

VET

nuus•news

November 2025

The Monthly Magazine of the SOUTH AFRICAN VETERINARY ASSOCIATION
Die Maandblad van die SUID-AFRIKAANSE VETERINÊRE VERENIGING



THEME

Men's Health

CPD

Infectious Bronchitis (IB) in Poultry



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SAEVA Congress 2026

19 - 22 February
Venue: Champagne Sports Resort, Drakensberg,
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Info: <https://vetlink.co.za/saeva-congress-2026/>

March 2026



Wildlife Group of the SAVA Congress 2026

12 - 14 March
Venue: 26° South Hotel, Muldersdrift, Gauteng
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NVCG: The Veterinary Masterclass: Neurology

17 - 18 March
Venue: Cape Town Chrystal Towers, Century City
19 - 20 March
Venue: Johannesburg, Midrand Premier Hotel
Vetlink: <https://vetlink.co.za/nvcg-roadshow-march/>
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June 2026



13th Int Crustacean Society Mid-Year Meeting

01-04 June
Venue: STIAS – Stellenbosch
Info: <https://tcs2026.com/>



RuVASA Congress 2026

08 - 10 June
Venue: Champagne Sports Resort, Drakensberg, KZN
Info: <https://vetlink.co.za/ruvasa-congress-2026/>

September 2026



NVCG: The Vet Masterclass: Medicine & Dermatology

19 - 20 September
Venue: Johannesburg, Midrand Premier Hotel
21 - 22 September
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13th Biennial SAVA & Para-Veterinary Congress

September (date to be confirmed)
Venue: to be confirmed (Gauteng)
Info: corne@savetcon.co.za
This congress is not yet listed on the website as too little information is available at the moment. Watch this space for more information.



SAAVT Biennial Congress

30 September - 01 October
Venue: Krystal Beach Hotel – Gordon's Bay
Info: conference@savetcon.co.za

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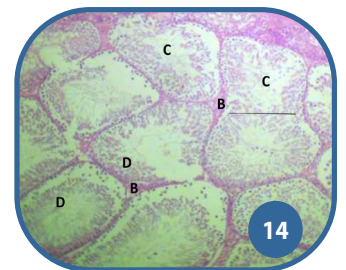
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Dear members,

Almost at the end!

As we approach the close of 2025, November offers an important opportunity for reflection, to recognise how far we have come as a profession, and to reaffirm our shared purpose in advancing animal health, food safety, and public trust in our profession. This is especially important after the last few months.

The results of the poll on the constitution of the SAVC are contained in this issue. I thank all colleagues who took the time to participate in the poll on the transport of animals destined for slaughter by sea. It was clear from the results that SAVA members overwhelmingly believed dialogue between the parties was necessary to resolve the issue – A sentiment I believe was also echoed by the judge at the recent court hearing.

The judgment affirming the proper constitution and functioning of the South African Veterinary Council (SAVC) marks a crucial step toward institutional stability and good governance. We trust that the Council will now be constituted in accordance with the court order, thereby restoring the full legitimacy and functionality of the South African Veterinary Council. We look forward to the Council resuming its vital regulatory and governance duties. This outcome re-centres the principles of accountability, transparency, and inclusivity that underpin both our regulatory and representative institutions.

I believe that the new councillors will build on the foundations laid in creating an inclusive sector united in purpose. I also trust that the divisive elements within the profession will subside and allow us to collectively focus on the things that matter — the advancement of veterinary science, the welfare of animals, and the service we provide to society.

Across the country, veterinarians continue to demonstrate resilience and professionalism in the face of major disease and public-health challenges. The ongoing Foot-and-Mouth Disease (FMD) control efforts in Gauteng and other provinces reflect the need for veterinarians to continue to act ethically and professionally in the interest of the country. This and collaboration in good faith between State Veterinarians, Animal Health Technicians, private practitioners, and producers remains our strongest defence against transboundary animal diseases.

As we look ahead, the implementation of the Animal Health Act is looming, as indicated by the National Department of Agriculture earlier this month. This act will replace the Animal Diseases Act, and it is thus important for SAVA members to comment on the regulations and the Act as the opportunity arises. This process will likely usher in a new era for animal-health governance in South Africa, reshaping responsibilities for provincial veterinary services, veterinary and para-veterinary professionals, producers, and regulators alike. SAVA will continue to engage constructively with the National Department of Agriculture and other partners to ensure that the new regulatory framework supports effective disease control, fair compliance expectations, and the sustainability of veterinary services.

In the past month, we attended the much-awaited WVA Vet-VPP Collaboration Workshop. This workshop was sponsored by the WVA in response to concerns raised by veterinarians in the countries where an



FAO initiative to empower Veterinary Para Professionals (VPPs) - Animal Health Technicians, in the case of South Africa - to open sustainable independent practices. At the workshop, it became clear that more effort needs to be put into collaboration with Para-veterinary professions in building the veterinary team and strengthening our One Health approach. The journey ahead calls for renewed commitment, open communication, and partnership.

At the workshop, SAVA, with representatives from the NVCG and RuVASA, represented the veterinarians, and the Animal Health Technicians were represented by SAAHT. Both parties agreed to get a mandate from their respective associations and formalise collaboration through a Memorandum of Understanding (MoU) with SAAHT and other professional associations. Possible areas of collaboration identified are:

- Championing One Health and One Veterinary Team principles as the foundation of all professional activities and partnerships.
- Promoting joint training, research, and advocacy platforms to strengthen technical depth and responsiveness in the field.
- Advocating for sustainable veterinary service delivery that supports both animal health and livelihoods.

As I noted in my presentation at this workshop, which rings true with every relationship SAVA has, relationships are built — and sustained — by the people and institutions that nurture them. As we move forward, let us continue to work together with purpose, humility, and integrity, building a profession that serves not only animals and farmers but also the public and the generations to come.

Lastly, we look forward to the SAVA AGM on 22 November 2025. Members are encouraged to participate and have their voices heard. I hope to see an unprecedented turnout this year.

I trust that members have had a fruitful year, and as we approach the close of 2025, may we all find renewed purpose and pride in the vital role we play in society. **V**

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Sr Paula Webster

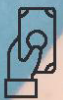
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Critical support structures for men's health encompass a mix of personal, social, and professional elements that provide physical, mental, and emotional support while helping to break down traditional masculine stereotypes that hinder help-seeking.

A very Powerful statement indeed, but when broken down, what does it actually mean? Healthy personal and lifestyle habits rest on knowing yourself. Developing self-awareness and self-regulation helps to manage stress and recognise early signs of mental or physical health issues; regular physical activity, a balanced diet, adequate sleep (7-9 hours), and stress management techniques (like mindfulness or hobbies); and regular physical check-ups and age-appropriate screenings (e.g., for prostate cancer, high blood pressure, cholesterol). To achieve optimum health, it is important that the health system is accessible and culturally sensitive to men's needs. This includes male-specific health centres and services that proactively engage men and boys in their health. Therapists and counsellors, particularly those specialising in men's issues, can provide effective, structured, and goal-oriented support. Normalising the conversation about therapy and offering discreet options (like telehealth) can reduce the stigma associated with seeking help. Employers can help by promoting

Editor's notes / Redakteurs notas

mental health awareness, offering Employee Assistance Programs, training managers to spot concerns, and creating men's health Employee Resource Groups.

To achieve these goals, support is needed. This support is rooted in nurturing relationships with family, friends, and partners. Strong social ties reduce stress, combat loneliness, and improve overall health outcomes. Formal and informal peer groups, such as men's support groups, sports clubs, or volunteer organisations, offer a non-judgmental "male-friendly" space where men can connect over shared interests and experiences. These environments allow men to talk "shoulder to shoulder" and share vulnerabilities without fear of judgment. Creating environments where openness is modelled and met with empathy, rather than the expectation to "toughen up," is crucial. Activity-based conversations, such as during a walk or while working on a project, can often be more comfortable for men than formal face-to-face discussions.

In every workplace, there are men. This month, Vetnews places the spotlight on the health of male colleagues. Just the next month after breast cancer month, a disease many people still believe can only happen to women, but it does occur in men as well. We have a look at what the symptoms are. Other, more common male-related diseases are also touched on.

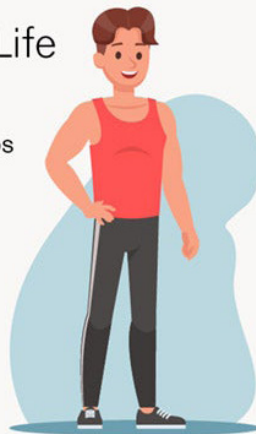
Let us be the men who do not sweep a nagging feeling or symptom under the carpet, may we be the colleagues who pay attention to our male colleagues and lend a helping hand or willing ear, may we be the partners who look after the men in our lives, whose lives may depend on it.

November is the height of the silly season, but also the time when a lot of travelling is planned and done. Please travel safely, practice safe social behaviour and take care.

Andriette

8 Tips to Help Men Live a Healthy Life

- 1) Eat a healthy diet
- 2) Limit alcohol and stop smoking
- 3) Engage in regular exercise
- 4) Get enough sleep
- 5) Build strong friendships
- 6) Enjoy peaceful relaxation
- 7) See your doctor regularly
- 8) Get your health screenings



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Two independent people will review abstracts and successful authors will be notified within two weeks following the deadline from submission. Authors must accept the terms and conditions for speakers. Abstracts that do not comply with the following format will be returned to the authors for corrections:

- Must be in English
- Abstracts may not exceed 350 words.
- Must clearly indicate the author's name. Write names of authors in the order of last names and asterisk (*) the person who will be the presenter.
- Must clearly indicate the organization (name and location of institution, clinic, practice etc). If the affiliation of co-workers differs, indicate the names and affiliations by corresponding numbers (Superscripts).
- Must contain a list of references.

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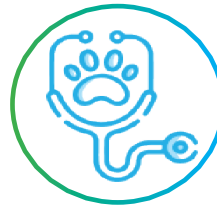


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Six Health Problems Faced by Men Today

Men's health is an often-neglected aspect of overall well-being, with many men waiting too long to seek help for medical concerns. By the time symptoms become severe, early intervention opportunities may have been missed.

Recognising common health problems in men and addressing them through preventative care is crucial to ensuring long-term health and vitality.

In the following article, explore six common men's health issues, including their symptoms and prevention, and the importance of regular health screening for men.

Heart Disease in Men

Heart disease is one of the leading causes of death among men worldwide, accounting for a significant proportion of male fatalities. The disease often manifests through the narrowing or blockage of coronary arteries, leading to reduced blood flow to the heart. This can result in serious events such as heart attacks or strokes.

Risk factors for heart disease

Several factors contribute to the development of heart disease in men. These include high cholesterol levels, high blood pressure, obesity and a sedentary lifestyle. Additionally, smoking and excessive alcohol consumption can significantly elevate the risk. Men are often more prone to these habits, which increases their vulnerability to cardiovascular issues.

Symptoms to look out for

The most common symptom of heart disease in men is chest pain or discomfort, often described as pressure, squeezing or a burning sensation. This may be accompanied by shortness of breath, fatigue, nausea or lightheadedness. In severe cases, a heart attack may occur, causing more pronounced symptoms such as intense chest pain, pain radiating down the arm or difficulty breathing.

Prevention

Preventative care for men is critical in reducing the risk of heart disease. Regular physical activity, a balanced diet that is low in saturated fats and quitting smoking can all help improve cardiovascular health. Routine check-ups, including monitoring blood pressure and cholesterol levels, are also vital for early detection and management.

Prostate Health Concerns

As men age, prostate health becomes an increasing concern. The prostate gland, part of the male reproductive system, often enlarges as men get older.

This can lead to benign conditions, but it could also raise the risk of prostate cancer – one of the most common cancers in men.

Common prostate issues

Two major prostate health concerns are benign prostatic hyperplasia (BPH) and prostate cancer. BPH refers to an enlarged prostate, which can obstruct the flow of urine and cause discomfort.

Symptoms include frequent urination, difficulty starting urination and incomplete emptying of the bladder. Prostate cancer, on the other hand, can develop silently and may only be detected through routine screening.

Symptoms to be aware of

In its early stages, prostate cancer may not cause noticeable symptoms. However, as the condition progresses, men may experience difficulties urinating, blood in the urine or pain in the lower back and pelvic area. It is important for men, particularly those over the age of 50, to undergo regular prostate health screenings.

Preventative measures

Maintaining a healthy lifestyle, including regular exercise and a diet rich in fruits and vegetables, can help support prostate health. Regular screening is essential, particularly for men with a family history of prostate cancer.

Early detection through screenings like the prostate-specific antigen (PSA) test can dramatically improve outcomes.

Mental Health in Men

Men's mental health is often under-discussed, leading to the underreporting and undertreatment of mental health issues. Many men may feel societal pressure to maintain a façade of strength and may be reluctant to express emotional vulnerability, which can prevent them from seeking help.

Common mental health issues in men

Depression, anxiety and stress are some of the most common mental health issues in men. Men are more likely to manifest these conditions through physical symptoms such as headaches, fatigue and gastrointestinal problems.

Unlike women, who may express sadness openly, men are more likely to exhibit irritability, anger or withdrawal from social activities.

Substance abuse is also a significant concern among men facing mental health challenges, as some turn to alcohol or drugs as a coping mechanism. This can compound the problem and lead to more severe health risks for men.

Recognising the signs

Recognising the symptoms of mental health problems in men is crucial. Persistent feelings of hopelessness, difficulty concentrating, changes in appetite and fatigue may indicate depression. Anxiety may be accompanied by excessive worry, irritability or difficulty sleeping. Men who are experiencing high levels of stress can often suffer from burnout, anger outbursts or a sense of being overwhelmed.

Encouraging men to seek help

It is important to create supportive environments where men feel comfortable seeking help for mental health issues. Therapy, counselling and support groups can be effective treatment options.

As part of preventative care, practising mindfulness, utilising stress management techniques and engaging in physical activities can all contribute to improved mental well-being.

Diabetes Symptoms in Men

Diabetes, particularly type 2 diabetes, is a growing health concern for men. This condition arises when the body either resists insulin or does not produce enough insulin to maintain normal blood sugar levels. Over time, high blood sugar can lead to serious complications such as heart disease, nerve damage and kidney failure.

Risk factors for diabetes

Obesity, poor dietary choices and lack of exercise are major contributors to the development of type 2 diabetes. Men are particularly at risk if they have a family history of diabetes or if they lead a sedentary lifestyle. Being overweight, particularly with excess fat around the waist, increases the likelihood of developing the disease.

Symptoms to watch for

Diabetes symptoms in men may include increased thirst, frequent urination, blurred vision and unexplained weight loss. In some cases, men may also experience erectile dysfunction as a result of the condition. These symptoms can often develop slowly, so regular health screenings are critical for early detection.

Prevention and management

Preventative care for men should focus on maintaining a healthy weight, engaging in regular physical activity and consuming a balanced diet rich in fibre and low in processed sugars. For those already diagnosed, managing blood sugar levels through lifestyle changes and medication is essential to prevent complications.

Testosterone Levels in Men

Testosterone is a key hormone in men, influencing muscle mass, bone density, fat distribution and sex drive. As men age, testosterone levels naturally decline, which can lead to a variety of physical and mental changes.

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Leading Article

Six Health Problems Faced by Men Today <<< 9

However, some men experience a more significant drop in testosterone levels than others, which can have a noticeable impact on their health.

Symptoms of low testosterone

Low testosterone levels in men can cause a range of symptoms, including fatigue, reduced libido, loss of muscle mass, increased body fat and mood changes such as irritability or depression. These symptoms can affect a man's quality of life, yet many men may not recognise them as signs of low testosterone.

Treatment options

Testosterone replacement therapy (TRT) may be an option for men with clinically low testosterone levels, but it should only be considered under the guidance of a healthcare professional. For those seeking natural ways to boost testosterone levels, regular exercise can help – particularly strength training. Additionally, maintaining a healthy diet and getting adequate sleep can also assist.

Preventative measures

To maintain healthy testosterone levels, men should focus on living an active and healthy lifestyle. Reducing stress, avoiding excessive alcohol consumption and staying physically active are all important steps in supporting hormonal balance.

Health Screening for Men

Health screenings are an essential part of preventative care for men. Despite this, many men are reluctant to visit healthcare providers for routine check-ups. Regular screenings allow for the early detection of health issues, including heart disease, diabetes and cancer, all of which can be more effectively treated when caught early.

Common screenings for men

Some of the most important screenings for men include:

Blood pressure checks

High blood pressure is a silent killer that can lead to heart disease and stroke.

Risks of hypertension

If blood pressure is too high, it puts a strain on the blood vessels, heart, and other vital organs, such as the brain and kidneys.

High blood pressure can also increase the risk of other serious and potentially life-threatening health conditions, such as:

- Heart attacks
- Stroke
- Heart failure
- Peripheral vascular
- Aortic aneurysms
- Kidney disease
- Vascular dementia

This is why checking blood pressure is so important.

Risk factors for hypertension

- Being overweight
- Eating too much salt
- Not eating enough fruit and vegetables
- Lack of exercise or daily physical activity
- Drinking too much alcohol or caffeinated beverages
- Smoking

- Not getting sufficient sleep at night
- Being over the age of 65
- Family history of hypertension

Cholesterol tests

Monitoring cholesterol levels is important for preventing heart disease.

Diabetes screenings

Regular blood glucose tests can detect prediabetes or type 2 diabetes early.

Prostate exams

These are crucial for men over the age of 50 – or for younger men with a family history of prostate cancer.

Colonoscopy

Men over the age of 50 should also undergo screening for colorectal cancer.

Testicular exams

These are important for younger men, as testicular cancer is most common in men aged 15 to 35.

The importance of regular screening

Regular health screening for men can catch potential health problems before they become severe. Early detection increases the chances of successful treatment and allows men to make lifestyle adjustments that can prevent the progression of serious conditions.

Conclusion

Men's health issues are diverse and often complex, but many of the most common problems can be managed or prevented with early detection and proactive care. From heart disease and prostate health concerns to mental health challenges and diabetes, being aware of these risks empowers men to take control of their well-being.

Preventative care for men, including regular screenings and lifestyle changes, is key to ensuring a long and healthy life. By recognising the importance of these issues and addressing them head-on, men can improve their quality of life and reduce the impact of common health problems. [V](#)



Do Men Get Breast Cancer?

The Facts You Should Know

IMPORTANT NOTICE

Breast cancer is commonly associated with women, but men also have breast tissue and can be at risk for developing breast cancer.

In South Africa, male breast cancer accounts for approximately 1.8% of all breast cancer cases, compared to less than 1% worldwide. Black men have higher incidence rates for all breast cancer subtypes.

Types of Male Breast Cancer

Ductal carcinoma: This cancer starts in the milk ducts and is the most common type of male breast cancer.

Lobular carcinoma: A rare type of breast cancer that starts in the glands that produce milk. Men's breast tissue has very few lobules, making this uncommon.

Other cancers: Inflammatory breast cancer and Paget's disease, primarily affecting the nipple area, are less common but also occur in men.

Risk factors

Detecting breast cancer early increases the chances of successful treatment. However, many men delay seeking medical help when unusual symptoms appear, leading to later-stage diagnosis.

Key risk factors include:

- **Age:** Men aged 40 to 80 years are most at risk.
- **Genetic mutations:** Inherited mutations in BRCA1 and BRCA2 genes increase risk.



- **Family history:** A close relative with breast cancer increases a man's risk.
- **Radiation therapy:** Chest radiation treatment increases breast cancer risk.
- **Hormone therapy:** Treatments involving estrogen for prostate cancer heighten risk.
- **Obesity:** More fat cells can increase estrogen levels, raising cancer risk.
- **Klinefelter's syndrome:** This genetic condition raises estrogen levels in men.
- **Alcohol use:** Heavy alcohol consumption can increase estrogen levels.

Signs and symptoms

- Men with breast cancer may experience:
- Swelling or a painless lump in the breast
- Inverted nipple
- Nipple discharge or bleeding
- Breast discomfort or a pulling sensation
- Skin changes (dimpling, redness, or scaling)

Prevention

While male breast cancer cannot be entirely prevented, certain lifestyle changes can reduce risk:

- Maintain a healthy weight
- Exercise regularly
- Limit alcohol intake
- PMB level of care **1**

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Ameliorative Potential of Alcoholic Ginseng Extract on Ibuprofen-Induced Reproductive Toxicity In Male Rats

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Abstract

The therapeutic benefits of ginseng (*Panax ginseng*) have attracted an abundance of interest. So, this investigation aimed to study the effect of alcoholic Ginseng extract against Ibuprofen-induced reproductive dysfunction in male rats. This investigation was carried out from August 24 to September 26, 2024, in the animal house of Veterinary Medicine College at Tikrit University. Seventy (70) adult, seemingly healthy Albino male rats were acquired from the Veterinary Medicine College's animal house at Tikrit University. The results showed that the Testosterone and FSH concentrations were normal in all groups and there were no significant differences ($P \leq 0.05$) between groups. On the other hand, significant ($P \leq 0.05$) differences were found in the concentration of LH, where the highest concentration was in the fourth group, which took Ibuprofen for 30 days (15.493 ± 0.591) compared to the control group (14.556 ± 1.008), while the treated groups did not show significant differences ($P \leq 0.05$) compared to the control group. Sperm motility, sperm life, sperm dead, abnormal sperm and Sperm counts in the Ibuprofen (30 days) group and the Ibuprofen (10 days) group showed significant ($P \leq 0.05$) differences compared to the control group. The treated groups and the ginseng group showed non-significant ($P \leq 0.05$) differences compared to the control group. Coenzyme Q10 activity in the Ibuprofen (10 days) group showed a significant ($P \leq 0.05$) elevated compared to the control group. The treated groups and the ginseng group showed non-significant ($P \leq 0.05$) differences compared to the control group. The Carnitine levels in all groups showed non-significant ($P \leq 0.05$) differences compared to the control group. Histological examination of rats dosed with both dimethyl sulfoxide and ibuprofen for 10 and 30 days revealed some histological changes, including hemolyzed blood vessels, reduced spermatogonia, and decreased sperm count. However, after using ginseng extract to treat and prevent the harmful effects of ibuprofen, it was found that seminiferous tubules contained different stages of spermatogenic development, and most spermatogenic cells were improved. It's concluded that the alcoholic extract of ginseng roots shows a protective and therapeutic effect on sex hormones and spermatogenesis cells, and improves spermatogenesis.

INTRODUCTION

Fertility issues have traditionally been treated using herbal treatments. As early as 200 A.D., there is proof that herbal medicines were used to improve both male and female fertility. Special herbs and plant extracts that are thought to benefit the reproductive organs, hormonal system, and sex drive are used to make these herbal fertility medicines. Both men and women who want to improve their chances of getting pregnant take them, as do couples who are having trouble conceiving [1, 2, 3]. Numerous studies have revealed that many victims have tried to enhance their libido, sexual function, and fertility by using herbal remedies like

ginseng, maca, or dang gui [4,5]. One typical Eastern Asian plant that is used as a tonic to slow down the aging process is ginseng [6]. Ginseng saponin, which is made up of several ginsenosides, is the main active component of ginseng. As of right now, about 30 ginsenosides have been found [7]. Male infertility can be effectively treated with it. It has been demonstrated to stimulate sexual activity, spermatozoa production, and testicular expansion in animals [8]. In rats, ginseng reduces oxidative stress, which raises antioxidant capacity and decreases lipid peroxidation [9]. Analgesic exposure has been linked to adverse endocrine and reproductive effects in fetuses, according to mounting data in recent years [10]. However, no comprehensive research has examined how mild analgesics affect the human pituitarygonadal axis. Ibuprofen is particularly intriguing in this regard due to its growing popularity among the general public and, in particular, among professional athletes [11]. Because of its extensive usage as a nonsteroidal anti-inflammatory medicine (NSAID) and its well-established pharmacological effects on the reproductive and endocrine systems, ibuprofen was included in the analysis [12]. According to new research, ibuprofen may affect male fertility by interfering with the hypothalamic-pituitary-testicular axis, which can result in disorders like compensatory hypogonadism that impair sperm quality and testosterone production [13]. Ibuprofen is a crucial NSAID to research in relation to male reproductive health because of these special effects [14]. so, this investigation was aimed to study the effect of alcoholic Ginseng extract against Ibuprofen induced reproductive dysfunction in male rat.

MATERIALS AND METHODS

Ibuprofen was obtained from General Company for the Manufacture of Pharmaceuticals and Medical Appliances Samarra Iraq.

Panax ginseng roots extraction

The roots of *Panax ginseng* were purchased from the Baghdad, Iraq, market. To get rid of any contaminants, properly wash the ginseng roots in distilled water. After that, thoroughly dry the roots in the shade for five to seven days at room temperature until they are entirely dry. cleaned the dried roots to get rid of any dirt or debris that could have remained. Using a grinder, grind the cleaned roots into a fine powder. 200 milliliters of 99% ethanol were added to a round-bottom flask that contained 20 grams of powdered ginseng roots. To improve extraction efficiency, the mixture was left to stand for 24 to 72 hours while being shaken periodically. Use a filter sieve to separate particles and contaminants from the solution when the soaking time is over.

To eliminate the alcohol and concentrate the flavonoids, use a rotary evaporator to concentrate the filtrate at a low temperature of about 40–50°C. After that, the extract was applied to nylon bags and allowed to dry at room temperature.

Animals

This investigation was carried out from August 24 to September 26, 2024, in the animal house of Veterinary Medicine College at Tikrit University. From the animal house of the Veterinary Medicine College at Tikrit University, seventy (70) mature male Albino rats that appeared to be in good health were acquired.

The creatures are 8–10 weeks old and weigh between 200 and 250 g, with an average of 225 g. Standard cages made of plastic measuring 46*28*13 cm were used to house the animals. They were maintained in an atmosphere that was suitable for them (20–25 C)°.

General Experimental Design

The animals that used in current study were divided into 7 groups, and each group contain 10 rats, as following:

- G1: control group received normal saline (orally) for 30 days.
- G2: rats received dimethyl sulfoxide (DMSO) (orally) daily for 30 days.
- G3: rats received Ibuprofen (120mg/kg) (orally) daily for 10 days.
- G4: rats received Ibuprofen (120mg/kg) daily for 30 days.
- G5: rats received ginseng extract (20mg/kg) (orally) daily for 30 days.
- G6: rats received Ibuprofen (120mg/kg) for 10 days and followed by ginseng extract (20mg/kg) daily for 20 days.
- G7: rats received Ibuprofen (120mg/kg) and ginseng extract (20mg/kg) daily for 30 days.

Measurements

- **Testosterone:** Sandwich-ELISA is an ELISA technique used by the ELISA Kit (SUNLONG, China) to measure the amount of testosterone in serum and plasma.
- **Follicle-stimulating hormone (FSH):** Sandwich-ELISA is an ELISA technique used by the ELISA Kit (SUNLONG, China) to measure the amount of FSH in serum and plasma.
- **Luteinizing hormone (LH):** Sandwich-ELISA is an ELISA technique used by the ELISA Kit (SUNLONG, China) to measure the amount of LH in serum and plasma.
- **Carnitine:** Sandwich-ELISA is an ELISA technique used by the ELISA Kit (SUNLONG, China) to measure the amount of Carnitine in serum and plasma.
- **Coenzyme Q10:** Sandwich-ELISA is an ELISA technique used by the ELISA Kit (SUNLONG, China) to measure the amount of Coenzyme Q10 in serum and plasma.

Histological study

Rat testis pieces were taken, fixed with 10% formalin, paraffin-processed, cut with a rotary microtome to a thickness of six micrometres, and stained with Hematoxylin and Eosin (H&E) histological stains [15,16]. Through the use of an Optica microscope (Italy), sections were inspected.

Statistical analysis

The Data on sexual hormones were analysed by using a program called Minitab (statistical program). The difference between the experimental group's means was analysed by ANOVA.

RESULTS & DISCUSSION

Table 1 shows the levels of some sexual hormones in male rats and in all study groups. Testosterone concentrations were normal in all groups and there were no significant differences ($P \leq 0.05$) between groups, as it reached 21.172 ± 0.692 in the dimethyl sulfoxide group and the third ibuprofen group (21.593 ± 1.133), which did not show significant differences ($P \leq 0.05$) compared to the rest of the groups and the control group (22.130 ± 0.377). FSH concentrations were normal in all groups and there were no significant differences ($P \leq 0.05$) between groups, as it reached 11.549 ± 0.392 in the dimethyl sulfoxide group and the third ibuprofen group (11.908 ± 1.183), which did not show significant differences ($P \leq 0.05$) compared to the rest of the groups and the control group (11.711 ± 1.178).

On the other hand, significant ($P \leq 0.05$) differences were found in the concentration of LH, where the highest concentration was in the fourth group, which took Ibuprofen for 30 days (15.493 ± 0.591) compared to the control group (14.556 ± 1.008), while the treated groups did not show significant differences ($P \leq 0.05$) compared to the control group.

| Groups | Testosterone (IU/L) | FSH (IU/L) | LH (IU/L) |
|---------|----------------------|----------------------|-----------------------|
| G1 | 22.130 ± 0.377 a | 11.711 ± 1.178 a | 14.556 ± 1.008 bc |
| G2 | 21.172 ± 0.692 a | 11.549 ± 0.392 a | 14.109 ± 0.863 c |
| G3 | 21.593 ± 1.133 a | 11.908 ± 1.183 a | 14.981 ± 0.808 ab |
| G4 | 21.686 ± 1.229 a | 12.392 ± 1.013 a | 15.493 ± 0.591 a |
| G5 | 22.052 ± 0.880 a | 11.967 ± 1.295 a | 15.152 ± 0.446 a |
| G6 | 21.739 ± 1.473 a | 11.884 ± 0.802 a | 14.091 ± 0.451 c |
| G7 | 21.301 ± 0.508 a | 12.190 ± 0.701 a | 14.100 ± 0.747 c |
| P-value | 0.528 ns | 0.864 ns | 0.01** |

Table 1: the levels of some sexual hormones in male rats and in all study groups

Our experiment demonstrated that male rats' usage of ibuprofen increased their LH levels. This idea is supported by our data from the ex vivo trials, which show that ibuprofen's direct anti-androgenic activity was the cause of the observed increase in LH.

This is in line with a prior study that found that men who volunteered to take acetylsalicylic acid, another NSAID, in combination with human chorionic gonadotropin (hCG), a hormone that mimics LH, had lower levels of steroidal hormones than controls who were exposed to hCG but not the analgesic [17].

According to the current study's findings, ginseng also improved serum sexual hormones (FSH and LH). Ginsenoside, the triterpenoid saponin that is the active component of ginseng, shares structural similarities with steroid hormones. Because ginseng has a lot of steroid receptors (androgen receptors) in the male reproductive tract, genital organs, and spermatozoa, this component of ginseng may be linked to improved sexual function and reproductive behaviour [18].

Other researchers have reported similar findings about ginseng's benefits, explaining that it acts on steroid receptors to increase testosterone synthesis and, indirectly, libido Matsumoto [19].

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Sperm properties

Table 2 showed some sperm properties in male rats and in all study groups. Sperm motility percentage in the Ibuprofen (30 days) group (48 ± 5.70) and Ibuprofen (10 days) group (72 ± 2.74) showed a significant ($P \leq 0.05$) reduction compared to the control group (89 ± 4.18). While in the ginseng group (88 ± 2.74) showed non-significant ($P \leq 0.05$) differences compared to the control group. In the treated groups, sperm motility showed a significant ($P \leq 0.05$) reduction compared to the control group, but there was an improvement compared to the Ibuprofen groups. Sperm life percentage in the Ibuprofen (30 days) group (35.2 ± 4.63) and Ibuprofen (10 days) group (52.2 ± 4.92) showed a significant ($P \leq 0.05$) reduction compared to the control group (84 ± 8.63). While in the ginseng group (82 ± 9.46) showed non-significant ($P \leq 0.05$) differences compared to the control group. In the treated groups, sperm life showed a significant ($P \leq 0.05$) reduction compared to the control group, but there was an improvement compared to the Ibuprofen groups. Sperm dead percentage in the Ibuprofen (30 days) group (64.8 ± 9.63) and Ibuprofen (10 days) group (47.8 ± 4.92) showed a significant ($P \leq 0.05$) elevated compared to the control group (16 ± 3.63). While in the ginseng group (18 ± 4.46) showed nonsignificant ($P \leq 0.05$) differences compared to the control group. In the treated groups, sperm life showed a significant ($P \leq 0.05$) elevated compared to the control group, but there was an improvement compared to the Ibuprofen groups. Abnormal sperm percentage in the Ibuprofen (30 days) group (19.6 ± 3.85) and Ibuprofen (7 days) group (13 ± 1.0) showed a significant ($P \leq 0.05$) elevated compared to the control group (7.6 ± 2.074). While in the treated groups and the ginseng group (8.2 ± 2.39) showed non-significant ($P \leq 0.05$) differences compared to the control group. Sperm count percentage in the Ibuprofen (30 days) group (10.2 ± 1.483) and Ibuprofen (10 days) group (17.8 ± 2.164) showed a significant ($P \leq 0.05$) reduction compared to the control group (31.4 ± 2.103). While in the ginseng group (28.0 ± 5.147) showed a significant ($P \leq 0.05$) reduction compared to the control group. In the treated groups, sperm count showed a significant ($P \leq 0.05$) reduction compared to the control group, but there was an improvement compared to the Ibuprofen groups.

| Groups | Sperm Motility % | Life Sperm | Dead Sperm | Abnormal Sperm | Sperm count |
|---------|------------------|--------------------|--------------------|--------------------|--------------------|
| G1 | 89 ± 4.18 a | 84 ± 8.63 a | 16 ± 3.63 e | 7.6 ± 2.074 c | 31.4 ± 2.103 a |
| G2 | 56 ± 4.18 d | 65 ± 2.74 d | 35 ± 2.74 c | 11.4 ± 1.140 b | 20.8 ± 3.582 d |
| G3 | 72 ± 2.74 c | 52.2 ± 4.92 e | 47.8 ± 4.92 b | 13 ± 1.0 b | 17.8 ± 2.164 e |
| G4 | 48 ± 5.70 e | 35.2 ± 4.63 f | 64.8 ± 9.63 a | 19.6 ± 3.850 a | 10.2 ± 1.483 f |
| G5 | 88 ± 2.74 a | 82 ± 9.46 ab | 18 ± 4.46 e | 8.2 ± 2.39 c | 28.0 ± 5.147 b |
| G6 | 77 ± 2.74 b | 76.8 ± 4.15 c | 23.2 ± 4.15 d | 8.8 ± 1.643 c | 24.8 ± 3.667 c |
| G7 | 75 ± 3.54 bc | 79.8 ± 3.35 bc | 20.6 ± 3.71 de | 8 ± 2.35 c | 23.1 ± 3.324 c |
| P-value | 0.00004 | 0.0008 | 0.0008 | 0.002 | 0.0007 |

Table 2: The features of sperm in the studied groups

Ibuprofen's effects on sperm parameters were demonstrated in the current study using rats as an experimental model. In both groups, Ibuprofen can lower the percentage of fast spermatozoa motility, according to the sperm motility assessment. Aspirin, a non-steroidal inhibitor of cyclooxygenase (COX), has been shown to have detrimental effects on sperm motility. These findings were consistent with those of Ekalou et al. (20). Similar outcomes were also noted by Ekalou et al. following a 90-day aspirin treatment. The decrease in sperm viability and count could be the consequence of apoptosis or necrosis, which were brought on by pharmacological treatments, particularly in the high dose group in the later stages. In the current investigation, ginseng treatment proved efficient in increasing sperm motility and morphology. Dahlberg (21) noted that sperm motility and fertility are connected, with human sperm motility being identified as the most significant factor in fertility. It was reported by Morgentaler et al. (22) that sperm morphology affects fertility. According to Choi et al. (23), ginseng root will promote the morphology and motility of epididymal sperm, but it won't alter the concentration of sperm in male rats. The high concentration of active ingredients in ginseng root, including saponins, phenolic compounds, alkaloids, polyacetylene, and polysaccharides, was noted by Shin et al. (24) as having a significant impact on reproductive efficacy. (25) noted that ginsenoside, a compound found in ginseng root that resembles steroid hormones in composition, is one of the chemicals that encourage sexual activity. Ginsenoside will cause male rats' anterior pituitary glands to secrete more LH (26).

Coenzyme Q10 & Carnitine

| Groups | Coenzyme Q10 (mg/L) | Carnitine (mg/L) |
|---------|----------------------|--------------------|
| G1 | 4.193 ± 0.661 ab | 3174 ± 100.4 a |
| G2 | 3.769 ± 0.327 b | 1841 ± 80.7 a |
| G3 | 7.879 ± 1.949 a | 3665 ± 105.7 a |
| G4 | 5.464 ± 1.835 ab | 2857 ± 90.2 a |
| G5 | 7.987 ± 0.714 a | 3830 ± 120.4 a |
| G6 | 7.056 ± 0.663 ab | 3689 ± 106.9 a |
| G7 | 7.792 ± 1.137 a | 2237 ± 85.04 a |
| P-value | 0.05 * | 0.05 * |

Table 3: The activity of Coenzyme Q10 & Carnitine in the studied groups

Table 3 shows the levels of some parameters in male rats and in all study groups. Coenzyme Q10 activity in the Ibuprofen (10 days) group (7.879 ± 1.949) exhibited significant ($P \leq 0.05$) differences when compared to the control (4.193 ± 0.661).

The treated groups and the ginseng group (7.987 ± 0.714) showed non-significant ($P \leq 0.05$) differences compared to the control group.

The Carnitine levels in the Ibuprofen (30 days) group (2857 ± 90.2) exhibited non-significant ($P \leq 0.05$) differences when compared to the control (3174 ± 100.4).

While the treated groups and ginseng group (3830 ± 120.4) exhibited nonsignificant ($P \leq 0.05$) differences when compared to the control group.

Same letters mean there are non-significant ($P \leq 0.05$) differences. Where different letters mean there are significant ($P \leq 0.05$) differences. NSAIDs are used primarily for their anti-inflammatory, anti-fever, and pain-relieving properties, but they also have other therapeutic effects. Without taking into account their toxic effects and contraindicated instances, they are mostly available as over-the-counter medications (27). NSAID use has been linked to several pathological situations, particularly when used over an extended period of time, and has been shown to significantly alter Coenzyme Q10 (28). According to the results of the current investigation, ginseng consumption did not significantly alter urea levels. By decreasing gentamicin accumulation in the renal tubule, P. ginseng extract has been demonstrated to be useful in preventing kidney damage. An evaluation of P. ginseng's nephroprotective effect on gentamicin-induced nephropathy revealed improvements in renal function assessment indicators (29). Given that CoQ10 is a potent antioxidant, this validates the findings of the current study that ginseng can raise the levels of Carnitine and Coenzyme Q10 in mice, which in turn improves the properties of the testicles and tissues. CoQ10 scavenges lipid peroxidation products during free radical reactions (31) and prevents the production of ROS (30).

Histological study

Control group

The parenchyma of the testis had Crowded Seminiferous tubules, each lumen of the tubules had Spermatogonia, which are resting on the basement membrane (B.M.), and other spermatogenic stages of development. The interstitial connective tissue had blood vessels surrounding the Leydig cells (Fig. 1).

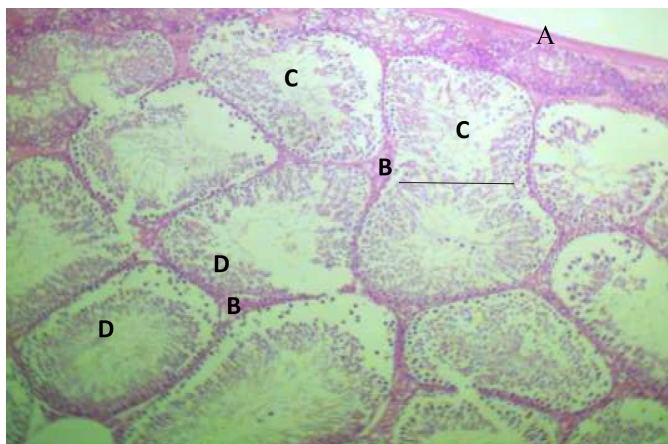


Figure 1: Histological section from the testis of the rat (G1) shows: Parenchyma of Testis, capsule (A). Interstitial connective tissue (B), crowded seminiferous tubule (C), spermatogenic developments (D) (H&E X10)

Dimethyl sulfoxide (DMSO)

The Capsule of the testis was formed by dense Collagen fibers with fibroblasts. Subcapsular blood vessels were present, containing hemolyzed blood. The lumen of the seminiferous tubules had small-sized spermatogonia resting on the basement membrane.

Great size primary Spermatocyte and smaller size with double rows of Secondary Spermatocyte. Spermatids were seen in small groups, and the center of each seminiferous tubule had spermatozoa (fig 2).

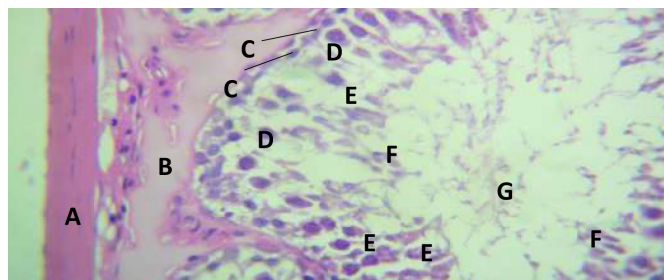


Figure 2: Histological section from the testis of the rat (G2) shows : Capsule of testis formed by dense Collagen bundle (A) . Subcapsular hemolyzed blood (B) . spermatogonia (C) . hypertrophied primary spermatocyte (D) . secondary spermatocyte (E) . Spermatide (F) spermatozoa (G) (H & E X40)

Ibuprofen (10 days) group

Seminiferous tubules had spermatogonia resting on the basement membrane, primary and secondary Spermatocytes were present, and the small size of spermatids in Clusters was evident near the center of seminiferous tubules. Spermatozoa were seen in the center of seminiferous tubules, and Leydig cells were present in the interstitial connective tissue in small groups (Fig. 3).

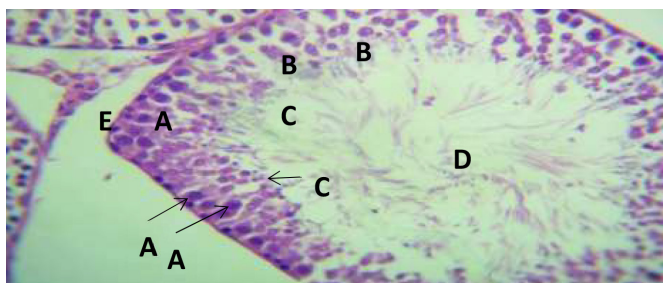


Figure 3: Histological section from the testis of the rat (G4) shows : seminiferous tubule basement membrane (A) . primary spermatocyte (B) . groups of secondary spermatocyte (C) . Clusters of Clusters of spermatide (D) . Flame like spermatozoa (E) . Leydig cells (F) . (H&E X40)

Ibuprofen (30 days) group

Seminiferous tubules were demonstrated to be occupied with spermatogonia, a row of Primary Spermatocytes, 23 rows of Secondary Spermatocytes, and groups of spermatids. The center of the seminiferous tubules had Spermatozoa, which appeared flame-like toward the Sertoli cells, which are resting on the basement membrane. Groups of Leydig cells were located in the interstitial connective tissue (Fig. 4).

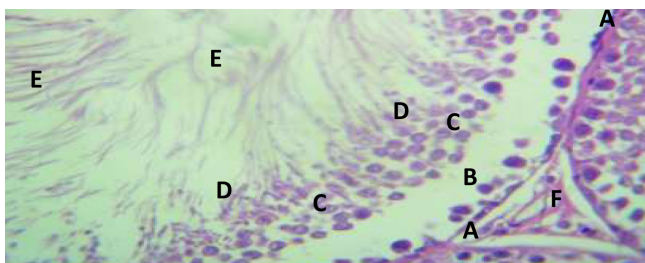


Figure 4: Histological section from the testis of the rat (G4) shows : seminiferous tubule basement membrane (A) . primary spermatocyte (B) . groups of secondary spermatocyte (C) . Clusters of Clusters of spermatide (D) . Flame like spermatozoa (E) . Leydig cells (F) . (H&E X40)

Ginseng (30 days)

The Capsule of testis was formed by dense Collagen fibers, there was many Spermatogenic cells surrounded by collagen bundle, Great Cavities of seminiferous tubule had degenerated spermatogonia and other cells of Spermatocytes were absent homogenized odema were present inside the lumen of Certain seminiferous tubules (fig: 5).



Figure 5: Histological section from the testis of the rat (G5) showed Capsule of testis formed by Collagen bundle (A). (H & E X10)

Ibuprofen (10 days) and ginseng (20 days)

The testicular tissue was coated with a capsule of collagen bundles, the parenchyma of the testis was occupied with crowded seminiferous tubules, which had different stages of Spermatogenic development, the interstitial connective tissue had groups of Leydig cells with blood capillaries (Fig. 6).

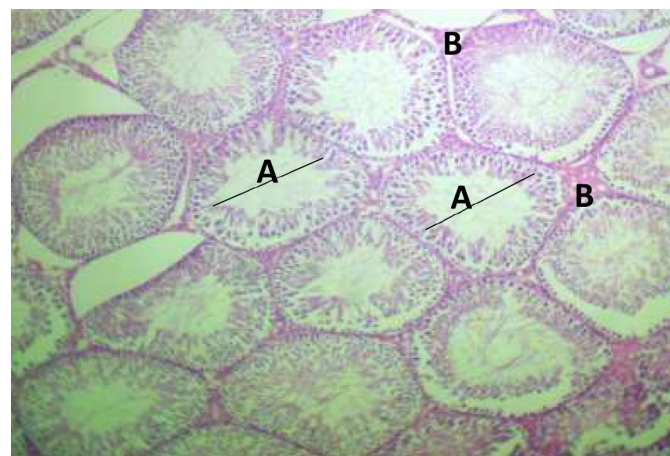


Figure 6: Histological section from the testis of the rat (G6) showed parenchyma of testis, Crowding of seminiferous tubules, with different stages of spermatogenic development (A). Interstitial connective tissue with blood Capillaries (B) Leydig cells (C) (H&E x10)

Ibuprofen + ginseng together (30 Days)

Seminiferous tubules contained the different stages of spermatogenic development. Primary spermatocytes in certain tubules appeared atrophied, and secondary spermatocytes were abundant and intermingled with spermatids. Scanty spermatozoa were seen in certain seminiferous tubules.

The blood vessels in the interstitial connective tissue were engorged with hemolyzed blood in the form of pools with the presence of small fat droplets in the lumen of the basement cavity (Fig 7).

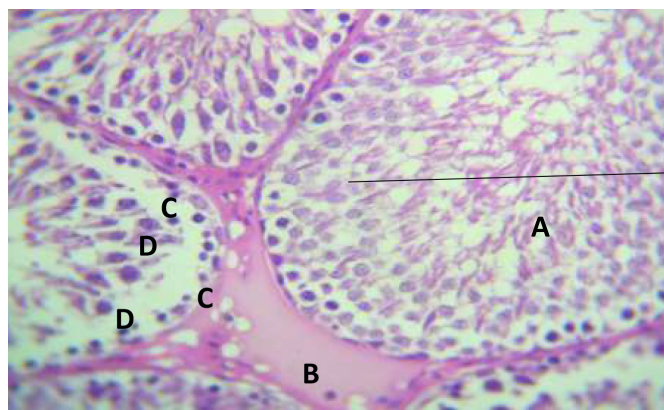


Figure 7: Histological section from the testis of the rat (G7) showed Seminiferous tubules, spermatogenic development (A). hemolyzed blood with small droplets of fat (B). Atrophy of primary spermatocytes (C). Hypertrophy of secondary Spermatocyte (D) (H&E X 40)

The histological analysis of rats given ibuprofen and dimethyl sulfoxide for 10 and 30 days showed various histological alterations, such as hemolyzed blood vessels, fewer spermatogonia, and a lower sperm count. Seminiferous tubules were found to contain the various phases of spermatogenic development, and the majority of spermatogenic cells were improved when ginseng extract was used to cure and prevent the negative effects of ibuprofen. Ibuprofen has been shown in several studies to have a remarkable dual effect on both Leydig and Sertoli cells. This makes it the NSAID with the most extensive endocrine-disturbing qualities found in males to date, considering all chemical classes. Only on Leydig cells have prior ex vivo investigations on the adult testis indicated antiandrogenicity (32,33,34). The study found that the interstitium widened with a large gap between cut parts of the seminiferous, which was in agreement with the findings of Halawa and Nagwa (35).

Numerous seminiferous tubules displayed apparent hypocellularity at every stage, along with symptoms of nuclear pyknosis, cell degeneration, and loss of germ cells. In several areas of the section, cell membranes were visible, although seminiferous tubular epithelium appeared to be separated from the basement membrane. Hyaline material was deposited in the interstitium, and numerous dilated, clogged blood vessels were visible. On the other hand, according to the current study, ginseng root extract effectively improves and shields testicular tissue from the harmful effects of ibuprofen. Ginseng has been demonstrated in subsequent research to enhance the number of sperm in both people and animals. Rats given ginseng have shown an enhanced rate of spermatogenesis by activation of the testicular cAMP-responsive element modulator (CREM) (36) and elevation of glial cell-derived neurotrophic factor (GDNF) production in Sertoli cells (37). Ginsenosides (0.01 mg/ml) have also been demonstrated to promote sperm development in vitro, according to Chen et al. (38). In the other study, it was discovered that via modifying the expression of Fas/Fas-L, Korean red ginseng (300 mg/kg) taken every other day for four weeks might prevent rats from experiencing spermatogenesis impairment caused by zearalenone (39).

CONCLUSIONS

Based on the results of the current study, the alcoholic extract of ginseng roots shows a protective and therapeutic effect on sex hormones and spermatogenesis cells, and improves spermatogenesis. This may be due to its presence of active substances that play a role as antioxidants.


Conflict of interest

The authors declare that there are no conflicts of interest.

Ethics and institutional animal care and use committee (IACUC):

The research methodology and protocols were reviewed and approved by the scientific committee of Veterinary Medicine College, University of Tikrit, Salah Alden-Iraq (TU.VET.30) in compliance with animal welfare ethical measures prior to any experiments being conducted.

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Time series analysis of urethral obstruction in male cats in a veterinary teaching hospital in São Paulo, Brazil

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Introduction

Time series analysis can be used to understand and forecast patterns in sequential data. This study evaluated three statistical models—ARIMA, Holt-Winters, and linear regression—on the time series of urethral obstruction (UO) cases in male cats treated at the Veterinary Teaching Hospital – São Paulo State University, Botucatu, Brazil.

Among the 5,230 cats evaluated between 2010 and 2020, the prevalence of UO in male cats was 7.4% (95% CI: 6.7–8.1%), and the incidence among cats showing lower urinary tract signs was 36.0% (95% CI: 33.19–38.93%). Most affected cats were neutered (60.94%), with a mean body weight of 4.24 ± 1.11 kg and higher body condition scores. ARIMA closely followed historical data but was ineffective for future forecasting, showing a flat projection from 2021 to 2024 (rate: 0.64) despite past fluctuations. The Holt-Winters model projected a rise in UO cases, from 0.70 (95% CI: 0.43–0.97) in 2021 to 1.09 (95% CI: 0.38–1.79) in 2024, but its wide confidence intervals indicated potential overestimation.

Meanwhile, linear regression revealed a significant annual increase of 2.6% in UO cases ($p = 0.042$), explaining 38% of the variance and offering a more accurate long-term forecast, and then, it was considered the most suitable model, capturing trends without overestimating future rates. These findings support improved surveillance, clinical protocols, preventive strategies, and hospital resource planning for managing UO in male cats in a teaching veterinary hospital scenario.

In medical emergencies predominantly affecting male cats, urethral obstruction (UO) stands out as one of the most relevant conditions involving the urinary tract^{1,2}. It is frequently associated with feline lower urinary tract disease (FLUTD), a clinical syndrome widely reported in veterinary practice³. Urine retention may rapidly lead to systemic deterioration and potentially death. These cases require medical stabilisation, hospitalisation for relief of obstruction, and intensive monitoring, with variable hospitalisation times^{3–6}. In this context, understanding the behaviour of the disease over a series of timelines, as well as estimating future patterns, may be valuable.

Time series analysis is a valuable tool for modelling temporal patterns and forecasting future trends in both infectious and non-infectious diseases⁷. Despite its broad application in human epidemiology, its use in veterinary medicine – particularly for small animal diseases – remains limited. Common statistical models employed in time series analysis include autoregressive integrated moving average (ARIMA), Holt-Winters, and linear regression, each offering specific advantages depending on data structure^{8–10}. In veterinary epidemiology, linear regression has been used to evaluate the risk of diseases¹¹ while ARIMA and Holt-Winters models have been applied to predict disease outbreaks¹² and assess public health impacts during epidemics¹³.

The UO in male cats can have various causes, including feline idiopathic cystitis (FIC), urethral plugs (p), urolithiasis (u), urinary tract infection (UTI), neoplasms (neo), and anatomical defects (ad)^{3,14–16}. The prevalence of different etiologies of UO in male cats has been reported over time and varies according to the population studied. For instance, Kruger et al.¹⁷ demonstrated that UO caused by urethral plugs occurs in approximately 21% of cats diagnosed with FLUTD. Gerber et al.¹⁴ identified idiopathic FLUTD (53.3%), urolithiasis (28.8%), and urethral plugs (17.7%) as the main causes of UO in a population of 45 cats. Similarly, Dorsch et al.¹⁵ observed that UO was significantly more frequent in cats with FIC (57.1%) than in those with UTI (28.5%). More recently, Lew-Kojrys et al.¹⁶ also reported that UO was more common in cats with FIC (55.1%), urethral plugs (100%), and urolithiasis (56.0%), compared to those with UTI (13.3%) and neoplasms (25.0%), in a population of 229 cats with obstructive FLUTD.

Numerous male cats with UO are annually admitted to the Veterinary Teaching Hospital of the São Paulo State University (UNESP) in Botucatu, São Paulo. In recent years, an apparent increase in UO cases has been noted, raising concerns about potential seasonal patterns or long-term trends. However, there is currently a lack of data-driven methods to quantify such trends, forecast future cases, or inform hospital resource planning.

Therefore, the aim of this study was twofold: (1) to determine the prevalence and incidence of UO over 11 years; and (2) to evaluate which among three time series models—ARIMA, Holt-Winters, and linear regression—best captures the observed temporal patterns of UO in male cats. This approach seeks to address a relevant gap in veterinary epidemiological literature and to provide data-driven insights for clinical planning and disease prevention strategies.

Methods

Ethics statement

This study followed the recommendations of the Brazilian National Council for the Control of Animal Experimentation (CONCEA) and was approved by the Ethics Committee on the Use of Animals (CEUA) in Research at the School of Veterinary Medicine and Animal Science (FMVZ) at the São Paulo State University — UNESP (0235/2021). All procedures followed the guidelines and regulations of the UNESP ethics council. Before any medical intervention and for inclusion in the study, written informed consent was obtained from all cat owners. The research followed ARRIVE criteria.

Eligibility assessment and data collection

A retrospective review was conducted using 5,230 medical records of cats treated at the Veterinary Teaching Hospital of FMVZ–UNESP in Botucatu, São Paulo, Brazil, a region known for having a high

number of cases of UO. Two independent reviewers manually screened records to identify male cats presenting clinical signs consistent with FLUTD, including ischuria, hematuria, stranguria, pollakiuria, periuria, or dysuria. From this initial cohort, only cases diagnosed with UO were selected, regardless of the underlying aetiology.

Exclusion criteria included absence of LUT signs, female sex, diagnosis of non-obstructive FLUTD, comorbidities of infectious, parasitic, fungal, or traumatic nature, and duplicate records. A total of 386 male cats with UO met all inclusion criteria and were retained for final analysis.

Among the selected animals, data on sex, age, breed, body weight, reproductive status (neutered or intact), and clinical signs presented in the emergency room were noted.

Statistical analysis

Data distribution was analysed using the Shapiro-Wilk test. Parametric analyses were performed on the variables body weight and number of UO cases. Comparison of body weight between castrated and intact animals was performed using the unpaired t-test. Data are shown as the mean \pm standard deviation (SD). Significant differences were considered when $p < 0.05$. The nonparametric Mann-Whitney test was applied to compare the BCS values between castrated and intact animals; the results are shown as median (Q1–Q3).

Significant differences were considered when $p < 0.05$. Comparison between the cause of UO, BCS, and body weight was also performed. Diet and breeds were considered for descriptive analysis.

The obstruction rate, calculated as the ratio between the number of UO cases per year and the number of cats per year, was analysed using ARIMA (autoregressive integrated moving average) time series models. ARIMA models are effective for modelling stationary data; they capture temporal dependencies through autoregressive (AR), differencing (I), and moving average (MA) components. Model selection and parameter estimation (p , d , q) were guided by autocorrelation function (ACF) and partial autocorrelation function (PACF) plots. Likewise, the Akaike Information Criterion (AIC) was used to optimise the model, with parameters set to $h = 24$ h and a 95% confidence level. This modelling strategy allows for the identification of autocorrelated structures and seasonal fluctuations. The finalised ARIMA model was then used to project UO cases in cats for the years 2021, 2022, 2023, and 2024. All analyses were conducted using the “stats,” “tseries,” and “forecast” packages in R (version 4.1.3).

The Holt-Winters exponential smoothing model was applied to capture trend and seasonality in the time series data. This model assigns greater weight to more recent observations while exponentially decreasing the influence of older values⁹. It decomposes the data into three components: a baseline value (representing the overall mean of the period), a trend, and seasonal components, which improves forecast accuracy, especially in cases of non-stationary time series. Based on these patterns, the model provides an exponential forecast for the trend in the next cycle. Likewise, projections for the period 2021–2024 were employed.

Finally, a simple linear regression model was developed with year as the dependent variable and case rate as the independent variable to determine the regression equation.

A scatter plot with the fitted regression line was created for visualisation. The regression model is represented as follows¹⁸.

$$Y_i = A + BX_i + E_i$$

Y_i represents the response variable, B is the slope coefficient indicating the average change in Y per one-unit increase in X , A is the intercept (the value of Y when $X = 0$ e E_i), and E_i denotes the error term for each predicted value. To further illustrate these analyses, boxplots and time series plots were generated. A 5% significance level was applied, and all analyses were conducted using R software (version 4.1.0; R Core Team, 2021).

Results

Study population data

In the survey of cases, 5,230 cats were seen between January 2010 to December 2020 at the Veterinary Teaching Hospital of the UNESP in Botucatu, São Paulo. Of the 5,230 records of cats found in the hospital database, 4,158 (79.5%) were excluded due to not presenting signs of the LUT. Furthermore, among the remaining cats, 295 (5.64%) were females and were subsequently excluded from the study. Among the remaining male cats, 198 (3.7%) were diagnosed with nonobstructive FLUTD. Out of the male cats with UO, 92 (1.75%) presented with other comorbidities, which included infectious, parasitic, fungal, or traumatic conditions (car accident, fight with other animals). Additionally, 101 (1.9%) cats with duplicate records were excluded from the analysis (Fig. 1).

Following the application of the exclusion criteria, 386 male cats (7.4%; 95% CI: 6.7–8.1%) were retained for analysis and diagnosed with UO (Fig. 2). The mean body weight of these cats with UO was 4.24 ± 1.11 kg, and the mean age was 98.40 ± 53.94 months. Of the cats with information on reproductive status, 60.94% were castrated (181/297) and 39.06% were intact (116/297).

In our study, castrated male cats exhibited a greater body weight (4.66 kg \pm 1.13 kg) compared to intact male cats (3.77 kg \pm 1.11 kg) ($p < 0.001$). Additionally, when considering reproductive status and BCS, castrated male cats had higher BCS compared to intact cats, 6 (5–7) vs. 5 (4–5.75) ($p < 0.0001$). In the population of cats with UO of our study, the distribution frequency according to the breed is presented in Fig. 3a. Notably, the most common type of diet provided by owners, primarily dry food, is depicted in Fig. 3b.

In investigating the causes of UO among the 386 cats, an underlying cause was identified in 15.3% ($n = 59$) of cases. These underlying causes were found either in isolation or in combination within the same animal. FIC appears to be the most common cause of UO in the study population. Incomplete medical records prevented the determination of the underlying causes of UO in 327 cats (Fig. 3c).

LUT and systemic clinical signs, including depression, anorexia or hyporexia, polydipsia, hypothermia, and erection, were evaluated (Supplementary Fig. S1). In our study, each cat ($n = 386$) presented at least two clinical signs upon emergency care. The frequency of clinical signs categorised by the cause of UO is presented in Table 1.

Prevalence and incidence

The calculated mean annual prevalence of UO considering the total cat population ($n = 5,230$) was 7.4% (95% CI: 6.7–8.1%). Among the total cat population, 1,072 showed LUT signs.

For this subset of cats ($n = 1,072$), the mean annual incidence of UO was 36.0% (95% CI: 33.19–38.93%) (Fig. 4, Supplementary Table S1).

Time series analysis

To analyse the projection of cases over the years, the autoregressive integrated moving average (ARIMA), Holt-Winters, and linear regression methods were applied.

For the ARIMA method, the annual case rate as a time series, along with the autocorrelation function (ACF) and partial autocorrelation (PACF) plots, is presented in Supplementary Fig. S2. The model aligns well with the data, as the observations fall within the confidence limits in both autocorrelation and partial autocorrelation analyses.

In the projection analysis for the years of 2021, 2022, 2023, and 2024, it was predicted a rate of 0.64 of UO in male cats, maintaining the same pattern with no oscillations (Fig. 5). However, based on the fluctuations observed from 2010 to 2020 it is not possible to confirm that the consistency rate will remain stable in the projected years, making this model unsuitable for predicting future case rates.

Conversely, the predictive Holt-Winters model showed an increase in the rate of UO in male cats over the projected years (2021 to 2024) (Fig. 6). The predicted rate for 2021 was 0.70 (95% CI: 0.43–0.97). In 2022, the predicted rate increased to 0.83 (95% CI: 0.46–1.20), while for the year 2023, the rate was 0.96 (95% CI: 0.44–1.48). Finally, for 2024, a predicted rate of 1.09 (95% CI: 0.38–1.79) was encountered. These results reflect a rising trend in case rate over the years, with broader confidence intervals for more distant projections. In the linear regression model, the results indicated a mean annual increase of 0.026 (2,6%) in the rate of cases of UO ($p = 0.042$) (Table 2; Fig. 7). The adjusted coefficient of determination suggested that 38% of the variation in the case rate is explained by the model. Besides the variation in the rate of UO over the years, a linear behaviour could be observed with a tendency of increase of 2.6% per year.

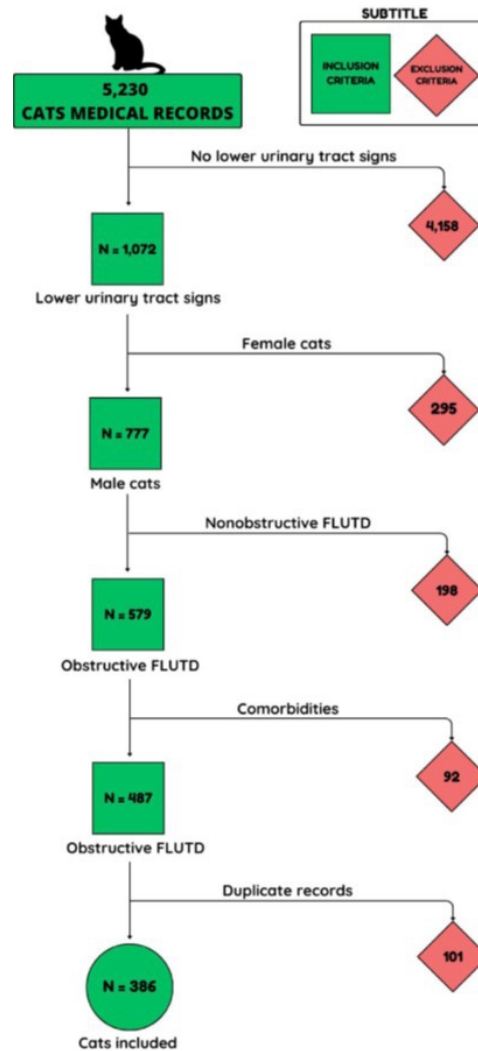


Figure 1: Flowchart illustrating the decision-making process (inclusion and exclusion criteria) for obtaining the study population (n = 386)

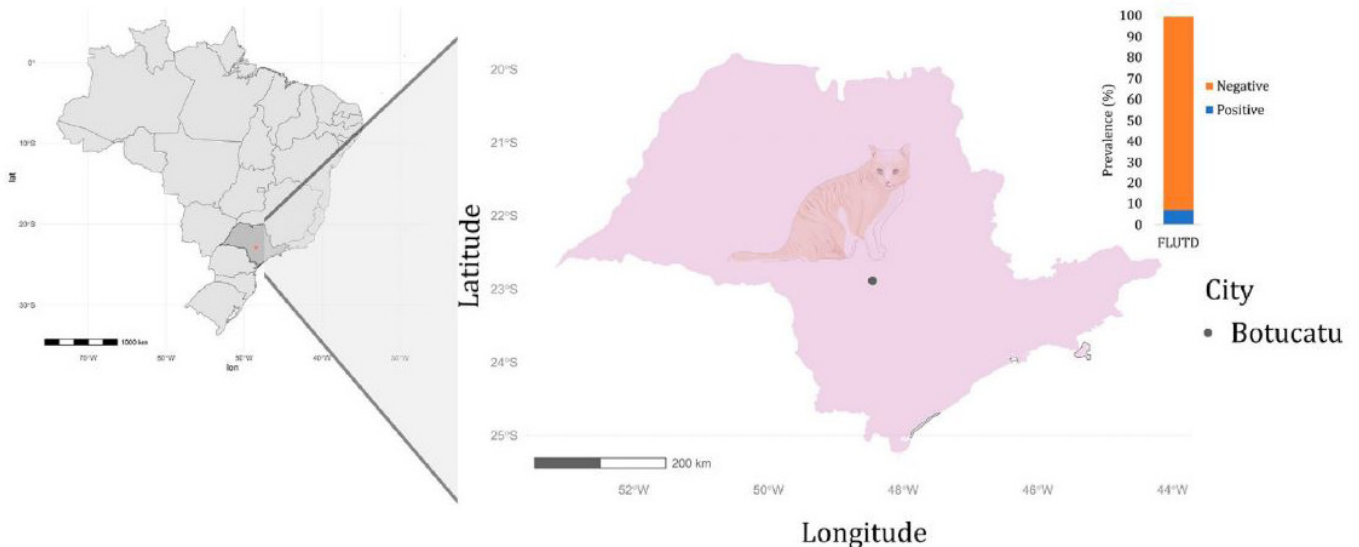


Figure 2: Territorial representation of Botucatu (latitude 22° 53’09” south and longitude 48° 26’42” west”) in São Paulo, Brazil, and the mean annual prevalence of the period considered in the study (January 2010 to December 2020). The figure was generated using the rnatureearth package (<https://github.com/ropensci/rnatureearth>) and ggplot (<https://ggplot2.tidyverse.org/>), on the R platform. This work is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 3.0 International License

Discussion

This study is the first to present epidemiological data on the incidence and prevalence of UO in male cats and to apply time series modelling to investigate long-term trends in feline UO in a veterinary teaching hospital setting. Over 11 years, our study evaluated three statistical models—ARIMA, Holt-Winters, and linear regression—to forecast case rates and describe epidemiological patterns.

In our study, the mean annual prevalence of 7.4% significantly exceeded previous reports^{19,20}, and closely aligned with findings from Lekcharoensuk et al.¹. These discrepancies in prevalence across studies may be attributed to population differences, caseload characteristics of referral centres, or regional environmental influences. In contrast, the incidence of UO in North American veterinary hospitals has ranged from 2–13%,²¹ differing from our reported mean annual incidence.

This variation is also evident when compared to Jukes et al.²¹, who found higher incidence rates. Notably, our study focused on male cats with UO, whereas previous reports included both sexes. Regarding the demographic characteristics of affected male cats, our findings align with previous reports, with a predominance of middle-aged, neutered male cats exhibiting higher body weight and BCS. These factors have been consistently associated with an increased risk of UO^{16,22,23}, possibly due to anatomical and physiological predispositions.

Paulo, Brazil, and the mean annual prevalence of the period considered in the study (January 2010 to December 2020). The figure was generated using the *rnatuarearth* package (<https://github.com/ropensci/rnatuarearth>) and *ggplot* (<https://ggplot2.tidyverse.org/>), on the R platform. This work is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 3.0 International License.

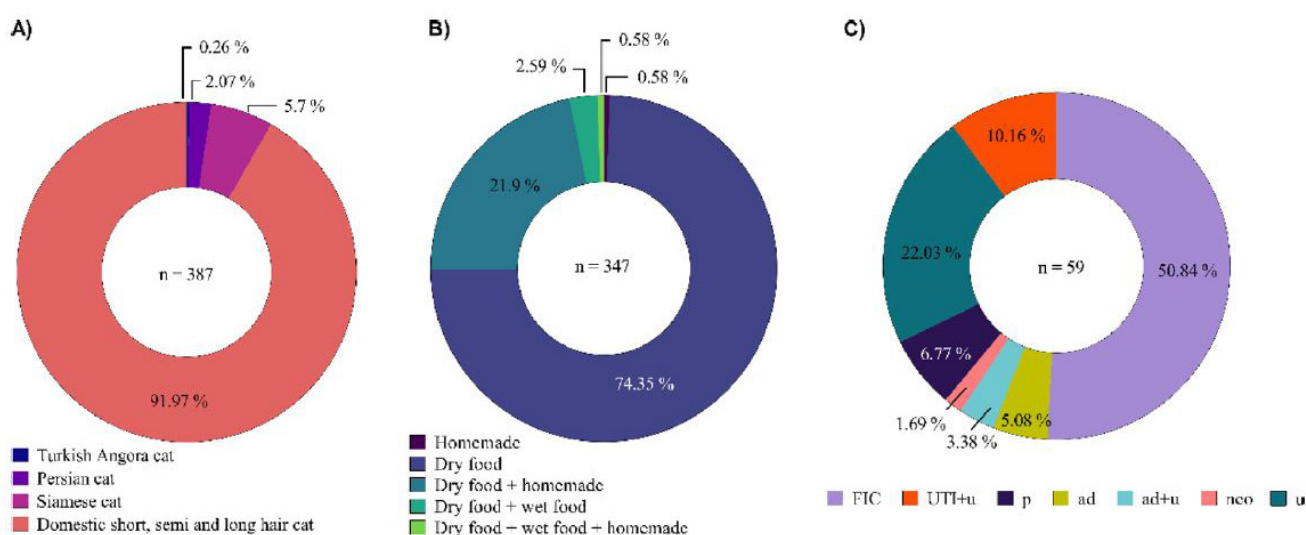


Figure 3: Percentual representation of male cat breeds, diet, and cause of obstruction. (a) Per cent ratio of male feline breeds. (b) The main diets provided by owners to male cats diagnosed with urethral obstruction (UO). (c) The main causes of UO were identified in 59 male cats with a conclusive diagnosis. Feline idiopathic cystitis (FIC); urinary tract infection (UTI); urolithiasis (u); plugs (p); anatomical defect (ad); neoplasia (neo)

Similar to previous studies^{16,24,25}, the presence of multiple underlying causes for UO was also noted in our study, with FIC being the predominant aetiology. In this context, the integration of behavioural, environmental, and systemic health data into clinical surveillance could enable the development of aetiology-specific forecasting models. Such multidimensional approaches may yield improved predictions of recurrence risk and help identify subpopulations of cats more susceptible to UO under specific stress or immunological conditions^{3,26,27}.

The clinical signs most commonly observed in our study, including dysuria, stranguria, and pain-related behaviours, further support the established pathophysiology of FLUTD, in which stress-induced neurogenic inflammation plays a central role^{26,28,29}. Although LUT signs are commonly observed in feline UO, additional clinical manifestations associated with the duration of urinary retention (ischuria) may also be present^{2,5,19}. In our study, clinical signs such as anorexia, hyporexia, depression, and hypothermia were identified.

In the application of time series modelling to investigate long-term trends in feline UO, the three statistical models—ARIMA, Holt-Winters, and linear regression—revealed different trends towards case rates. While the ARIMA model aligned with historical data, it predicted a flat trend for future years. However, given the fluctuations in case rates observed from 2010 to 2020, it is not possible to confirm that the consistency rate will remain stable in the projected years, making this model unsuitable for predicting future patterns.

Meanwhile, the Holt-Winters model showed a progressive increase in UO case rates over the year with broader confidence intervals for more distant projections. Although the model has applicability in our data setting, it may overestimate future projection trends. Conversely, the linear regression model identified a statistically significant annual increase of 2.6% in UO case rates. In our study, both Holt-Winters and linear regression models demonstrated complementary results, highlighting a consistent upward trend in the case rates for UO, with linear regression fitting as the most reliable model to reflect more distant projections without overestimating UO case rates.

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| Frequency Distribution (n = 59*) | | | | | | | |
|----------------------------------|--------------|-----------------------|----------------------------|---|---------------|----------------------------|-------------------|
| Clinical sign | FIC (n = 30) | Urolithiasis (n = 13) | UTI + urolithiasis (n = 6) | Urolithiasis + anatomical defects (n = 2) | Plugs (n = 4) | Anatomical defects (n = 3) | Neoplasia (n = 1) |
| Dysuria | 93.3% | 84.6% | 66.6% | 100% | 100% | 100% | 100% |
| Stranguria | 83.3% | 84.6% | 83.3% | 100% | 100% | 100% | 100% |
| Anorexia/hyporexia | 63.6% | 69.2% | 66.6% | 100% | 100% | 33.3% | 100% |
| Hypothermia | 53.3% | 46.1% | 16.6% | 50% | 50% | 66.7% | 0% |
| Depression | 56.6% | 38.5% | 16.6% | 50% | 75% | 33.3% | 100% |
| Pollakiuria | 53.3% | 69.2% | 66.6% | 100% | 75% | 66.7% | 100% |
| Hematuria | 20% | 38.5% | 33.3% | 50% | 75% | 33.3% | 0% |
| Grooming (penis) | 20% | 23.1% | 0% | 50% | 50% | 33.3% | 0% |
| Agitation | 13.3% | 15.4% | 0% | 50% | 0% | 0% | 0% |
| Penile erection | 13.3% | 15.4% | 0% | 50% | 0% | 33.3% | 0% |

Table 1: Frequency distribution of lower urinary tract (LUT) and systemic clinical signs in male cats with urethral obstruction (UO) according to the underlying cause of obstruction: feline idiopathic cystitis (FIC), urinary tract infection (UTI), urolithiasis, plugs, anatomical defects, and neoplasia. The data are presented for 59 cats with the cause of UO identified from January 2010 to December 2020 after a complete investigation. Three cats with urethral obstruction had more than one diagnosis simultaneously; therefore, data on clinical signs were not presented, considering the possibility of clinical signs overlapping between different causes of obstruction. † Incomplete medical records prevented the precise determination of the underlying cause of UO in 327 male cats

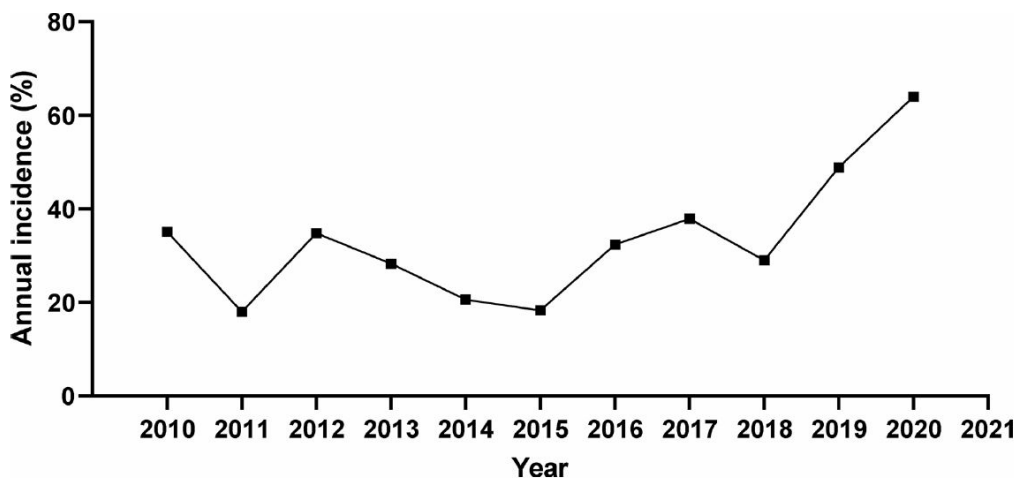


Figure 4: Annual incidence for cases of urethral obstruction (UO) in male cats at the Veterinary Teaching Hospital in the São Paulo State University, Botucatu, São Paulo

The increasing trend identified through these models underscores the growing clinical relevance of UO in feline practice. This trend may reflect both a genuine increase in incidence and improved detection or reporting practices over time. Importantly, this is the first study to quantify UO trends using predictive models, offering a valuable foundation for future surveillance and strategic hospital resource allocation.

A notable observation in our data was the increase in UO case rates during 2019 and 2020, which coincided with the onset of the COVID-19 pandemic. A recent study reported a similar rise in UO incidence during this period, suggesting that environmental changes – such as increased owner presence at home – may have heightened stress levels in cats and contributed to clinical expression of FLUTD30. In our setting, increased owner attentiveness may have facilitated earlier detection of clinical signs related to LUT. It is noteworthy that disruptions to feline routines and enriched environments could have exacerbated stress-related FLUTD. These findings support previous evidence that stress modulation plays a central role in UO pathogenesis^{16,24,26} and emphasise the importance of incorporating environmental and behavioural variables into preventive strategies.

The upward trend in UO rates projected by the Holt-Winters and linear regression models may reflect not only long-term behavioural and environmental influences but also a potential persistence of the elevated incidence observed during the COVID-19 pandemic. While an increase in UO incidence during this period has been reported³⁰ our projections suggested that these changes may not have been transient. In contrast, Jackson et al.³¹ found no significant difference between pre- and intra-pandemic UO rates. However, more recent findings by Dahmani and Zenia³² covering 2023 and 2024—a period encompassed by our projections—also revealed higher UO rates compared to earlier studies^{1,33,34}, reinforcing the notion of a sustained increase in case frequency.

Moreover, the increase in UO during the COVID-19 pandemic demonstrated by time series analysis, may be associated with changes in the diet and lifestyle of cats. The increase in food consumption combined with reduced physical activity leads to the development of obesity, a factor that predisposes to UO³⁵. Thus, given the exposure, integrating epidemiological surveillance with contextual interpretation of societal events—such as pandemics—can improve clinical readiness and contribute to more effective allocation of resources in veterinary settings.

Although the primary focus of our study was the identification of the presence of UO, incomplete medical records prevented our ability to properly determine the UO aetiology in a substantial number of animals due to incomplete laboratory and imaging test results. Thus, comprehensive documentation, diagnostic workups, and standardised protocols are essential to improve the accuracy of future retrospective analyses. Further investigations could benefit from integrating machine learning approaches with time series modelling to enhance predictive accuracy and improve identification of high-risk patients.

In conclusion, our study identified a high prevalence of UO cases in male cats, with a clear increasing incidence over recent years. Among the models tested, the Holt-Winters exponential smoothing model was demonstrated to be complementary to the linear regression model. However, given the overestimation provided by the Holt-Winters model for more distant projections, linear regression proved to be the most suitable for predicting future case rates in our veterinary hospital setting for UO in male cats.

These findings offer a valuable insight into future caseload expectations and underscore the importance of long-term monitoring of UO incidence and the integration of predictive analytics in veterinary epidemiology. The persistence of elevated case numbers beyond the pandemic period suggests that lifestyle and environmental factors may have a lasting influence on UO risk, highlighting the need for targeted preventive strategies in clinical practice. Nevertheless, it enables the development and implementation of standardised clinical protocols and targeted staff training to appropriately manage the anticipated increase in admissions of male cats with UO in the coming years.

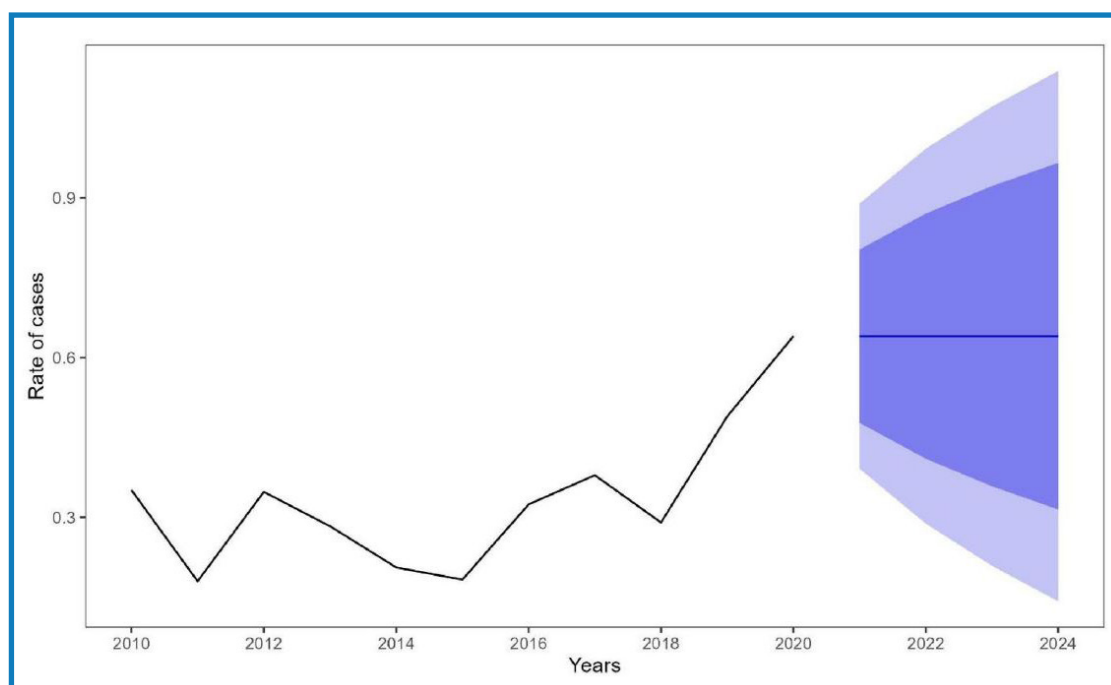


Figure 5: Case rate prediction according to ARIMA (0,1,0)

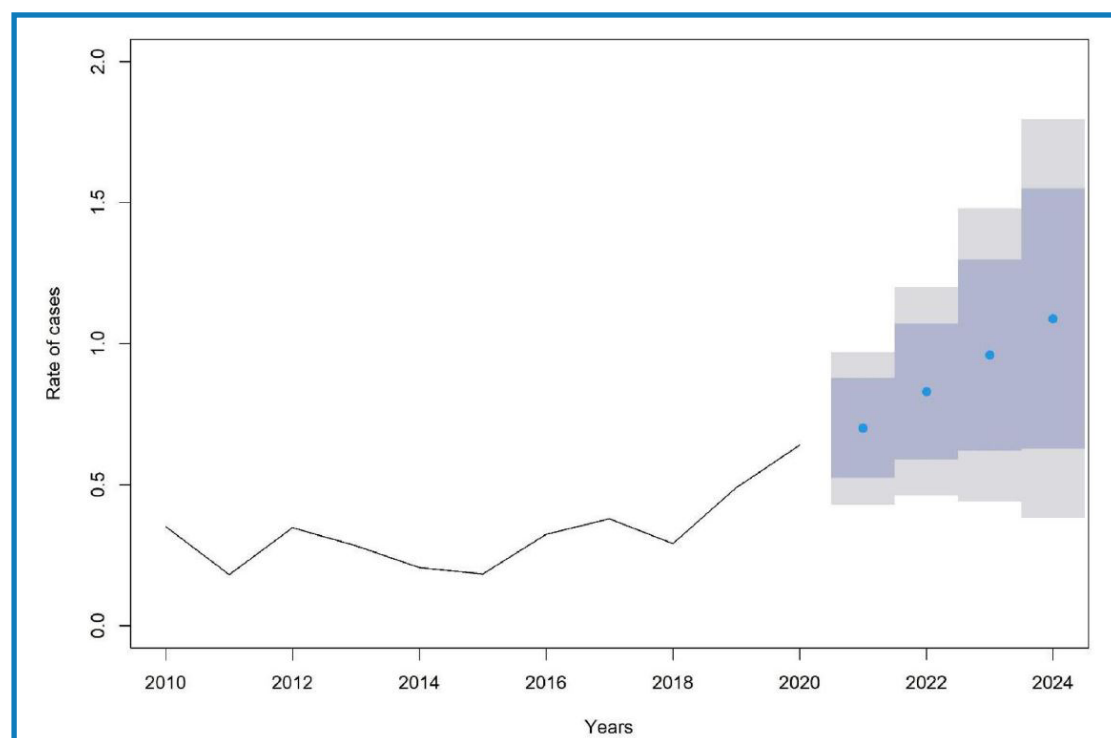
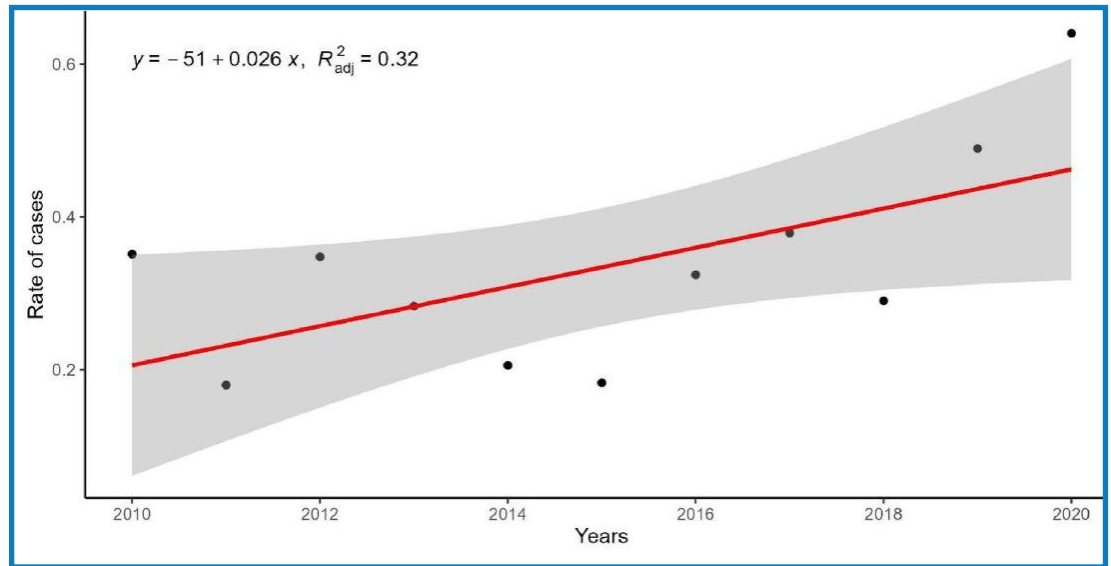


Figure 6: Case rate prediction according to the Holt-Winters model

| Line equation | R2 | p-value | p-value test for normality of residuals* |
|----------------------|------|---------|--|
| $y = 0.026x - 51.36$ | 0.38 | 0.042 | 0.798 |

Table 2: Results of linear regression with the year as the dependent variable and the case rate as the independent variable. *Shapiro-Wilk test

Figure 7: Scatterplot and linear regression for case rate of UO over time



Data availability

The datasets analysed during the current study are available from the corresponding author on reasonable request.

Received: 11 February 2025; Accepted: 16 July 2025

References available on request.

Author contributions

Conceptualisation: (RSM and PTCGO); Methodology: (RSM, HDMG, RG, AM, and PTCGO); Formal analysis and investigation: (RSM, HDMG, and PTCGO); Writing - original draft: (RSM, LGDB, and PTCGO); Writing – review and editing: (RSM, HDMG, LGDB, SRM, FBCM, DR, and PTCGO); Resources: (RSM, LGDB, MGPA, DR, AM, ASO, and PTCGO); Supervision: (PTCGO).

Additional information

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1038/s41598-025-12360-5>.

Correspondence and requests for materials should be addressed to P.T.C.G.O.

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Member Consultation Poll

Impasse on the Constitution of the South African Veterinary Council

The South African Veterinary Association (SAVA) invited all its members to provide their views on the situation involving the Minister of Agriculture and the Registrar of the South African Veterinary Council (SAVC).

This matter reached the stage where the Registrar has instituted court proceedings, seeking declaratory orders from the High Court. SAVV was cited as a Respondent in the case, with a Notice of Motion filed in terms of Rule 16A of the Uniform Rules of Court.

Although SAVV was cited as a Respondent, no relief was being sought from the Association. Instead, SAVV was included in its capacity as an interested party from whom the court may invite submissions during the course of proceedings.

What is a Declaratory Order?

In this matter involving the South African Veterinary Council (SAVC), the legal proceedings included a request for a declaratory order. A declaratory order is a court judgment that clarifies the rights, obligations, or legal status of the parties without ordering specific actions or awarding damages.

It is typically used to resolve legal uncertainty so that parties understand their positions before taking further steps. In essence, the court is being asked to pronounce on the validity or interpretation of an issue.

What is a Rule 16A Notice?

Rule 16A of the Uniform Rules of Court is the procedure by which a party notifies interested persons that a matter before the court raises a constitutional issue. It serves as a public notice, enabling potentially affected parties to apply to be admitted as a Friend of the Court.

Importantly, a Rule 16A notice does not seek relief or impose obligations on recipients. It requires no response; it exists purely for transparency and to allow interested parties to decide whether they wish to intervene or make submissions.

Context

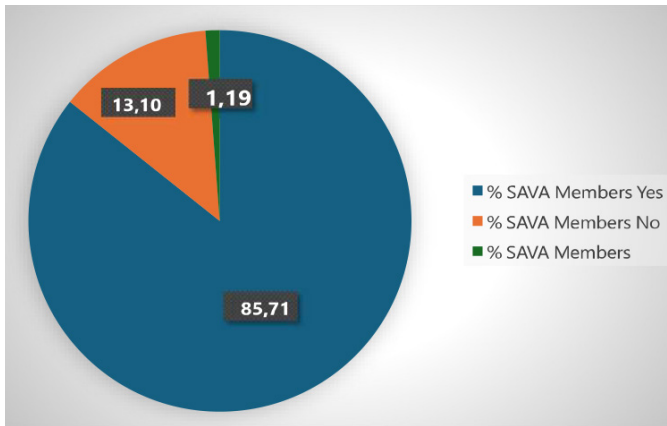
At their meetings on 26 and 27 September, respectively, the SAVV Board of Directors and Federal Council considered the ongoing impasse regarding the constitution of the South African Veterinary Council, the Notice of Motion in the legal proceedings between the Minister of Agriculture and the SAVC, as well as various communications received from members and Special Interest Groups.

The meetings resolved to conduct a poll to allow members to express their preferences regarding the matter. Several possible approaches were investigated to address the situation. These options were not mutually exclusive, and any course of action will require cooperation from the parties concerned.

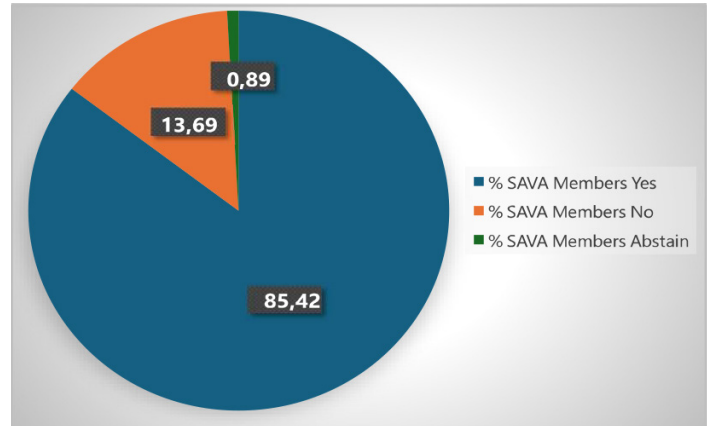
This poll was intended solely to gauge the preferences of SAVV members. While aggregated results will be shared with relevant parties where applicable, the preferences expressed by members may not necessarily determine or influence the outcome of the matter.

SAVV Member consultation Poll

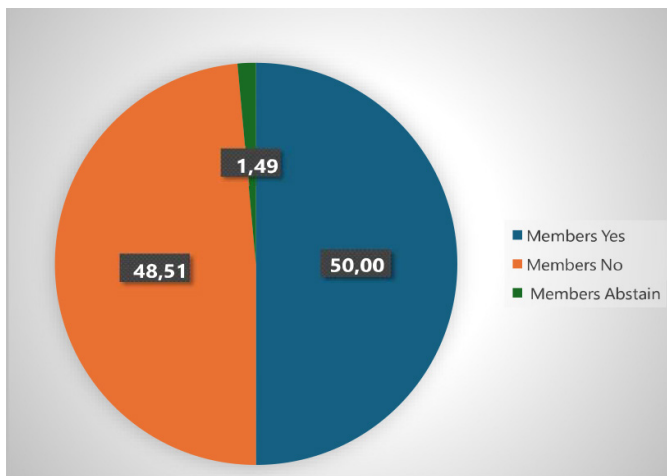
A total of 336 votes were cast, constituting 17,68% of SAVV members.



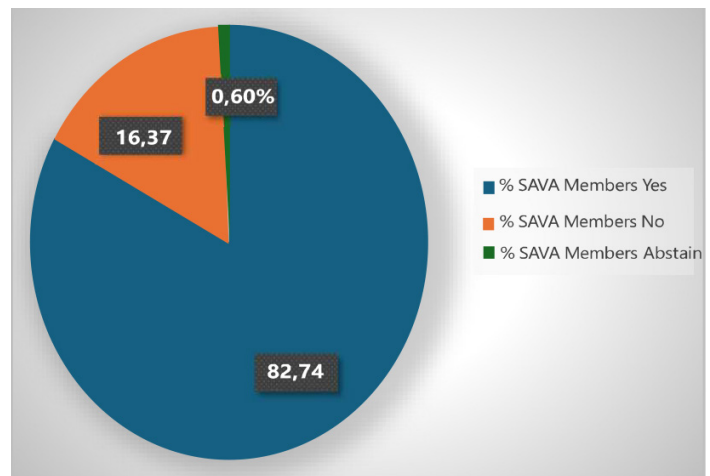
Direct Engagement with the Minister and Registrar – Continue constructive dialogue at the leadership level with both parties to seek a mutually acceptable resolution



Engagement with the Registrar – Through engagement, encourage the Registrar to rerun the veterinary section of the election process



Engagement with the Minister – Through engagement, encourage the Minister to appoint the elected Councillors



Interim Council – Explore with both parties the appointment of an interim council to handle urgent functions and oversee a new election

OUTCOME

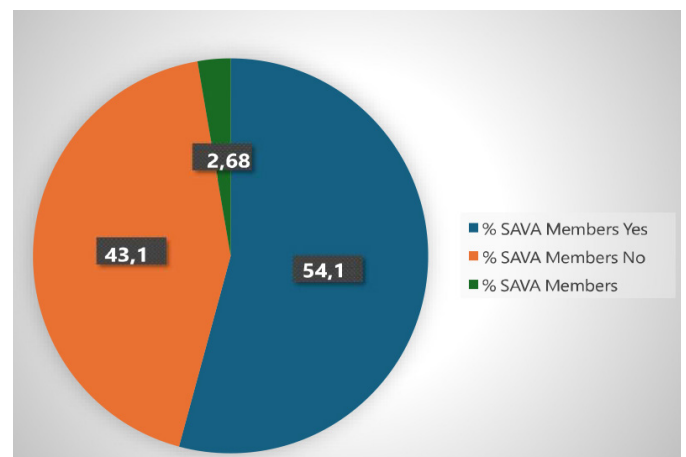
On Direct engagement, the members favoured engagement in the following manner:

- Direct Engagement with the Minister and Registrar – Continue constructive dialogue at the leadership level with both parties to seek a mutually acceptable resolution.
- Engagement with the Registrar – Through engagement, encourage the Registrar to rerun the veterinary section of the election process.

Engagement with the Minister – Through engagement, encourage the Minister to appoint the elected

Councillors - were more “contentious” with 50% of the participants favouring this outcome, while 48,51% voted no and 1,49% abstained.

Legal Proceedings – Take no additional action and allow the current legal process to run its course 54.17% of participants favoured this outcome, while 43,11 % voted in favour of action, and the rest abstained. **V**



Legal Proceedings – Take no additional action and allow the current legal process to run its course.

SAVA leadership will use these outcomes as a guideline, amongst other factors.
SAVA thanks everybody for their participation.

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Steven De Decker

DVM PhD DipECVN MvetMed PGCertVetEd FHEA MRCVS

Steven De Decker graduated from Ghent University in Belgium. After graduation, he performed a rotating internship there and undertook a PhD studying 'wobbler syndrome' in dogs. This was followed by a Residency in Neurology and Neurosurgery at the Royal Veterinary College. He is Senior Lecturer and the Head of Service of the neurology and neurosurgery team at the Royal Veterinary College. Although he is interested in all aspects of veterinary neurology, most of his research and publications focus on spinal disorders and neurosurgery.



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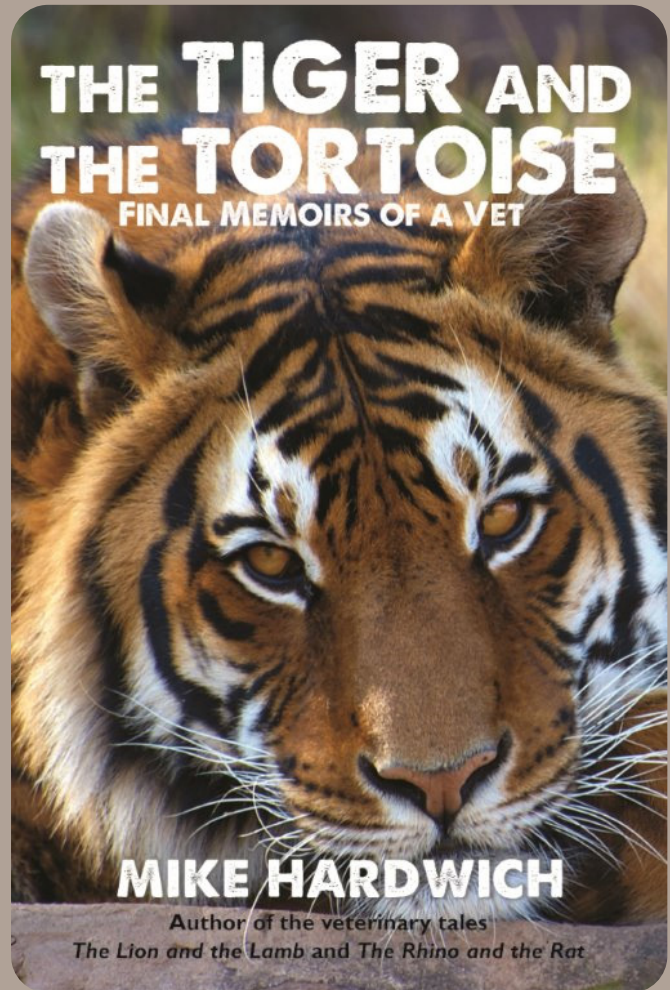
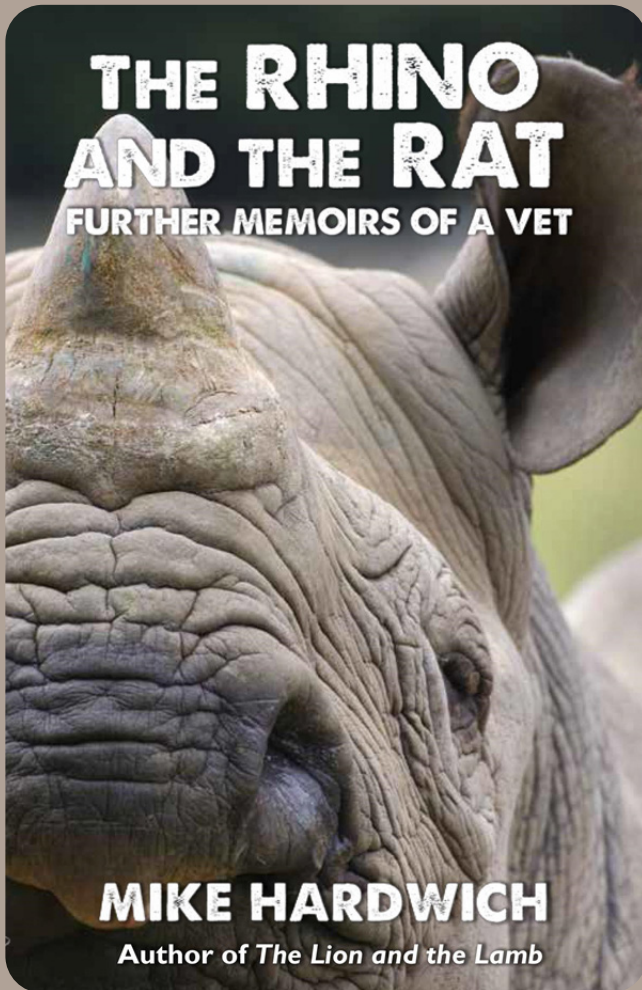
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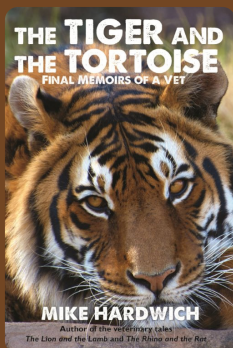
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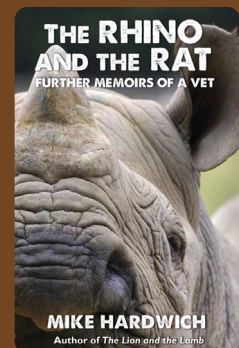
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In Memoriam

We honour and remember the contributions made by our colleagues who recently passed away.

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August 2025

CREDO



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- To honour our profession and the Veterinary Oath
- To maintain and uphold high professional and scientific standards
- To use our professional knowledge, skills and resources to protect and promote the health and welfare of animals and humans
- To further the status and image of the veterinarian and to foster and enrich veterinary science
- To promote the interests of our Association and fellowship amongst its members.

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Thank you for your continued commitment to excellence in veterinary care.
We look forward to supporting your ongoing professional development.

Dear SAVA member

Please note that Vethouse will be closed from
12:00pm on Tuesday 23 December 2025 and
will reopen on Monday, 05 January 2026.

**SAVA wishes all its members and their families
a joyful festive season and everything of the
best for the year ahead.**

Kind regards
Sonja Ludik
Interim General Manager

Geagte SAVV lid

Neem asseblief kennis dat Vethuis gesluit sal wees
vanaf 12:00pm op Dinsdag 23 Desember 2025 en
weer op Maandag, 05 Januarie 2026, sal heropen.

**Die SAVV wens alle lede en hul families 'n
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Mission

The South African Veterinary Association aims to serve its members and to further the status and image of the veterinarian. We are committed to upholding the highest professional and scientific standards, and to utilising the professional knowledge, skill and resources of our members, to foster close ties with the community and thus promote the health and welfare of animals and mankind.

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To complete the CPD articles in the VetNews magazine, go to "Members Menu". Click on the VETNEWS tab - all back issues, CPD articles and relevant quizzes are available [HERE](#). Now you can answer the questions and earn your CPD points.

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Aileen Pypers: 072 599 8737, aileen.vet@gmail.com

Willem Schultheiss: 082 323 7019, Willem.schultheiss@ceva.com

Mike Lowry: 084 581 2624, mikelowry@sai.co.za

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In Memoriam

Dr Alwyn Venter



We are deeply saddened by the passing of a remarkable veterinarian, Alwyn Venter, whose passion, energy, and kindness left an unforgettable mark on everyone who knew him.

From his student days, he was known for his bright smile, his mischievous sense of humour, and his ability to bring warmth and laughter wherever he went.

In his professional life, he carried those same qualities into his work — combining compassion, dedication, and an incredible work ethic to care for the animals and communities he served. His commitment to wildlife reflected a deep respect for life in all its forms, and his colleagues and mentors alike admired his drive and heart.

When our profession loses a veterinarian, it is like a great tree falling - the forest grows quiet, the air holding its memory.

The silence is heavy, yet life still stirs in the roots of their kindness, in every creature and person they once cared for.

His loss is felt profoundly by his family, friends, colleagues, and the broader veterinary community.

We extend our heartfelt condolences to all who loved him, and we honour his legacy of compassion and care. **V**

Dr Sherike van der Merwe

Alwyn se beginsels was vas en sy oë was gerig op Christus. Hy is een van 6 kinders gewees. Sy jongste Broer Magnus volg in sy voetspore en is tans tweede jaar veearstny student.

Hy is gebore 2 Oktober 1993.

Hy ontmoet sy vrou Leanne in hulle eerste jaar op hoofkampus en hulle is van daar af onseibaar. Die Here het hulle ryklik geseen met twee gesonde seuns Petrus (3) en Dawid (1).

Alwyn was lief vir sy gesin, familie en vriende. Hy was 'n natuur liefhebber en besondere wildsveearts. Ons sal hom altyd onthou vir sy deernis en omgee. Sy hande het vir niks verkeerd gestaan nie en hy was altyd bereid om enige iemand te help maak nie saak waar of hoe nie. Sy mense verhoudings was puik en geen klient, vriend of familielid kon anders as om van hom te hou nie. Wat jy gesien het, het jy gekry sonder enige twyfel. Hy was meer ondeund (stout is nie die regte beskrywing vir sy manewales nie) as enige mens wat jy sal ontmoet.

Ons sal hom altyd onthou. **V**

Klaas-Jan van de Wetering



Photo by Derek van der Merwe

Two recently deceased veterinarians: Dr Bartels and Dr Venter doing what they loved the most.
Photo courtesy Facebook

Dr Kati Plumstead

Although no longer in our employ at the time of her passing, Kati had been a regular member of the Mowbray Veterinary Clinic team for the last 6 years.

Over the years, she had built a loyal following of clients who really appreciated her gentle manner and endless patience. She was a good clinician with a calm manner and one who paid rigorous attention to detail. Her dedication to her patients was all-encompassing and often resulted in being available via her cell phone after hours, to her own detriment at times. Many clients have expressed their sadness at her sudden loss, and she will be missed by many for her commitment to her patients and her gentle nature.

May she rest in peace. **V**

Dr Graham Vincent



Dr John Chibase



It is with deep sadness that I remember the life of Dr Buti John Chibase, who served as a passionate Mentor in the SAVA Veterinary Mentor Programme during 2021 and 2022. Based in Klerksdorp, North West Province, Dr Chibase shared his wide experience, compassion, and strong faith with everyone who had the privilege to know him.

With 22 years of service as a veterinarian, Dr Chibase was fluent in English, Afrikaans, Sepedi, Setswana, and Sesotho, and played an important role in improving animal health and welfare in his community. His career was rich and varied, covering Primary Animal Health Care, Small Animal Clinics, Production and Equine work, and Wildlife Practice.

His skills showed great dedication and range:

- Primary Animal Health Care for communal and emerging farmers

- Small Animal Clinic Work – examination, treatment, vaccinations, castrations, sterilisations, and removal of cancers (25%)
- Production and Equine Animal Care (5%)
- Wildlife Practice (70%)
- Over 21 years as a State Veterinarian, gaining strong knowledge in animal disease control, export/import regulations, and related policies.

Dr Chibase later worked in his own practice, Neserhof Veterinary Clinic, where he continued to serve his community with care and humility. He was a proud member of both SAVA and the Black Veterinary Forum, and always made time to help and guide young professionals.

Over many years, he mentored Onderstepoort students and junior veterinarians, leaving a lasting mark on their lives.

During his time in the Mentor Programme, Dr Chibase guided CCS veterinarians placed in Mafikeng, giving both clinical and personal support. When the CCS Vets requested a Mentor closer to Mafikeng, he unfortunately wasn't appointed as a mentor again, but we always remained in contact with each other.

His mentees often spoke about how much they learned from him, especially in clinical cases and animal infections, and how kind and approachable he was.

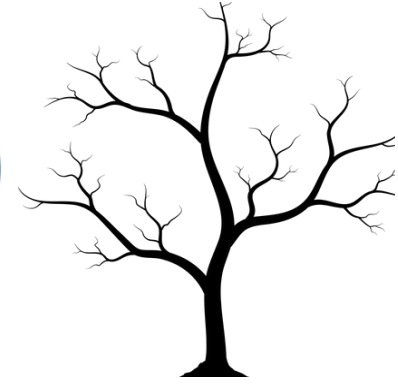
Dr Chibase was a man of strong Christian faith and often shared uplifting messages that encouraged those around him. He was deeply proud of his family — especially his daughter Portia, who achieved her Honours degree in Quantity Surveying, and his wife Queen, whom he married after the sad passing of his first wife from Covid. His mother also passed away from Covid, and he himself had survived the illness. I still remember his joyful call, telling me about the new love of his life, Queen, and how happy he was to begin a new chapter with her.

Tragically, Dr Chibase passed away in August 2025, on his way to the Free State, after being involved in a motor vehicle accident. He died on the scene. His sudden passing left a deep emptiness in the hearts of his family, colleagues, and mentees. Dr Chibase will always be remembered for his faith, kindness, and humble spirit. He was a true servant to both animals and people — a mentor who taught with heart and lived with purpose.

Our deepest sympathy goes to his wife Queen, his daughter Portia, his colleagues, and all those whose lives he touched. May his good work and example continue to live on through the veterinarians and students he guided with such care. **V**

Annalie McCallum

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Dr. Dave Miller



Dr. Rowena Watson

Dr. Dave Miller and Dr. Rowena Watson are both part of the Medical Department at the Johannesburg Specialist Veterinary Centre (JSVC), where they work alongside Dr. Adri Scholtz to provide comprehensive internal medicine services.

Dr. Dave is a specialist physician who qualified from Onderstepoort in 1992 and completed his specialization in 2003. His expertise covers a wide range of internal medicine fields, including dermatology, cardiology, oncology, urology and nephrology, musculoskeletal diseases such as arthritis, endocrine disorders, and the management of critically ill patients with infectious diseases. The department also offers endoscopy, diagnostic radiology, ultrasonography of the heart, chest, abdomen, and glands, as well as chemotherapy. MRI and CT scans are conducted at a nearby human hospital. Dr. Dave and his colleagues collaborate closely with the JSVC surgical section to deliver a complete small animal referral service, supported by a dedicated nursing and veterinary assistant team.

Dr. Rowena Watson has been in practice since 2014, gaining experience in both primary care and 24-hour referral settings. Passionate about feline medicine, she just completed her small animal medicine residency at JSVC and is in the final stages of specialising. She continues to expand her expertise in internal medicine under the mentorship of the JSVC medical team.



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MISPERCEPTIONS PART 1



I hope this article finds you and your families well and safe!!! Last month, we looked at the currencies in each of our lives. Namely, TIME, MONEY, and KNOWLEDGE. In this instalment, I would like to raise awareness about certain misperceptions that we sometimes subscribe to, mostly because it is convenient.

We all have hopes and dreams and various objectives that we want to achieve in our individual lives. One of the questions that will inevitably pop up in our minds when we are setting goals, and especially if they are big goals, is "Do I have what it takes?" Fundamentally, the very reason that you are thinking of that question is only because **you do have what it takes.**

So, what I am saying is, you have the capacity already. However, the willingness to do what it takes is entirely different. Are you willing to give up certain things to get what you want? If you say you are going to get something, then your actions need to match what you are saying. The result will not just come to us just because we have said once or twice – we need to be saying it and acting it consistently, until it is done. It must be locked in our spirit, our speech, and our actions all the way.

People tend to have this idea or mistaken belief that some of us refer to as "the fallacy of the perfect pick", which tells us that we will get this one opportunity, one shot, one podcast, one trade, that will take us all the way to our success. What is more important for us to do instead is to **keep looking for opportunities** and having multiple attempts at success, even calculated risks, **consistently over time and building towards your success.** Waiting to begin or waiting for that amazing opportunity to appear in front of us, never got anybody anywhere! Do the daily routine that will move you towards your goal! You are an adult now, nobody is making you waste time on Facebook scrolling, nobody is making you sleep too much and waste time! We must **take ownership** of our time, our lives, and our days!

Once you have identified your biggest problem in your life, what do you do about it? A lot of people feel entitled to be emotional and complain about it. Do you cry about it? Do you mope around everywhere you go about it? Do you drink about it? Do you get angry and get into fights about it? Do you just hang around and wait for it to go away? Do you take drugs about it?

We are all human, and life will knock us down repeatedly, whether we like it or not. The **difference is in our approach to the problem.** All emotions can be used constructively without us dwelling in them and falling into depression and helplessness. We need to express our emotion initially, then use it to move on towards the challenge and our goals (what else are you going to do with that emotion? You might as well let it help you on your way to achieving your goals). We are always going to **face problems** in life. Try and accomplish something hard – in the end, we will either **win or lose, but we will be better** than we were at the beginning of that journey, 100% guaranteed!

There is a moment when every one of us realises that nobody is coming to save us. **That is when we become adults,** and sadly, some people never get to that point. Change happens when the pain of staying in the same place or situation becomes greater than the pain of making a change. **Nobody is coming** to make your business better. Nobody is going to get you to be a better salesman. Nobody is coming to change your life for you. Nobody is going to get your project done. Nobody is coming to make your marriage better. **It has always been up to you!** We are either all in or all out.

We cannot just devote 40% and expect things to happen for us. We need to **be committed all the way** to what we are trying to achieve. At least then, when the result happens, we do not have to wonder whether it would have been any different if we tried harder.

There are things I have committed to wholeheartedly and in every way possible and have subsequently failed at. But I am better than I was before those experiences happened. Were those experiences difficult for me – absolutely!

Were there times when I wanted to give up during those experiences – absolutely! However, now that they are over, I do not have to wonder whether I could have done anything more to change the result. The experiences I had were lessons, and I have taken that knowledge forward and become a better version of myself for it!

*Next month, we will continue looking at more ideas for improving our quality of life and overall performance, both at work and at home. **V***

Gingival enlargement (hyperplasia) in cats

By Prof Gerhard Steenkamp and Dr Mareli van de Wetering

Gingival enlargement is clinically observed as the overgrowth of gingival tissue, covering more of the tooth surface than normal. In contrast, **gingival hyperplasia** is a histopathological diagnosis, characterised by increased fibroblast proliferation, excessive collagen deposition, reduced apoptosis in gingival fibroblasts, and altered extracellular matrix composition (Beckman).

Gingival hyperplasia is uncommon in cats but does occur. The causes and the differences between dogs and cats are summarised in **Table 1**.

| Cause | Dogs | Cats |
|---|--|--|
| Chronic inflammation / periodontal disease | Very common – long-standing plaque and calculus lead to fibroblastic gingival overgrowth. | The most common cause, chronic periodontitis/gingivitis, stimulates gingival thickening. |
| Idiopathic / breed predisposition | Well recognised – Boxers (classic), Collies, Great Danes, Dobermans, Dalmatians, Bulldogs. | Rare – reported in some breeds (e.g., Siamese), but not as strongly established as in dogs. |
| Neoplastic mimics/ differentials | Important to rule out: peripheral odontogenic fibroma, acanthomatous ameloblastoma, SCC, melanoma. | Very important – oral squamous cell carcinoma is common; also fibrosarcoma, lymphoma, and odontogenic tumours. |
| Drug-induced | Common – cyclosporine, calcium channel blockers (amlodipine, nifedipine, diltiazem), phenytoin (rare). | Rare – occasional reports with cyclosporine; little evidence for other drugs. |

Table 1. Causes of Gingival Hyperplasia in Dogs and Cats

In the past year, we received two cats with severe gingival enlargement (**Fig. 1**).



Figure 1. Clinical presentation of a cat with gingival enlargement, affecting mainly the rostral teeth (Photo credit: Dr Suzette Greubel – Greenside Animal Hospital).

On presentation, affected cats may show any of the following clinical signs:

- Halitosis
- Hypersalivation
- Discomfort or pain while chewing
- Gingival enlargement covering teeth

During oral examination, the gingiva often appears firm, lobulated, and sometimes erythematous. Owners may report reluctance to chew, dropping food, or changes in grooming behaviour.

Biopsy of a lesion should be considered if the overgrowth is asymmetrical, ulcerated, proliferative, or inconsistent with expected drug effects, in order to rule out neoplasia.

Pathogenesis of Drug-Induced Gingival Hyperplasia

The exact pathogenesis of drug-induced gingival hyperplasia in dogs and cats remains unclear. The following mechanisms have been described **in humans**:

- Anticonvulsants (Phenytoin): Some individuals may have genetically distinct fibroblasts that respond abnormally to phenytoin, leading to excessive connective tissue accumulation. Reduced collagen breakdown in the gingiva may also contribute.
- Calcium channel blockers (e.g. Amlodipine): Activation of gingival fibroblasts results in connective tissue accumulation. In addition, decreased matrix metalloproteinase (MMP) activity reduces protein degradation.
- Immunosuppressants (Cyclosporine): The primary metabolite hydroxycyclosporine, together with cyclosporine itself, stimulates fibroblast proliferation (Beaumont et al., 2017).

Drug-induced gingival hyperplasia in cats is extremely rare. Apart from single case reports in cats receiving cyclosporine (Latimer et al) and in cats treated with calcium channel blockers (Desmet et al), very little has been published. While uncommon, the condition is increasingly recognised as more geriatric cats are maintained on long-term antihypertensive medication. Hyperplasia typically develops at higher dosages of amlodipine.

Clinical Management

Drug-induced gingival hyperplasia usually resolves after discontinuation of the offending drug. In a case report by Desmet and van der Meer (2017), a cat developed gingival hyperplasia within 5 months of starting amlodipine. Due to the severity, amlodipine was substituted with telmisartan to control hypertension. The cat was gradually weaned off amlodipine, and the gingival hyperplasia resolved completely within a few months.

Treatment and monitoring recommendations include:

- Drug substitution: If feasible, switch to an alternative medication (e.g., telmisartan instead of amlodipine) when gingival hyperplasia is significant.
- Surgical intervention: Gingivectomy may be required in severe cases where drug withdrawal is not possible or resolution is delayed, to prevent progression of periodontitis.

- Dental care: Professional prophylaxis, plaque control, and diligent home care reduce secondary periodontal complications.
- Monitoring: Oral examinations should be incorporated into long-term treatment plans for cats receiving medications associated with gingival hyperplasia.

Although drug-induced gingival hyperplasia is relatively uncommon in cats, it is important to recognise the presentation, particularly in patients treated with amlodipine for systemic hypertension. Incorporating routine oral assessments into chronic disease management, together with owner education and timely therapeutic adjustments, allows early intervention and improves patient welfare. **■**

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Aileen Pypers : 072 599 8737
aileen.vet@gmail.com

Willem Schultheiss :
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Prof. Dr.med.vet. Ralf S. Mueller,
DipACVD, FANZCVSc
(Dermatology), DipECVD

Prof Katrin Hartmann

Prof. Dr. med. vet., Dr. habil.
Hartmann, Katrin, Prof., Dipl. ECVIM-
CA (Internal Medicine)

Prof Katrin Hartmann

Prof. Dr. med. vet., Dr. habil. Hartmann, Katrin, Prof., Dipl. ECVIM-CA (Internal Medicine)

Katrin Hartmann graduated from the College of Veterinary Medicine at the LMU Munich, Germany, in 1987, completed her Doctoral Thesis in 1990 and her Habilitation Thesis on antiviral treatment of feline immunodeficiency virus infection in 1995. She worked as Clinical Instructor and Assistant Professor at the Clinic of Small Animal Medicine until 2001. From 2001 to 2003, Katrin was as Associate Professor of Internal Medicine at the Department of Small Animal Medicine at the College of Veterinary Medicine, University of Georgia, Athens, USA. In 2003, she returned to Germany as Full Professor and Head of the Clinic of Small Animal Medicine at the LMU Munich, Germany. From 2009 until now, she additionally served as Director/Vice Director of the Centre for Clinical Veterinary Medicine at the LMU Munich. Katrin's major research area is infectious diseases in cats and dogs, with a special interest in feline virus infections. She is author of more than 400 research papers, in addition to proceedings, abstracts, and book chapters. She also has lectured at numerous international meetings worldwide.

Prof Ralf S Mueller

Prof. Dr.med.vet. Ralf S. Mueller, DipACVD, FANZCVSc (Dermatology), DipECVD

Prof. Ralf S. Mueller graduated in Munich/Germany, completed his doctoral thesis in 1987, and worked in several large and small animal practices before completing a residency in veterinary dermatology at the University of California/Davis in 1992. In 1992 he moved to Melbourne/Australia to work with his partner and wife Dr. Sonya Bettenay. Together, they created the first, purpose-built specialist practice in Australia. During that time, Dr. Mueller was concurrently consulting and teaching at the Veterinary Teaching Hospital/University of Sydney. Ralf and Sonya established (and continue to conduct) the Distance Education Program in Veterinary Dermatology of the Centre for Veterinary Education of the University of Sydney. In 1999, Ralf became Assistant Professor in Veterinary Dermatology at the College of Veterinary Medicine and Biomedical Sciences/Colorado State University. In 2004, he accepted a position as chief of the veterinary dermatology service at the University of Munich/Germany. His main research interests are allergies and ectoparasites. He has published over 250 studies, articles, book chapters and books and given more than twelve hundred seminars, lectures and talks all over the world.



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