

NATIONWIDE LABORATORIES AUTUMN NEWSLETTER

AT YOUR SERVICE SINCE 1983

BLOG, NEWS, CPD

NWL blog: 5 Essential Tips for Building Your Successful New Veterinary Practice

[READ MORE →](#)

The canine cancer conundrum: Insights into screening and detection by Volition Veterinary

[READ MORE →](#)

NWL blog: What to Look for When Choosing an External Laboratory

[READ MORE →](#)

Journal club with with Dr Marvin Firth BVSc (Hons.), DipRCPath, DipFMS, AFHEA, MRSB, MRCVS: Odontogenic lesions in captive non-domestic felids: a review

[READ MORE →](#)

On-demand CPD webinar: Small Mammal Pathology Through the Lens of Innovation with Sandra Dawson BSc BVMS FRCPath MRCVS

[WATCH FREE →](#)

Podcast: "From Dermatology to Digital Pathology (Dialogue Between Clinician & Pathologist)" with Trevor Whitbread BSc BVSc DipECVP MRCVS

[LISTEN FREE →](#)

Podcast: "Veterinary Pathology: Back to the Future" with Kerry Freel BVMS GPCert (SAS) FRCPath MRCVS

[LISTEN FREE →](#)



Message from David Charvill

Dear friends,

Welcome to our newsletter! This year marks the 40th anniversary of NationWide Laboratories. Throughout all this time we have been working with YOU and your PATIENTS, providing high-quality veterinary diagnostics, pathology expertise and customer support. Simply send us your samples and get prompt reports with a full interpretation and recommendations where applicable to help you reach the diagnosis quickly. Over 50% of our tests are turned round in 24 hours. We can pick up your samples overnight and return the results the following day. Our extended team of veterinary pathologists, laboratory scientists and customer excellence advisors are always available to speak to you on the phone. We work with all Buying Groups in the UK. We integrate with multiple PMS systems to support easy sample submission, including our price file, submission form and integrated results onto client files. Our online customer portal is now live. Our new website is full of useful information and our investment programme ensures that we meet the needs of a modern practice. We are looking forward to many more years at your service! Thank you for your custom.

David Charvill,
Director of Laboratory Services



Partnerships to Ensure Effortless Customer Experience



NationWide Laboratories, a proud member of the NVS Group, is excited to showcase its latest advancements and partnerships at the upcoming London Vet Show. With a focus on integration, technological innovation, and collaboration, we are striving to provide the best laboratory diagnostic solutions for vets and their patients.

This year at the London Vet Show we aim to emphasise how being part of NVS Group benefits our clients and helps to enhance their customer experience. For example, with the support of NVS Wholesale distribution network, we are running a robust courier service in eligible parts of the country to guarantee quick and secure transport of your samples to our laboratories. We are also keen to announce new ways of integration of our services with our sister company VetIT, a leading veterinary practice management software.

As a member of NVS Group we support the "New Practice Academy" initiative at the London Vet Show. For new start-ups in the veterinary industry, choosing the right partner is crucial for success. NationWide Laboratories offers unparalleled support to new practices. With our extensive experience and comprehensive range of services, we can assist new practices in establishing efficient diagnostic workflows.

In line with our commitment to embracing digital advancements, we invite you to take part in "Say What You See" competition on our stand. This competition encourages veterinary professionals to explore the possibilities of our digital pathology by using digital images. Participants will have a chance to win exciting prizes and practice their diagnostic skills in the digital age.

Another partnership we are presenting this year is our collaboration with Volition, a company known for its advanced diagnostic technology. Through this partnership, we have developed a comprehensive service package that combines the expertise of NationWide Laboratories with Volition's innovative Nu.Q® Vet Cancer Test. It is a simple, affordable, easy to use blood test for healthy, older dogs as well as younger dogs with an increased risk for developing cancer in their lifetimes, such as those with familial history and/or certain breeds. Alongside other routine blood work and imaging, this test may help find cancer at an early stage, before symptoms appear, allowing for a better chance at effective treatment. For more details, please speak to our team.

At NationWide Laboratories, we strive to update and continuously improve our services. This autumn we have introduced a new testing method for our allervet® service: PAX® Pet Allergy Xplorer Test. This method allows vets to accurately diagnose allergies in dogs, cats and horses, enabling targeted treatments and improved quality of life for their patients.

In conclusion, NationWide Laboratories, together with NVS Group, is dedicated to providing integrated, innovative, and reliable diagnostic solutions for the veterinary community. The London Vet Show is an exciting platform for us to showcase our latest partnerships, advancements, and commitment to supporting vets in delivering the highest standard of care to their patients.

Visit our stand F55 to learn more about our services take part in our engaging activities.

ABOUT NVS GROUP

NVS Group (formerly known as NVS Limited) is the UK's leader for veterinary products, software and laboratory services. NVS Group aims to support veterinary practitioners with everything needed to run an efficient practice through trustworthy delivery and unrivalled customer service. NVS Group encompasses National Veterinary Services, the market leader in veterinary wholesaling and distribution; Select from NVS, a range of veterinary consumables sold exclusively by NVS; NationWide Laboratories, a UKAS accredited diagnostic laboratory with a comprehensive portfolio of tests and profiles, world-class expertise in veterinary pathology and personal service aimed at helping practices to successfully achieve their diagnostic and therapeutic objectives; and VetIT, the high-quality practice management software solution for digital practice efficiency. NVS Group employs more than 700 people in their head office and main warehouse in Stoke-on-Trent, eleven depots across the UK, three laboratory sites in Poulton-le-Fylde, Cambridge, and Newton Abbot, and software development headquarters in Malmesbury.

For more information please visit:
www.nvsweb.co.uk/nvsgroup
<https://nwlabs.co.uk/>
<https://www.vetit.co.uk/>

LVS 30 under Thirty: congrats Ajith!

Our laboratory scientist Ajith Sureh Kumar Rekha has made it to the final of the London Vet Show 30 under 30 class 2023. This is an initiative designed to give young leaders, innovators and inspirers in the veterinary community the chance to be recognised and expand their networks by joining an exclusive cohort. Well done Ajith, we are very proud of you!





NationWide Laboratories now offers Nu.Q® Vet Cancer Screening Test in the UK

It is a simple, affordable, easy to use blood test which can be used as part of a wellness check for older dogs as well as younger dogs with an increased risk of developing cancer in their lifetimes, such as those with a familial history and certain breeds. By measuring and analysing nucleosomes in the DNA, the Nu.Q® Vet Cancer Test can identify patients who may have cancer. This must be confirmed by follow up procedures, for example, a biopsy or a scan. Alongside other routine blood work and imaging, this test may help find cancer at an early stage, before symptoms appear, allowing for a better chance at effective treatment.

UNDERSTANDING YOUR RESULTS

Green Level: <57.4 ng/ml - Cancer suspicion: Low

Plasma nucleosome concentrations ranging from 0-57.4 ng/mL are consistent with those found in healthy animals of over the age of 1 year and all genders. Not all neoplastic conditions are detectable using elevated plasma nucleosome concentrations. If clinically indicated, additional tests such as a CBC, Chemistry, Urinalysis, Cytology/ Biopsy, and/or Imaging may be needed to confirm or deny the suspicion of cancer in your patient.

Yellow level: 57.4 – 67.3 ng/ml - Cancer suspicion: Moderate

Plasma nucleosome concentrations ranging from 57.4-67.4 ng/mL can be seen in early-stage cancer or cancers with low levels of circulating nucleosomes. Elevated nucleosome concentrations have been demonstrated in a variety of common cancers including lymphoma and hemangiosarcoma. This test is not able to differentiate severe inflammation from cancer. Additional tests may be needed suspicion of cancer in your patient. If your patient is otherwise healthy, we recommend repeating the test in 2-4 weeks.

Orange level: > 600 ng/ml - Cancer Suspicion: High to Very High

Plasma nucleosome concentrations >600 ng/mL are consistent with common canine cancers including lymphoma and hemangiosarcoma. This test is not able to differentiate severe/systemic inflammation from cancer. Additional tests such as a CBC, Chemistry, Urinalysis, Cytology/Biopsy, and/or Imaging may be needed to confirm or deny the suspicion of cancer in your patient.

HOW TO TAKE YOUR SAMPLE

1. Fast the dog for at least 4 hours
2. Collect 2.5 – 5.0 mLs blood into EDTA tubes (K2 or K3 EDTA)
3. Mix well but gently 10 times
4. Centrifuge samples for 10 – 15 minutes at between 1500 and 3000 rcf at room temperature with no braking
5. Samples must be processed within 1 hour of collection
6. Whole EDTA blood can be stored at room temperature for up to an hour before centrifugation
7. Remove the plasma into a plain tube taking great care not to disturb the buffy coat layer, ideally only pipette at least 1cm above the buffy coat. Only 0.5mL of EDTA plasma is required
8. Store the separated EDTA plasma in a plastic screw top tube and store in the fridge for no longer than 3 days before sending on to the laboratory
9. Samples MUST be sent on to the laboratory on freezer packs to ensure they stay cool and arrive at the lab cool, but they must not freeze, so protect from the ice packs
10. If required, contact our Cambridge laboratory (01223 493400) who will send a courier to pick up the samples

To enquire about this service/ subscribe to it please email admin@nwlabs.co.uk



DIGITAL CASE OF THE MONTH, SEPTEMBER: Dermal canine haemangioma



2.000 mm

This is a skin mass from a 9-year-old crossbreed canine. This is a densely cellular, 7.5mm diameter, well demarcated, unencapsulated, multinodular, pedunculated mass within the dermis of haired skin. It consists of vascular spaces of various calibre, which predominantly contain erythrocytes, but also some contain fibrin or pale eosinophilic material. These spaces are bordered by plump neoplastic endothelial cells and supported by variably abundant fibrocollagenous stroma that have rare small accumulations of lymphocytes and plasma cells. The proliferating endothelial cells have oval nuclei with finely stippled chromatin and indistinct nucleoli. There is moderate eosinophilic, fibrillar cytoplasm and indistinct cell borders. There is mild anisocytosis and mild anisokaryosis with typically less than 1 mitoses per high power fields (2.37mm²). Subepithelial dermal regions contain mild to moderate lymphoplasmacytic infiltrates with increased numbers of neutrophils within the dermis of the stalk. There are clear borders of haired skin in this tissue section.

In the dog, haemangiomas are typically benign, solitary, deep dermal tumours, whereas haemangiosarcomas are often present as a disseminated malignancy involving the spleen, heart, lung, liver, soft tissues of the trunk and extremities (Cooley et al., 1997). Accurate and clear digital imaging assist pathologists in determining whether a mass is benign or malignant by being able to assess the neoplastic cell population, in this case the fine endothelial cells lining the vascular channels. In dogs, cutaneous haemangiomas are common as compared to primary canine cutaneous haemangiosarcomas. Haemangiomas occur more frequently in younger dogs. Credit: **Dr Marvin Firth BVSc (Hons.), DipRCPath, DipFMS, AFHEA, MRSB, MRCVS**

NationWide Laboratories offers SDMA assay with results available the same day. This assay has been validated against Liquid Chromatography – Mass Spectrometry method which is the Gold standard. This is an immunoturbidimetric assay and has been validated for dogs, cats and horses. Li-hep plasma or serum are suitable samples for this assay.

DIGITAL SCANNING SERVICE USING OUR 3DHISTECH PANNORAMIC P1000 RX

NationWide Laboratories is pleased to offer a high speed and high-resolution slide scanning service to professionals and organisations. We guarantee the best quality digital slide scanning solution, using the largest throughput scanner available on the market; the 3DHistech Panoramic P1000 RX scanner. Using our digital slide scanning service gives you all the advantages of digital pathology without the high-cost investment.

Benefits

- The highest resolution scanning available today - 82x water immersion
- Brightfield scanning at resolutions of 20x, 40x, including whole slide scanning
- Z stack and extended focus scanning options available too
- High throughput and quick turnaround service
- Our specialist service allows the highest quality images but without the large file sizes often associated with scanned images.
- Digitisation of slides allows for efficient sharing of images, whether that be with a colleague for preparing for publication or presentation
- Archiving and convenient storage of digital images vs onsite storage of glass allows for centralisation, control and security of your images

Service

- All you need to do is send us your glass slides and in return you will receive the high-resolution digital images either as a cloud storage link or physical hard drive
- 30-day image storage is included; extended image storage options are available
- A range of image types are available
- Low-cost and rapid turnaround service

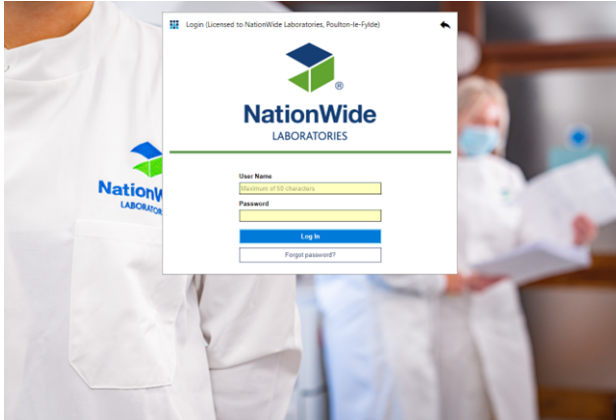
Contact

andrew.pritchett@nwlab.co.uk to discuss your project and to take advantage of the high-quality slide scanning service!

Online customer portal: It's like 1, 2, 3 - just as easy as can be

Our online customer portal which was first launched at the London Vet Show in 2022 is now up and running. The portal is designed to streamline the sample submission, tracking and result reporting process. It perfectly aligns with our commitment to delivering a greener pawprint by offering you this alternative to a paper-based system.

This platform is set to give you another additional way to interact with us, offering a faster and more convenient means of managing sample submissions, tracking their progress and obtaining results. It is a software interface that gives you complete visibility into your interactions with our laboratories. To start using the platform please contact us at CBailey@nwlabs.co.uk



Centre of Excellence for Histopathology

We provide diagnostic veterinary histopathology services to veterinary practitioners and universities throughout the UK and worldwide. Our interest does not stop at the point of diagnosis, and we are involved in research in veterinary medicine. We have contributed to publications based upon both the samples that our clients send us and also in collaboration with other veterinary centres and universities.

NationWide Specialist Laboratories

NationWide Specialist Laboratories is part of our group specialising in veterinary endocrinology. We have a wide range of knowledge, expertise and equipment and our diagnostic services are supported by access to several world-renowned veterinary clinical and laboratory endocrinologists. We use a wide range high quality technique for hormone analysis, including highly sensitive radioimmunoassays. All our systems and processes are aligned to the principles of Good Laboratory Practice and all our technicians are trained to the same standards. This involves things like making sure samples are checked very carefully, assays are always double entered into the system, so that you know that the results are absolutely spot on each time.



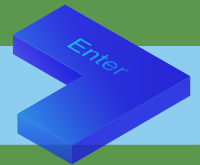
Helen Evans, Laboratory Manager at NationWide Specialist Laboratories

Happy 40th anniversary NWL!



2023 is a special year for us: we celebrate 40 years at your service. We work in partnership with our clients, helping you achieve your diagnostic and therapeutic objectives. Our multinational team of laboratory scientists, pathologists and experts are united by the love of animals and ambition to deliver excellence in veterinary diagnostics. Our investment programme ensures that we have capacity and technical capabilities to keep our services modern and relevant to you in the veterinary field. We offer a complete diagnostics package, specialist endocrinology testing, worldwide histopathology service, bespoke profiles, support for your projects and research and so much more. Being part of NVS Group allows us to arrange courier collections in eligible parts of the UK. We are always approachable and available for a phone conversation. We run a Customer Voice feedback programme to make sure you have an additional outlet for your comments and we are always grateful for your thank you messages. Thank you for your custom!

Leave us a review or an anniversary message!



NationWide Specialist Laboratories offers a service for the analysis of Erythropoetin (EPO).

EPO plays a key role in the regulation of red cell mass and erythrocyte production. EPO may be used to aid the differential diagnosis of polycythemia and non-regenerative anaemia. Raised levels of EPO occur in secondary polycythemias and renal tumours. Low/normal levels may occur in renal failure and polycythemia vera.

Sample requirement is 0.5mL separated serum. For further enquiries, please ring 01223 493400

DIGITAL CASE OF THE MONTH, OCTOBER: Cute hedgehog case



Meet Penny, a 1-year-old African Pygmy Hedgehog



FIGURE 1. Gross enlargement of the uterine body observed by Dr Madonna Livingstone during ovariectomy

A 1-year-old African Pygmy hedgehog was presented to our exotics consultant, Madonna Livingstone for ovariectomy due to a bloody vaginal discharge. However, during surgery, the uterus was grossly thickened, and the internal vagina was filled with blood. Dr Livingstone sent the uterus and ovaries to the pathology team at Nationwide Laboratories where Dr Marvin Firth (anatomic pathologist) examined the sections digitally. The ovaries showed occasional primary and secondary follicles, but most of the tissue was effaced by nests and islands of neoplastic cells that were often arranged in pseudorosettes and had classic, Call-Exner bodies within them which multifocally infiltrated adjacent ovarian tissue. The cellular morphology and architecture, along with these bodies led to a diagnosis of bilateral granulosa cell tumours (GCTs). The sections of the uterus showed proliferation of the endometrial mucosa with cystic degeneration and hyperplasia of endometrial glands, occasionally forming papillary projections into the uterine lumen. Glandular structures also extended down into the muscle layers (adenomyosis). Within these layers there was also noticeable inflammation. We believe that the GCTs have led to endometrial cystic degeneration and hyperplasia with the adenomyosis and endometritis (inflammation) through production of higher levels of oestrogen. This pattern of pathology is often seen in dogs with GCTs and associated uterine changes as seen with this hedgehog. More recently, Wu et al (2021) published GCTs in 8 African Pygmy hedgehogs, which again showed the similar uterine changes observed in this case.

Credit: **Dr Marvin Firth BVSc (Hons.), DipRCPath, DipFMS, AFHEA, MRSB, MRCVS, Dr Madonna Livingstone BVMS, MRCVS**

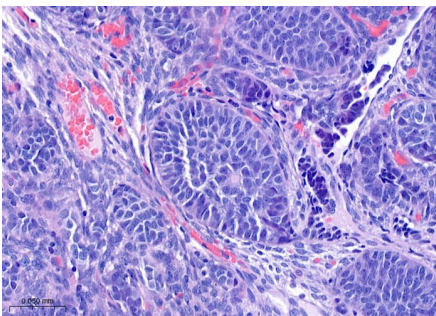


FIGURE 2: Ovary, H&E: Granulosa cell tumour (GCT) exhibiting pseudorosettes of neoplastic cells with the typical Call-Exner body, a histological characteristic in GCTs in some species

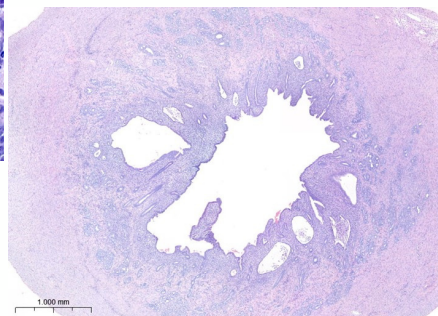


FIGURE 3: Uterus, H&E: Endometrial cystic degeneration and hyperplasia with adenomyosis and endometritis thought to have been induced by the hyperoestrogenism/ hormonal effect of bilateral GCTs

References: Wu CC, Nakata M, Chambers JK, Uchida K, Sasaki N, Miwa Y. Granulosa cell tumor in 8 African pygmy hedgehogs (*Atelerix albiventris*). *J Vet Med Sci.* 2021 Apr 9;83(4):685-688. doi: 10.1292/jvms.20-0521. Epub 2021 Feb 17. PMID: 33597318; PMCID: PMC8111359.

SAME DAY PTH

NationWide Specialist Laboratories is offering a SAME DAY service for the analysis of canine, feline and equine parathyroid hormone (PTH). Parathyroid hormone-related protein (or PTHrP) is assayed once a week on Wednesday with results available on Thursday. If you want our RAPID PTH service as well as PTHrP, please submit 2 separate frozen EDTA Plasma samples. PTHrP will continue to be analysed once a week. **For more details, please contact us at 01223 493400.**

GERIATRIC PET PROFILES

Comprehensive testing is recommended for senior dogs and cats, due to the higher risk of underlying disease. There are four main categories of wellness testing for senior pets: **complete blood count, biochemistry profile, urinalysis, and thyroid hormone testing.** Our canine and feline geriatric profiles include a chemistry panel to **evaluate kidney and liver function, antibody and protein levels, blood sugar, cholesterol, electrolytes and more.** For more information, contact us at info@nwlabs.co.uk.

HYDROTHERAPY POOL WATER TESTING

We all know that hydrotherapy in conjunction with veterinary treatment can assist in improving the rate of recovery and healing of animals after injury or surgery. At Nationwide Laboratories we can assist you in demonstrating to your clients that your facility meets the guidelines for water safety and quality through our hydro pool testing service, which meets the requirements of hydrotherapy associations such as CHA and NARCH.

We will provide you with the sample bottle, guidance on how to take the sample and prepaid postage to get the sample to us. You will receive a report of printed enumerated results for total viable count at 37 degrees itemising *total coliforms, E. coli, Pseudomonas aeruginosa* and guidance for interpretation. **Simply call 01253 899215 or email info@nwlabs.co.uk for more information.**

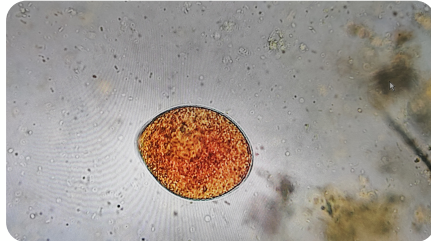
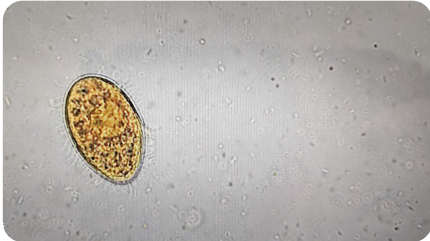
Parasitology insights with Jana Leontescu

Veterinary Parasitology is the study of animal parasites, especially relationships between parasites and animal hosts. Parasites of domestic animals, (livestock and pet animals), as well as wildlife animals are considered.

Using a variety of research methods, they diagnose, treat, and prevent animal parasitoses (Deplazes, et al. 2016).

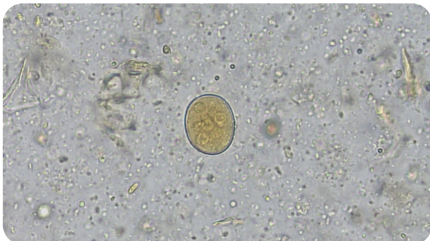


Balantidium sp. cyst and trophozoite in a dog



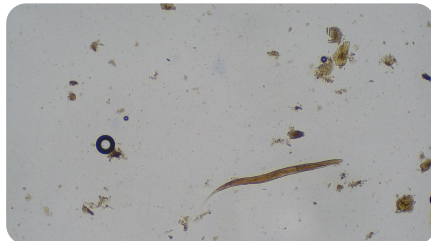
Balantidium coli, is natural inhabitant of digestive tract of mammals and widespread in swine. The vegetative forms may produce acute or chronic enteritis in human, monkeys and pigs. Alongside with well known *Balantidium coli*, there are more than 80 species described so far. In dogs *Balantidium* infection is rare and is frequently associated with exposure to swine. Trophozoites reside in the colon and result in ulcerative colitis. Size gauge in the pictures: *Balantidium sp.* dog trophozoite 40/25 um, cyst about 55/37 um. Sample: direct iodine stained faecal smear.

Entamoeba sp. cyst found in a sloth



Entamoeba is a genus that contain diverse protists found in human, nun-human primates and other animals. Some species of *Entamoeba* are pathogenic but the majority of them are non-pathogenic. One of the important species is *Entamoeba histolytica* which is an important zoonotic pathogen and according to WHO in 1997 were about 50 million of human cases of haemorrhagic gastroenteritis and about 100,000 deaths annually due to this pathogen. Size gauge in the picture: *Entamoeba sp.* in a sloth, cyst size 28/18 um. Sample: direct iodine stained faecal smear.

Strongyloides sp. larvae from a non-human primate



Strongyloides spp. are obligate gastrointestinal nematodes that are relatively host specific, but transmission between species can occur. It is estimated that between 30-100 million people are infected by *Strongyloides spp.* worldwide. Size gauge in the picture: *Strongyloides sp.* larva 250/10 um. Sample: direct iodine stained faecal smear.

References: Heinz Mehlhorn, Encyclopaedia of parasitology 4 ed. 2016. Springer, pp 295. Regan CS, Yon L, Hossain M, Elsheikha HM. Prevalence of *Entamoeba* species in captive primates in zoological gardens in the UK. Peer J. 2014;2:e492. Published 2014 Jul 29. doi:10.7717/peerj.492
Bethony J., Brooker S., Albonico M., Geiger S.M., Loukas A., Diemert D.J., Hotez P.J. Soil-transmitted helminth infections: Ascariasis, trichuriasis, and hookworm. Lancet. 2006;367:1521-1532. doi: 10.1016/S0140-6736(06)68653-4

ONLINE LEARNING

Interactive hub in partnership with The Webinar Vet: Enjoy bitesize pieces of valuable content coming in various formats to make your learning easy and engaging. Watch. Read. Listen. Communicate. We are open 24/7 all year round and accessible from the comfort of your home.

NEW LOOK AND NEW FEATURES:

- Fill in a short survey and get a chance to win an unlimited membership from the Webinar Vet;
- Challenge your Knowledge interactive quiz with prizes to be won!

[CLICK HERE](#)

Labfacts - now on Wikivet: Laboratory diagnostic reference guide written by NationWide Laboratories pathology team and aimed at helping you investigate diseases in small animals and horses.

[CLICK HERE](#)

Multimedia hub in partnership with Improve Veterinary Practice: Articles and podcasts by NationWide Laboratories pathologists. Advice on sample collection. Ask your laboratory expert series. Case studies and videos. Engaging and accessible content available 24/7 from any connected device.

[CLICK HERE](#)

HOW CLEAN IS YOUR PRACTICE?

We offer you a microbiological screening programme to screen your facilities and equipment. Swabs are supplied with simple instructions and a postage paid envelope for return to our laboratory for testing. We test for aerobic and anaerobic cultures as well as specific cultures for yeast and fungi. This comprehensive testing includes (but is not limited to) cultures for the following major groups of organisms:

Enterobacteriaceae, *Enterococci*/
Streptococci, *Pseudomonadaceae*,
Staphylococci (Meticillin resistant/
sensitive) as well as spore forming bacteria such as *Bacillus* and *Clostridium spp.* For more information, contact us at info@nwlab.co.uk.