



K9MD Press Release

What is canine medical detection?

Cancer is a serious threat to the health and well-being of all New Zealanders and canine medical detection dogs can make a difference. Medical detection dogs are trained to identify the volatile organic compounds (VOC) which are released from tumours present in medical conditions such as cancer. Each cancer has its own unique signature odour. K9 Medical Detection NZ dogs undertake rigorous training at purpose designed facilities where all training is recorded with a specialised computer programme and analysed by a biostatistician. All training sessions are also video recorded and peer reviewed by an international canine scent detection expert.

Cancer in New Zealand, how big is the problem?

New Zealand has one of the highest rates of cancer in the world. Every single day more than 60 New Zealanders are diagnosed with cancer and every hour one New Zealander dies from cancer. While there are screening and monitoring tools available for some forms of cancer, other types of cancers are lacking adequate tools for early diagnosis and prognostic testing.

Early detection of cancers can enhance the success of treatment and the cure rate.

How did K9MD begin?

Pauline Blomfield (Founder and Director) established The K9 Medical Detection New Zealand Charitable Trust in 2018. After two years of international research and discussions with scientists and medical professionals The University of Otago became the official research partner to K9MD. Specialised stainless-steel equipment for training was designed, premises including two laboratories for the safe storage and preparation of samples, were established at the AgResearch Invermay campus in Dunedin.

What is K9MD working on now?

November 2020 K9MD has two dogs, German shepherds Levi and Weta training for the early non-invasive detection of bowel cancer in urine. Golden Retriever Magic and another German shepherd, Freida, are currently training for the early non-invasive detection of prostate cancer in urine.



What's the science in all this?

Cancers detected at an early stage are more likely to be treated successfully and starting the treatment while the cancer is small and confined greatly improves the survival rate. While we have sophisticated lab diagnostic tests for many cancers, some cancers a) have no screening b) are difficult to detect and c) get diagnosed at extensive disease.

An alternative to currently used molecular and physical screening techniques, is the use of medical detection dogs to identify volatile organic compounds (VOC) released from tumours. While it is still unclear what exact markers dogs identify, it has now been established that changes in the cell's metabolism due to a variety of disease leads to the release of VOC that are distinct from VOC released by healthy cells.

A dog's sense of smell can detect stable concentration thresholds of 1-2 parts per trillion, which is comparable to detecting one teaspoon of sugar in two Olympic sized swimming pools of water. Apart from dogs having more scent receptors in their nose (300 million compared to 5 million in humans), the olfactory bulb within a dog's brain is 40 times larger than a humans so can analyse scent and distinguish many more compounds. Dogs are routinely trained and used to detect explosives, food, drugs, track missing persons and predict medical conditions, such as changes in blood sugar levels in diabetics.

The first scientific publication on a dog detecting a disease was reported in 1989 by Williams and colleagues. This and further anecdotal and published case reports prompted investigations into establishing what odour the dogs can smell as well as setting up diagnostic studies to determine the accuracy and clinical potential of dogs detecting diseases.

K9MD has recently shown that they can train medical detection dogs to positively identify samples containing colorectal cancer and prostate cancer at various concentration ratios.

How can you help?

K9 Medical Detection New Zealand Charitable Trust is working hard to save lives. Cancer affects so many people and early detection can make the difference. Please give generously to help train more cancer detecting dogs. Their training is rigorous and only the best dogs are selected from proven working-lines with prodigious lineages. Please donate and help us make us difference.