



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7 Days



14 Days



35 Days

Suture materials are not created equal
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Table of
CONTENTS



**1 WELCOME TO THE
WORLD OF VET CANDY**

**2 HOW DR. PHILIPPA PAVIA SLAYS THE
CONFIDENCE GAME**

**3 SUTURE LENGTH TO WOUND LENGTH
RATIO FOR ABDOMINAL CLOSURES**

4 SUTURE MATERIAL MADE EASY

**5 RESEARCHERS FIND CBD IMPROVES
ARTHRITIS SYMPTOMS IN DOGS**

**6 COMPARISON OF SURGICAL TIME,
COMPLICATIONS, AND
POST-OPERATIVE PAIN WITH
OVARIECTOMY PROCEDURES IN DOGS**



8

**FACTORS THAT AFFECT
THE DURATION OF
ANESTHESIA AND
SURGERY**



9

**PHARMACOKINETICS OF
CBD IN OSTEOARTHROTIC
DOGS**

7 EXCLUSIVE!

**FIVE THINGS VETERINARIANS
NEED TO KNOW ABOUT CBD
AND PETS**

**10 THE USE OF LUTEINISING HORMONE
TESTS CAN HELP VETERINARIANS
AVOID SURGERY TO CONFIRM NEUTER
STATUS**

**11 CLINICAL EVALUATION OF
POSTOPERATIVE ANALGESIA IN DOGS**

**13 OPERATING ROOM REPRODUCTIVE
HAZARDS FOR FEMALE SURGEONS**

**14 25 THINGS YOU DIDN'T KNOW
ABOUT DR. COURTNEY CAMPBELL**



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WELCOME TO THE WORLD OF VET CANDY

DR. JILL LÓPEZ

EDITOR-IN-CHIEF

I am so pleased to bring you this special edition issue of Vet Candy—a veterinary lifestyle magazine filled with engaging voices and inspirational messages from top influencers and experts. We talk about science, clinical updates, and inspirational people who are making our profession a better place.

In this first issue, we are talking all about surgery and we are introducing you to the amazing veterinary surgeon, Dr. Philippa Pavia. New York City native, Dr. Philippa has an educational transcript unlike that of most veterinarians. Most of us started with a bachelor's degree in animal science or biology degree, but Dr. Philippa graduated from Yale with a degree in English literature. She later went on to complete her veterinary degree at the University of Pennsylvania and a residency in surgery at the Animal Medical Center. Now she's the Medical Director at BluePearl in Manhattan.

Dr. Philippa is also trying something new in 2021—teaching a masters course in surgery. She is teaming up with Vet Candy to bring you a professional surgical certification course, focusing on reinforcing the fundamentals of veterinary surgery and introducing her expert tips. Whether you are new to surgery or want to upgrade your skills, this free course is for you! You can learn more at myvetcandy.com/surg

This issue has lots more great information. As editor-in-chief, I would like to thank our amazing writers, who bring their expertise to this endeavor. They have all made this issue possible, and I hope you enjoy it.



HOW **DR. PHILIPPA PAVIA** SLAYS THE CONFIDENCE GAME

Most veterinarians have a rather traditional educational experience. They apply for veterinary school, and if they get in, they go to one of those schools. If they are not accepted, they seek either a different career path or a different college.

Dr. Philippa Pavia turned this usual path on its head by graduating from Yale with a BA in English literature before changing her mind and becoming a vet. It's rare for people who have attained a liberal arts degree at such an illustrious university to turn around and choose a different career, but that's exactly what she did, completing her VMD at the University of Pennsylvania.

NEVER LOOKING BACK

Philippa doesn't believe careers are static, and that turned out to be a good thing when she decided to change things up and veer from English lit to veterinary medicine. At first, she worried that she might not do well in vet school or even be accepted because she was coming from a liberal arts background.

Fortunately, it worked out. Not only did she fall in love with veterinary medicine, she was confident in the path before her—to become a veterinary surgeon after completing a residency at NYC's Animal Medical Center.

She realized her dream in 2014, becoming a board-certified surgeon.





ADVICE FOR OTHERS

Dr. Philippa has climbed to the top thanks to her tenacity, passion for the industry, and excellent hand-eye coordination. This isn't a path others in the same shoes might have taken. By the time Philippa realized that she wanted to be a vet, she was already well along her way in the world of literature.

She realized that your path doesn't have to be linear to be the right one for you. It's okay to be flexible, to follow your dreams, and more importantly, to realize when those dreams have changed. One of the most important things you can do for yourself is be open to change and to realize when that needs to happen.

If she could give advice to her younger self, she might say, "Your thoughts are not the truth. You are stronger than you know. Perfection doesn't exist, and if it did, you wouldn't want it anyway."

This is good advice for everyone. Even if you're already in a career and realize it's not right for you, the best course of action isn't to persist, to be miserable for decades, but to find something that makes you happy. Many people refuse to change because they are scared of what that might mean, without realizing how beneficial change can be.

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SUTURE LENGTH

TO WOUND LENGTH RATIO FOR ABDOMINAL CLOSURES

Researchers investigated the suture length to wound length ratio (SL:WL) in an in vitro model of abdominal wall closure.

Three groups of veterinary surgeons with varying levels of experience performed four simple continuous sutures before and after being educated on principles of the SL:WL ratio.

No significant differences in suture parameters or SL:WL ratios were found among the three groups, and 60.5% of control sutures and 77.0% of test sutures had SL:WL ratios above 4:1.

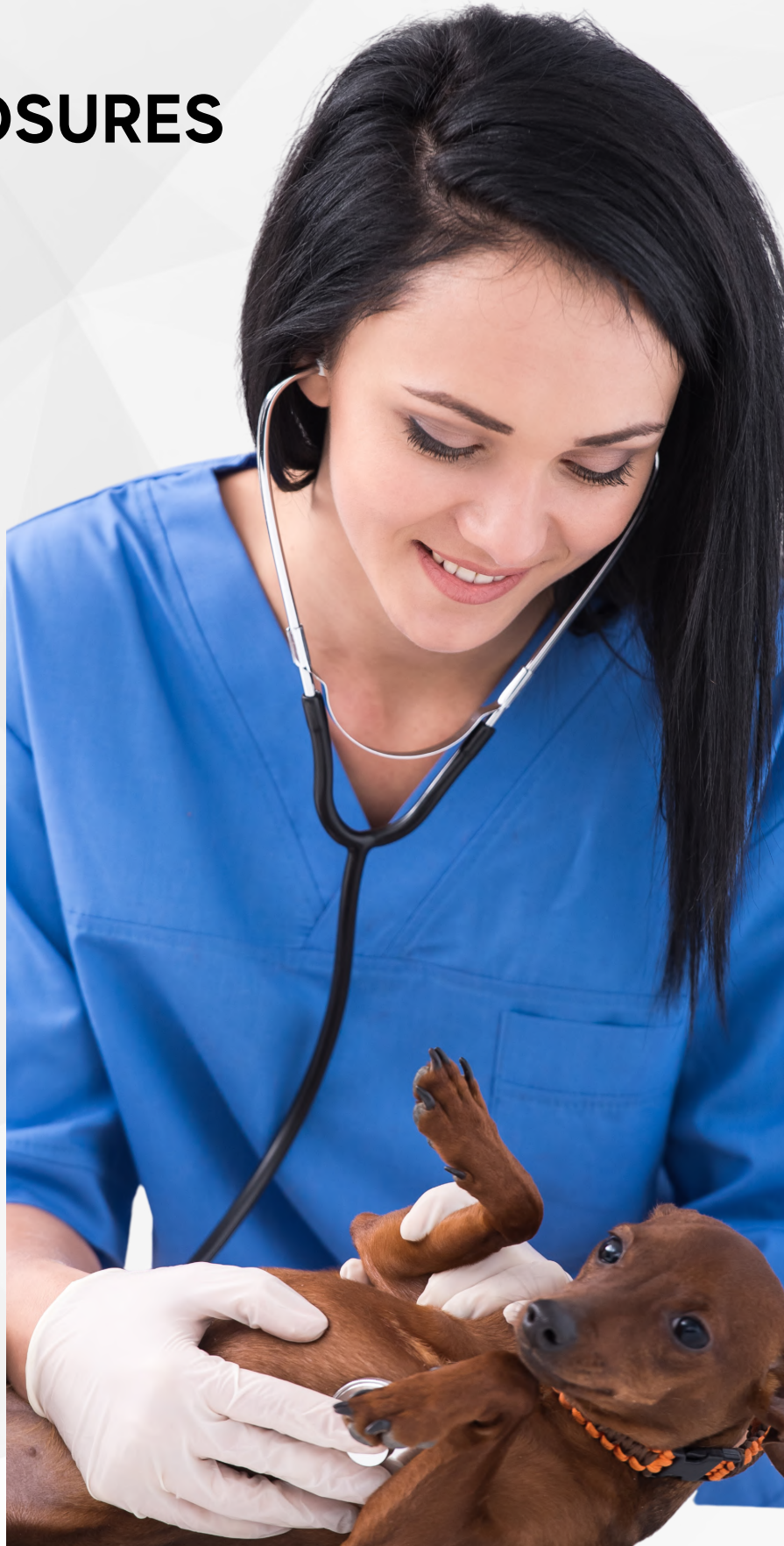
There was a significant improvement in the mean ratio after the information was provided. Overall, the SL:WL ratios ranged from 1.54:1 to 6.81:1, with 36.3% falling between 4:1 and 5:1.

Forty-nine of 120 sutures fulfilled the current recommendations for abdominal wall closure with a mean SL:WL ratio of 4.1:1.

Read more:

[*Suture length to wound length ratio for abdominal closures*](#)

“ FORTY-NINE OF 120 SUTURES FULFILLED THE CURRENT RECOMMENDATIONS FOR ABDOMINAL WALL CLOSURE. ”



SUTURE MATERIAL MADE EASY

- DR. COURTNEY CAMPBELL

Suture material is not created equal. Absorption rates, material profile, and needles all have specific indications. While there is some variation on surgical use depending on surgeon preference, selecting the proper suture can dramatically change your surgical outcomes.

SIZE:

USP suture size ranges from 11-0 to 7. 11-0 is the smallest size, typically used in ocular surgery.

STRUCTURE:

Multifilament- more than one strand

- Good flexibility
- Rougher surface means increased risk for micro trauma, bacterial infection, and inflammatory response.
- Polyester is a multifilament synthetic suture, and silk is a multifilament natural suture.

Monofilament- single strand

- Lower infection risk
- Less knot security
- Nylon and polypropylene are synthetic monofilament materials.

Pseudomonofilament- Braided core material coated with extruded material

- Fair flexibility
- Less knot security than multifilament



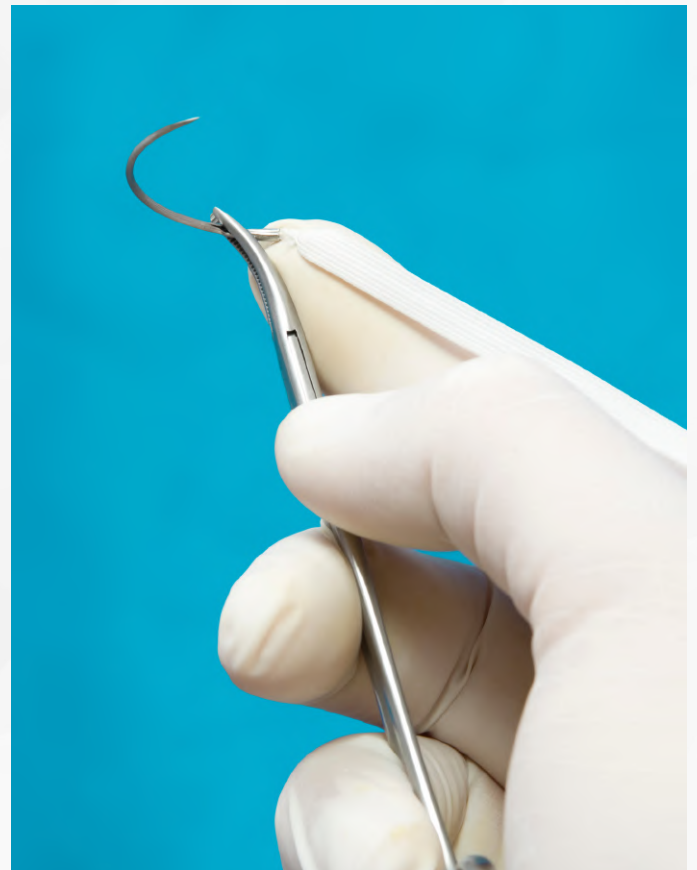
TEXTURE:

Smooth- requires tying knots to anchor into tissues
Barbed- self-anchoring to tissues

USES:

Non-absorbable- used to provide long term support for tissues that heal slowly

- Newer polyethylene/polypropylene blends provide “flex” or “feedback” to surgeon prior to suture breakage.
- Uses: Hernia closure, general soft tissue approximation, ligation abdominal wound closure*, sternal closure, ligament and tendon repair



ABSORBABLE- USED FOR TISSUES THAT HEAL RAPIDLY

Short-term lasts for days.

- Uses: in tissues that heal rapidly and require minimal support, ligating superficial blood vessels and suturing subcutaneous fatty tissue, internal soft tissue wounds or lacerations
- Not for cardiovascular or neurological procedures

Mid-term lasts for weeks.

- Uses: subcuticular closure and soft tissue approximations and ligations with the exception of neural, cardiovascular, ophthalmic, and microsurgical applications

Long-term lasts for months or beyond.

- This material is well-suited for many types of soft tissue approximation, including pediatric cardiovascular, orthopedic, gynecologic, ophthalmic, plastic, digestive, and colonic surgeries.

Reference:

Dennis, C., Sethu, S., Nayak, S., et al. (2016) Suture Materials- Current and Emerging Trends. Journal of Biomedical Materials Research, Part A, 104 (6), 1544-59.

SUTURES MADE EASY!

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SHORT TERM



MID TERM

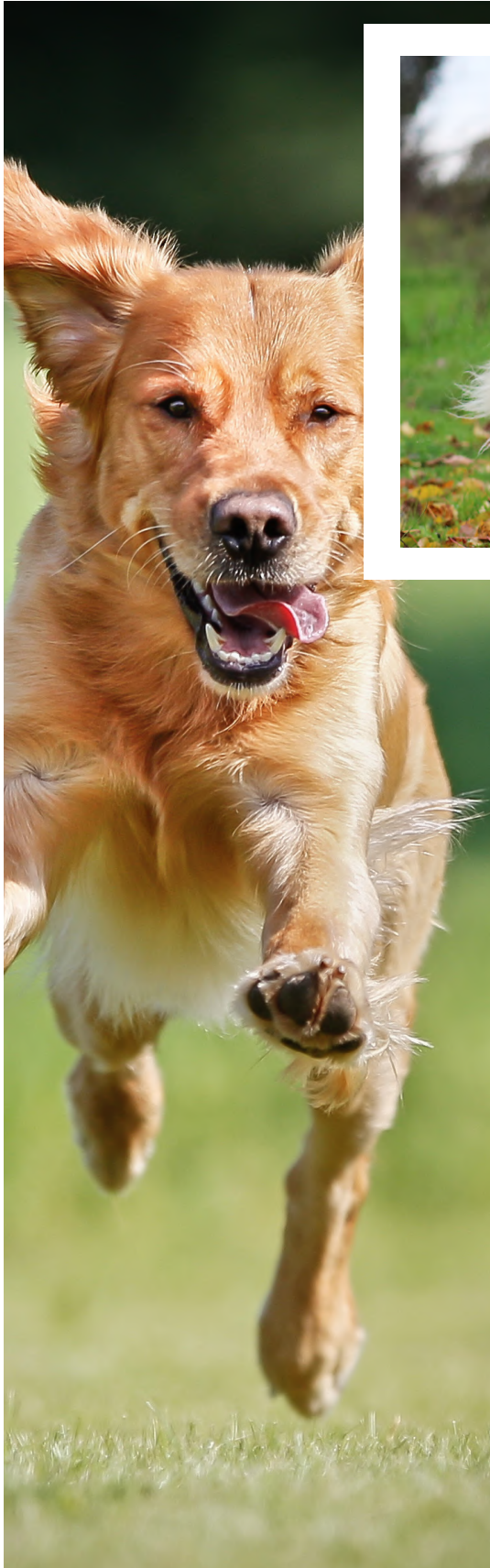


LONG TERM



RESEARCHERS FIND CBD IMPROVES ARTHRITIS SYMPTOMS IN DOGS

A team led by researchers at Baylor College of Medicine in collaboration with Medterra CBD conducted the first scientific studies to assess the potential therapeutic effects of cannabidiol (CBD) for arthritic pain in dogs, and the results could lead the way to studying its effect in humans. Researchers focused first on these animals because their condition closely mimics the characteristics of human arthritis, the leading cause of pain and disability in the US for which there is no effective treatment.



Related: [Get our guide to CBD](#)

Published in the journal PAIN, the study first showed both in laboratory tests and mouse models that CBD, a non-addictive product derived from hemp (cannabis), can significantly reduce the production of inflammatory molecules and immune cells associated with arthritis. Subsequently, the study showed that in dogs diagnosed with the condition, CBD treatment significantly improved quality of life as documented by both owner and veterinarian assessments. This work supports future scientific evaluation of CBD for human arthritis.

“CBD is rapidly increasing in popularity due to its anecdotal health benefits for a variety of conditions, from reducing anxiety to helping with movement disorders,” said corresponding author Dr. Matthew Halpert, research faculty in the Department of Pathology and Immunology at Baylor. “In 2019, Medterra CBD approached Baylor to conduct independent scientific studies to determine the biological capabilities of several of its products.”

In the current study, Halpert and his colleagues first measured the effect of CBD on immune responses associated with arthritis, both in human and murine cells grown in the lab and in mouse models. Using Medterra tinctures, they found that CBD treatment resulted in reduced production of both inflammatory molecules and immune cells linked to arthritis.

The researchers also determined that the effect was quicker and more effective when CBD was delivered encapsulated in liposomes than when it was administered “naked.” Liposomes are artificially formed tiny spherical sacs that are used to deliver drugs and other substances into tissues at higher rates of absorption.

Halpert and colleagues next assessed the effect of naked and liposome-encapsulated CBD on the quality of life of dogs diagnosed with arthritis.

“We studied dogs because experimental evidence shows that spontaneous models of arthritis, particularly in domesticated canine models, are more appropriate for assessing human arthritis pain treatments than other animal models. The biological characteristics of arthritis in dogs closely resemble those of the human condition,” Halpert said.



Arthritis is a common condition in dogs. According to the American Kennel Club, it affects one out of five dogs in the United States.

The twenty client-owned dogs enrolled in the study were seen at Sunset Animal Hospital in Houston. The dog owners were randomly provided with identical unidentified medication bottles that contained CBD, liposomal CBD, or a placebo. Neither the owners nor the veterinarian knew which treatment each dog received.

After four weeks of daily treatment, owners and veterinarians reported on the condition of the dogs, whether they observed changes in the animals' level of pain, such as changes related to running or gait. The dogs' cell blood count and blood indicators of liver and kidney function were also evaluated before and after the four weeks of treatment.

“We found encouraging results,” Halpert said. “Nine of the ten dogs on CBD showed benefits, which remained for two weeks after the treatment stopped. We did not detect alterations in the blood markers we measured, suggesting that, under the conditions of our study, the treatment seems to be safe.”



COMPARISON OF SURGICAL TIME, COMPLICATIONS, AND POST-OPERATIVE PAIN WITH OVARIECTOMY PROCEDURES IN DOGS



A study compared combined laparoscopic ovariectomy (OIE) and laparoscopic-assisted incisional gastropexy (LAG) with combined laparoscopic OIE and total laparoscopic gastropexy (TLG) for surgical time, incidence of complications, and postoperative pain.

Related:

[***Get our Surgical Insights Guide***](#)

Twenty-eight female dogs were randomly assigned to the LAG group (n = 14) or the TLG group (n = 14). All laparoscopic procedures were performed using a three-port technique. The gastropexy was located 3 cm caudal to the 13th rib and 4 cm lateral to the rectus abdominis muscle.

Combined laparoscopic OIE and TLG require more time to perform than combined laparoscopic OIE and LAG. Minor postoperative complications occurred in both groups and included swelling in two patients and subcutaneous emphysema in one.

No significant differences in pain as measured through the Glasgow Pain Score (GPS) were noted, but the GPS was significantly higher in both groups at one and six hours than before surgery.

Read more by clicking on the link below:

[***Combined laparoscopic ovariectomy and laparoscopic-assisted gastropexy versus combined laparoscopic ovariectomy and total laparoscopic gastropexy: A comparison of surgical time, complications and postoperative pain in dogs.***](#)

FIVE THINGS VETERINARIANS NEED TO KNOW ABOUT CBD AND PETS

As a veterinarian, it is important to be up to date on every new pet care trend. As with any new wellness trend, when it comes to CBD oil for pets, there's a lot of information floating around online. Not all of it is true or based on facts. Check out these five facts every veterinarian needs to know about CBD and pets.

1. In 2018, the [Agricultural Improvement Act of 2018](#), also known as the 2018 Farm Bill, reclassified CBD as an "agricultural commodity."
2. The legality of CBD can vary from [state to state](#).
3. Hemp-derived CBD is legal in most states, but only if:
 - It contains less than 0.3% THC.
 - It adheres to the shared state-federal regulations.
 - It is grown by a properly licensed grower.
4. FDA has approved one cannabis-derived and three cannabis-related drug products for human use.
5. There are no FDA-approved CBD products for veterinary use. Products marketed for pets are classified as nutraceutical supplements. Therefore, these products cannot make health claims.

Learn more by clicking on the link below:

[FDA rules](#)





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FACTORS THAT AFFECT THE DURATION OF ANESTHESIA AND SURGERY

Researchers evaluated records from 1288 gonadectomies that had been performed by veterinary students during a surgical rotation. Each student performed an average of 6.6 gonadectomies over 24 weeks.

Related: [*Get our Surgical Insights Guide*](#)

Dogs, females, increasing weight, intraoperative complications, and earlier sequential cases were associated with longer duration of surgery and anesthesia and accounted for 50% and 59% of anesthetic and surgical time variance.

The rate of intraoperative complications was higher during canine ovariohysterectomies.

Duration of anesthesia and surgery for canine orchidectomy decreased by more than 20 minutes, and for canine ovariohysterectomy decreased by more than 10 minutes over 24 weeks without the students reaching a learning plateau.

Read more by clicking on the link below:
[*Factors Affecting the Duration of Anesthesia and Surgery of Canine and Feline Gonadectomies Performed by Veterinary Students in a Year-Long Preclinical Surgery Laboratory*](#)



PHARMACOKINETICS OF CBD IN OSTEOARTHRITIC DOGS

Researchers evaluated the oral pharmacokinetics and assessed the safety and efficacy of a cannabidiol (CBD)-based oil in dogs with osteoarthritis (OA).

A clinical trial with client-owned dogs presenting for evaluation and treatment of a lameness due to OA was also performed. Sixteen dogs completed the trial.

The study was a randomized, placebo-controlled, owner and veterinarian double-blind, cross-over trial. Dogs received each of two treatments in random order: CBD, 2 mg/kg every 12 h, or placebo every 12 h. Each treatment was administered for 4 weeks with a 2-week washout period in between treatments. Blood was collected to repeat complete blood counts and chemistry analysis at weeks 2 and 4 for each treatment.



Pharmacokinetics revealed an elimination half-life of 4.2 h at both doses. Clinically, the treated dogs showed a significant decrease in pain and increase in activity with CBD oil. Veterinary assessment showed decreased pain during CBD treatment.

No side effects were reported by owners, but serum chemistry showed an increase in alkaline phosphatase during CBD treatment.

The study suggests that a dose of 2 mg/kg of CBD twice daily can help increase comfort and activity in dogs with OA.

Read more by clicking on the link below:
[***Pharmacokinetics, Safety, and Clinical Efficacy of Cannabidiol Treatment in Osteoarthritic Dogs***](#)

THE USE OF LUTEINISING HORMONE TESTS CAN HELP VETERINARIANS CONFIRM NEUTER STATUS



A study evaluated the performance of a blood test in determining neuter status in female cats. Residual blood samples from 236 female cats of unknown neuter were tested for luteinising hormone (LH). A positive LH test result indicated that the cat was neutered. Cats were examined for surgical scars suggestive of prior neutering, and if scars were not found, an exploratory laparotomy was performed to confirm neuter status. The prevalence of neutered cats in this sample was confirmed to be 49%. The specificity of the test in detecting neutered cats was 100%, and the sensitivity was 69%.

Read more by clicking on the link below:

[***Study suggests that luteinising hormone testing can help veterinarians avoid surgery to confirm neuter status.***](#)

CLINICAL EVALUATION OF POSTOPERATIVE ANALGESIA IN DOGS

Thirty dogs of different breeds underwent elective ovariohysterectomies and were randomly assigned to one of three treatment groups: an acetaminophen group [15 mg kg⁻¹ intravenous (IV)], a carprofen group (4 mg kg⁻¹ IV), and a meloxicam group (0.2 mg kg⁻¹ IV).

All treatments were administered 30 minutes prior to surgery. Acetaminophen was administered every 8 hours postoperatively for 48 hours total, while carprofen and meloxicam were administered intravenously every 24 hours.

All groups exhibited a gradual reduction in pain throughout the postoperative period on both scales; however, neither scale differed significantly between the three treatment groups during the 48 postoperative hours.

Read more by clicking on the link below: [*Clinical evaluation of postoperative analgesia, cardiorespiratory parameters, and changes in liver and renal function tests of paracetamol compared to meloxicam and carprofen in dogs undergoing ovariohysterectomy.*](#)



THREE THINGS YOU NEED TO KNOW ABOUT SUTURES

– DR. COURTNEY CAMPBELL

There's a lot to consider when suturing a wound. Suturing wounds and apposing tissue must be done in consideration of suture material, anticipated wound healing times, tissue types, local factors, location of the wound, and other specific patient factors (e.g., age, weight, overall health status, presence of infection), and a host of other factors. The process of selecting suture, however, doesn't have to be another source of anxiety in the operating room.

Here are three factors about suture that, when selected appropriately, can help you sleep better at night.



INFECTION

The sources and potential causes for surgical site infection are plentiful. From surgical preparation to patient health status, surgical technique, and perioperative use of antibiotics, there are a host of variables that can potentially contribute to surgical site infection. Therefore, attention to detail during surgery is a top priority. One detail that warrants serious attention in preventing surgical site infections is suture choice.¹

Monofilament has an advantage over other sutures in helping to prevent surgical site infection.² The advantage of multifilament suture is rooted in its ability to decrease bacterial bio-adhesion and improve the ability of phagocytes to reach bacteria with the suture. To underscore the importance of monofilament suture, one company has made available the opportunity to use a monofilament suture for all types of surgeries.

Triclosan-coated suture can also be considered when looking to decrease surgical site infection. Although some earlier studies have questioned their use,³ a recent study indicated that suture type may be an important factor in the efficacy of triclosan.⁴

The in vitro study found that of the three triclosan-coated sutures used in the present study—triclosan-coated polydioxanone (monofilament), poliglecaprone 25 (monofilament), and polyglactin 910 (multifilament)—polyglactin 910 had the smallest zones of inhibition for all of the bacterial isolates, and durations of inhibition were shorter for this suture type than for the two monofilament sutures. On visual assessment, uncoated polyglactin 910 suture was found to have the greatest burden of adherent bacteria (*E coli*). Although in vivo investigation is required to confirm that the results would be similar in a clinical setting, their study provided compelling in vitro evidence to support the use of triclosan-coated materials in contaminated surgical sites or in patients for which the development of surgical site infection would lead to severe morbidity.

Essentially, due to the morbidity related to surgical site infections, the patient welfare implications, and other evidence suggesting that triclosan-coated suture materials are safe, it is wise to consider their use. Additionally, CDC recommendations in the human medical field support their potential to decrease the incidence of surgical site infections.⁵

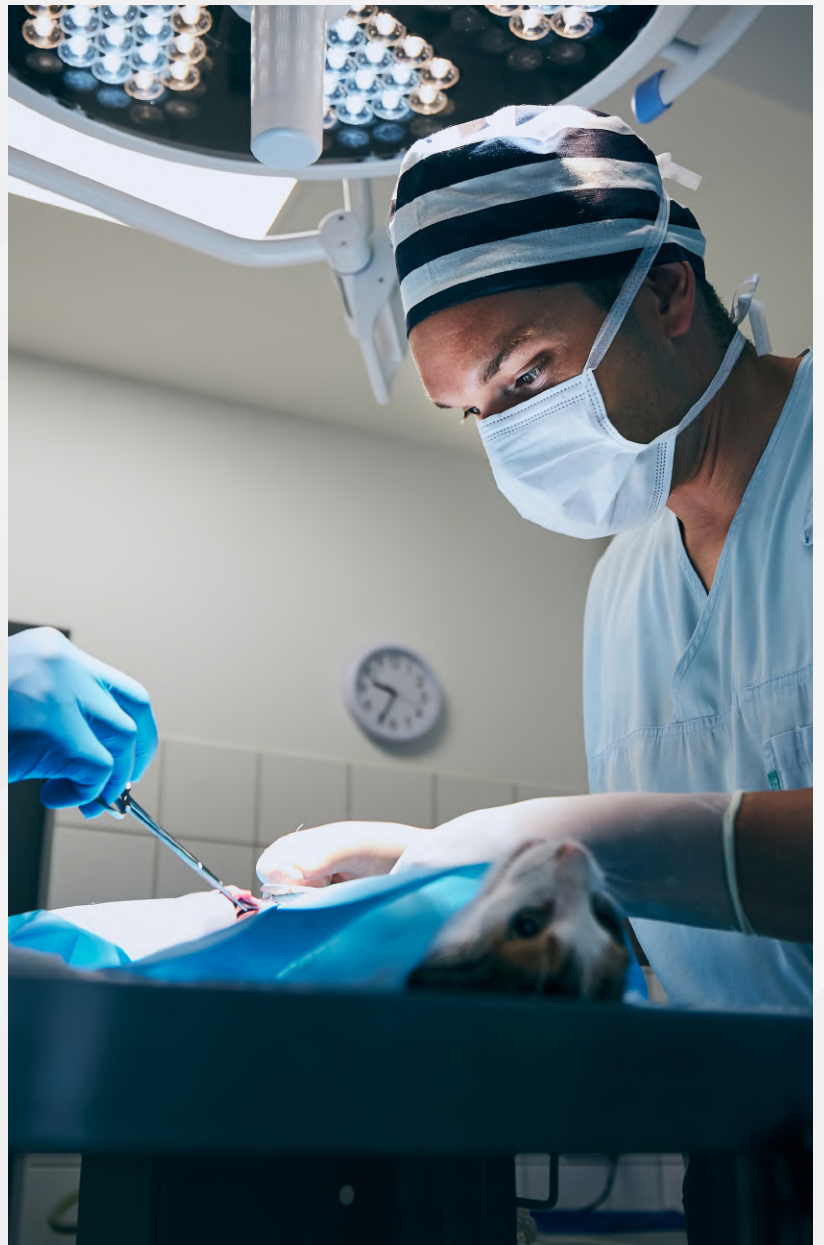


MEMORY

Monofilament sutures have multiple advantages over multifilament sutures, but multifilament does have the edge when it comes to memory. A suture with a high memory will spring back to its original position. While sutures with high memory tend to be strong, they may be difficult to handle, with decreased knot security. This may cause your suture line to tangle, induce a great deal of frustration, and risk knot failure during healing. The knot security is lower in sutures with high memory because the suture has a tendency to return to its original straight extruded state. Therefore, more throws in the knot are required to securely hold monofilament than braided nylon sutures. Sutures with a high degree of memory can be more challenging to handle and can increase surgical time.

Although many surgeons stretch the suture to remove suture memory, that technique may cause inadvertent displacement of the swaged needle from the suture strand.

Fortuitously, sutures have been made available in racetrack packaging. This innovative storage solution gives sutures fewer turns around the track, which allows for less memory, easier handling, and faster, more efficient wound closure.

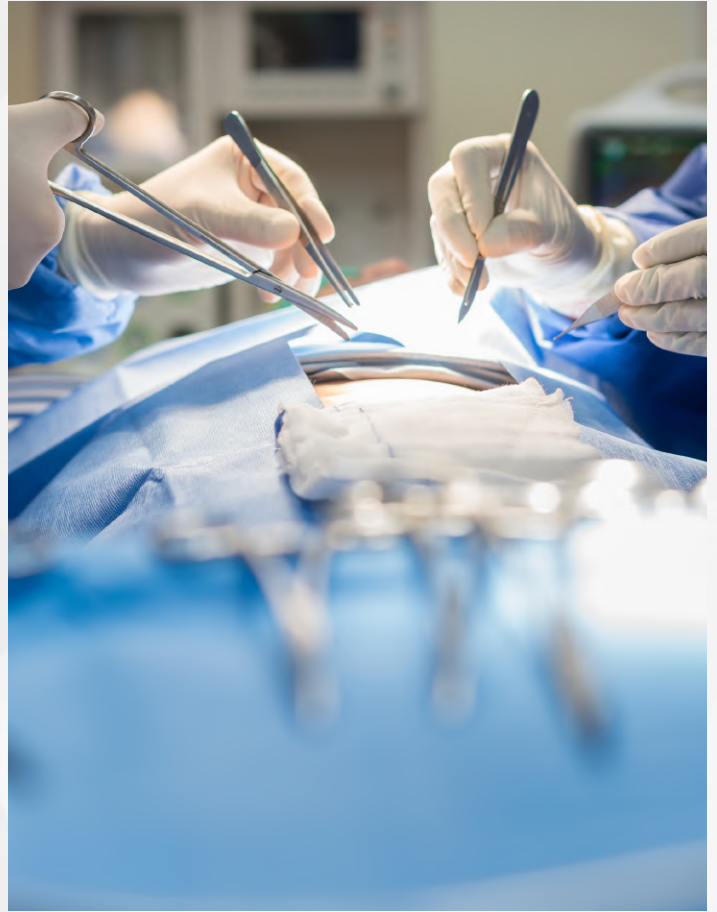


ABSORPTION

Suture absorption rates can be generally defined as short-term, mid-term and long-term. Long-term has also colloquially been referred to as “max,” as in the maximum time suture mass absorption occurs for the suture to still be considered absorbable.

The differences in the suture absorption rates can be complicated and difficult to remember. To help simplify your choice, consider selecting suture material with the absorption class incorporated into the name of the suture. This may make the process easier, particularly in cases in which it's difficult to recall the exact mass absorption times. For example, it may be more challenging to remember the absorption time of suture labeled “Glyconate monofilament suture” versus a suture labeled “Glyconate Short-Term” or “Glyconate Mid-Term.”

Although the factors that influence final wound and tissue healing can seem overwhelming, allow your suture selection to improve your chances for an excellent surgical outcome.



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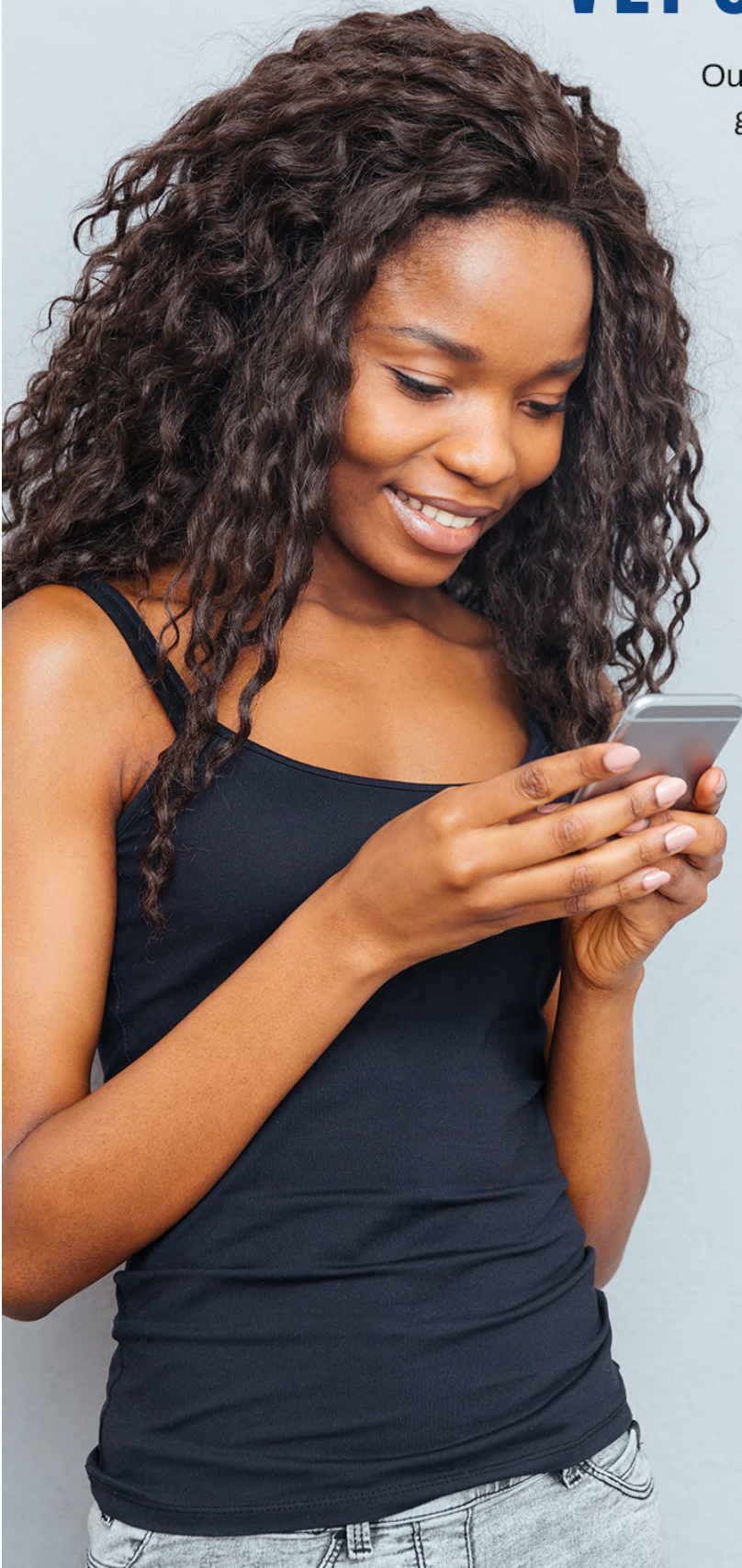
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OPERATING ROOM REPRODUCTIVE HAZARDS FOR FEMALE SURGEONS

Higher rates of infertility and pregnancy complications have been found for female surgeons compared with the general population. Occupational hazards exist in the operating room that may be factors in increased rates of infertility and adverse pregnancy outcomes for surgeons. It is important for the workplace and surgeons to understand what information is available. At a minimum, workplaces need to comply with existing guidelines or standards, recognizing that these may not protect reproductive outcomes, and it may be wise to do more. Alternative work duties and/or conditions should be readily available. Priority should be given to controlling exposure rather than restricting surgeons' activity.

Researchers in this review article discuss occupational reproductive hazards for female surgeons in the operating room, including radiation exposure, surgical smoke, working conditions and physical demands, injury from sharp items, anesthetic gases, and the use of toxic agents.

To read the study, click on the link below:
[*Reproductive hazards for female surgeons*](#)



25 THINGS YOU DIDN'T KNOW ABOUT DR. COURTNEY CAMPBELL

Is there anything that veterinary surgeon and media personality, Dr. Courtney Campbell, can't do?

Venturing into the world of producing, writing, and hosting, Dr. Courtney's future looks very bright. But for as bright and exciting as his future looks, his past is just as interesting. He is a celebrity veterinarian after all. So, let's talk about 25 things you didn't know about Dr. Courtney Campbell!



- 1.** When he was young, he wanted to be either a chef, a magician, or a veterinarian. At home, he pretend to be the first, he feel blessed to be the last, and he still haven't given up his dream on the middle one.
- 2.** He was an National Physique Committee (NPC) bodybuilding competitor for 4 years and the spartan diet made him appreciate how much he enjoys food.

3. His main form of entertainment growing up in Connecticut was spending hours outside in the woods looking under rocks and logs looking for wildlife.
4. He has acted in over six theater productions.
5. In high school, geometry made him fall in love with mathematics.
6. He loves to write and in high school, he wrote many short stories. Almost every story he wrote had an action or fight sequence incorporated into the story line.
7. He wishes he was better at keeping up with his social media.
8. His mother says he rarely cried as a baby. And if he did, he would just give him food and he would stop crying. And today, he says he is still the same.
9. In addition to his passion for surgery, he is also passionate about fighting infectious disease. He even led a program to educate pet service professionals during outbreaks of dog flu.
10. His favorite high school sports were wrestling, track and field, cross country and tennis.
11. He has written two books in the last five years, one is the Pet Owner Guide to Infectious Disease, co-authored by Dr. Kathryn Primm and the second was Surgical Insights.
12. He played rugby during undergrad at the University of Delaware.
13. He has done over 40 guest spots with daytime talk shows. He's pals with Rachel Ray. And yes, Rachel Ray is truly that nice!
14. Co-hosting Pet Talk, a first-of-its-kind talk show on Nat Geo Wild was one of the most fun and amazing moments of his media career.





- 15.** One of his former co-hosts is Andre Milan, son of Caesar Milan. They are still friends today.
- 16.** Zoobooks (a book series by The National Wildlife Federation) lit a fire under him as a kid and opened his eyes regarding animals. He was so inspired that at age seven he wrote a letter to the fictional character 'Ranger Rick' asking him why dogs have whiskers. And yes, he still has his response letter.
- 17.** While some people have a sweet tooth. Dr. Courtney has a 'rice tooth'. His favorite carbohydrate is rice.
- 18.** He will only drink water if matcha and kombucha are unavailable.
- 19.** He considers himself lucky to have such amazing guests on his podcast, Anything is Pawsible.
- 20.** He has a nerdy obsession for 'Wolverine' comics and The Matrix movie series.
- 21.** Even though he spends most of his free time lecturing or speaking at events- he suffer from stage fright. Talking about and being honest about his social anxiety helps him overcome it.
- 22.** He has no words for how much he hates olives.
- 23.** He is really bad at bar sports like darts, billiards, and bowling. Really bad!
- 24.** Although he is allergic to cats, he still loves them.
- 25.** He is one of two African-American board certified veterinary surgeons in this country, but hopes to help change that. He serves as a co-chair of the AVMA Commission for a Diverse, Equitable, and Inclusive Veterinary Profession



7 Days



14 Days



35 Days

Suture materials are not created equal
@prnpharmacal

