UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
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MEDIA RELEASE

UP Faculty of Veterinary Science's new test for deafness in dogs

PRETORIA – The University of Pretoria's Onderstepoort Veterinary Academic Hospital (OVAH) in the Faculty of Veterinary Science has invested in the latest device to test deafness in dogs. It is currently testing 20-30 dogs per month, most of which are puppies.

"It's important for dog breeders and people getting a puppy to make sure that there is no congenital deafness in the line, particularly in breeds that are more susceptible to it," says OVAH's Dr Paolo Pazzi. "Other reasons for testing include owners who are concerned that the dog they have adopted is deaf, or if their elderly dog has become deaf."

Congenital deafness means that a dog is born deaf; it cannot be cured and there are no implants or operations available in veterinary science to enable dogs to hear. "If, however, the deafness is related to otitis externa (inflammation of the external ear canal, also called "swimmer's ear" in humans), the deafness should resolve, if treated early enough and appropriately," Dr Pazzi explains.

Fortunately, Dr Pazzi says that there is a reliable way to test for deafness, called a *Brainstem Auditory Evoked Response (BAER)* test. The new device being used at OVAH to do this test is the American-manufactured UFI BAERCOM™, which quickly and painlessly assesses the dog's level of hearing or deafness.

"We had an older, larger, clumsy device prior to this one as we have been doing deafness testing for some time, but it had become unreliable to the point that we could not do any BAER tests for about two years," says Dr Pazzi.

The BAER test detects electrical activity in the cochlea and auditory pathways in the brain in much the same way that an antenna detects TV signals. The test is painless, and the pup or dog is usually lightly sedated as movement interferes with the results.

Small electrodes are positioned on the animal's head and connected to the device which reads and interprets the brain's response to a specific clicking noise generated by it. Each ear is tested individually as the dog may only be deaf in one ear. If they can hear in the ear, the machine's screen will show a recording of 'waves' of varying sizes and depths, but if they are deaf then the screen shows a recording of almost flat lines. Once both ears have been tested, the sedation is reversed, and a copy of the results are shared with the owner.

"Deafness in the dog – and cat – population is low overall, but responsible breeders of predisposed breeds should ensure their puppies can hear and that deafness is not carried in their breeding lines," says Dr Pazzi.

Congenital deafness has been described in over 80 breeds, but is most commonly diagnosed in Dalmatians, Bull Terriers, Australian Cattle Dogs, English Setters, English Cocker Spaniels and Boston Terriers. There is an association between deafness and pigmentation with white dogs being predisposed and even more so if they are white with blue eyes.

Dogs with congenital deafness can be trained just like a hearing dog (using hand signals instead of speaking) and there are trainers who can assist with this. Many deaf dogs cope very well with hand signals.

If you are concerned about a pup, litter or adult dog and would like to test for deafness, you are welcome to contact the Onderstepoort Veterinary Academic Hospital Small Animal Medicine clinic on 012 529 8302 or email referralsam@up.ac.za for more information.

Captions:

1. The BAER machine which tests for deafness

2. The BAER machine with the red, yellow and black electrodes that clip onto the skin of a patient during the test. The electrodes detect the neural activity as clicks are delivered through the black earpiece that is placed in the ear being tested.

3. The BAER machine being used on a sedated adult dog.

Media enquiries:

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ABOUT THE UNIVERSITY OF PRETORIA

The University of Pretoria (UP) is one of the largest contact and residential universities in South Africa, with its administration offices located on the Hatfield Campus, Pretoria. This 113-year-old institution is also the largest producer of research in South Africa.

Spread over seven campuses, it has nine faculties and a business school, the Gordon Institute of Business Science (GIBS). It is the only university in the country that has a Faculty of Veterinary Science which is ranked top in Africa, and overall has 120 academic departments, as well as 92 centres and institutes, accommodating more than 55 000 students and offering about 1 100 study programmes.

UP is one of the top five universities in South Africa, according to the 2019-2020 rankings by the Center for World University Rankings. It is also ranked among the top 100 universities worldwide in three fields of study (veterinary science, theology and law), and among the top 1% in eight fields of study (agricultural sciences, clinical medicine, engineering, environment/ecology, immunology, microbiology, plant and animal sciences and social sciences).

In May 2020, the annual UK Financial Times Executive Education Rankings once again ranked GIBS as the top South African and African business school. The University also has an extensive community engagement programme with approximately 33 000 students involved in community upliftment. Furthermore, UP is building considerable capacities and strengths for the Fourth Industrial Revolution by preparing students for the world beyond university and offering work-readiness and entrepreneurship training to its students.

As one of South Africa's research-intensive universities, UP launched the Future Africa Campus in March 2019 as a hub for inter- and transdisciplinary research networks within UP and the global research community to maximise 4IR innovation and address the challenges and stresses our continent and world is facing. In addition UP also launched the Javett Art Centre in September 2019 as a driver of transdisciplinary research development between the Humanities and other faculties. In November 2020 UP launched Engineering 4.0. as a hub not only for Smart Cities and Transport, but also to link the vast resources in technology and data sciences to other faculties via Future Africa. These initiatives are stimulating new thinking at the frontier of 'science for transformation'.

For more information, go to www.up.ac.za