

Disease Detection Dogs: "Breath Testing Program"

Our founder, Janice Wolfe and Merlin's Kids is excited to partner with the International Fire Fighter Cancer Foundation in cutting-edge research, innovative solutions, and international travel to save countless lives through sample and real-time disease detection.

Cancer cells emit different metabolic waste products other than normal cells. Their presence in cancer patients' exhaled breath, blood, or urine is so great that they can be detected by a dog's keen sense of smell, even in the early stages of disease.

We are exploring the use of early detection technology and methods to increase the proficiency of cancer and occupational disease identification. We are collecting "breath samples" for research in early cancer detection and developing companion programs to offer improved "cancer prevention" screening and lifestyle options.

It is important to understand that if you receive notification of a positive cancer dog scent detection, your results may be affected by health issues other than cancer. This is why we continue to proceed with research into methods to screen for both inflammatory diseases and cancer. There is also the possibility that regionally-based disease trends (example: Lyme disease - treated or untreated) may affect scent detection results. Those receiving notification of a positive detection will be given the option of proceeding with medical screening through their personal physicians and a "focus group" occupational medicine program. We are also working with fire department and labor representatives to ensure that participants of our research program are afforded every opportunity for responder appropriate medical screening.

Learn more at www.FFCancer.org (Research) or www.merlinskids.org

Questions & Answers:

Q. Who is eligible to participate in the research study?

A. All members of fire and emergency medical services and their families

Q. What is the cost to participate in the program?

A. A donation is accepted to offset materials, shipping charges, administrative costs.

Q. Which cancers are being tested?

A. All cancers (skin cancer to the most common and aggressive).

Q. Can I be tested if I have a confirmed cancer and are receiving treatment?

A. Yes. Please advise testing proctor of cancer status (testing efficiency may be altered by cancer treatment)

Q. What if I have a "detection" from my breath sample?

A. Each participant is contacted and a 2nd screening is completed.

Q. Is there a chance of a false negative or false positive?

A. Yes. Research continues into the influence of inflammatory diseases, medication use, recent surgery, or injury on the body's bio markers that affect odors transmitted through the breath.

Q. What should I do if a 2nd breath sample is positive?

A. You will be contacted by the IFCF, assigned an advocate, and offered a variety of assistance options for follow-up.

Q. What types of assistance are available?

A. Referral to firefighter cancer screening hospital centers, participation in focus groups, and access to IFCF resources.

Q. Is my information confidential?

A. Yes. Public reporting will consist of trending by age range, sex, responder or family, and region of testing.

Published Research Articles: (Updates pending)

Colorectal Cancer Screening with Odor Material by Canine Scent Detection Gut

published online; Publication Date: 31 January 2011

<http://gut.bmj.com/content/early/2011/01/17/gut.2010.218305.full>

A Labrador retriever was trained to detect colorectal cancer from exhaled breath samples and watery stool samples. The dog's sensitivity using exhaled breath samples compared with conventional diagnosis by colonoscopy was 91% and the specificity was 99%. The sensitivity using stool samples was 97% and the specificity was 99%.

Characteristic Odor in the Blood Reveals Ovarian Carcinoma

Published in BioMed Central; Publication Date: 24 November 2010

<http://www.biomedcentral.com/1471-2407/10/643>

Two dogs were specially trained to detect ovarian cancer tissues and blood from patients with ovarian carcinoma. The tissue tests showed sensitivity of 100% and specificity of 95%, while the blood tests showed sensitivity of 100% and specificity of 98%.

Olfactory Detection of Prostate Cancer by Dogs Sniffing Urine: A Step Forward in Early Diagnosis

Published online in European Urology; Publication Date: 15 October 2010

[http://www.europeanurology.com/article/S0302-2838\(10\)00944-9/fulltext](http://www.europeanurology.com/article/S0302-2838(10)00944-9/fulltext)

A Belgian Malinois shepherd was trained to detect prostate cancer from urine samples. The sensitivity and specificity were both 91%. In addition, the dog detected prostate cancer in one of the "healthy" control subjects who had been previously cleared by a biopsy.

Diagnostic Accuracy of Canine Scent Detection in Early- and Late-Stage Lung and Breast Cancers

Published in Integrative Cancer Therapies

Publication Date: March 2006

<http://ict.sagepub.com/content/5/1/30.full.pdf+html>

Five dogs were trained to detect Breast and lung from exhaled breath samples. Compared to biopsy-confirmed conventional diagnosis, the dogs overall sensitivity and specificity for lung cancer was 99%. For Breast cancer their overall sensitivity was 88% and their specificity was 98%. In addition, the dogs repeatedly alerted to a "healthy" control sample who was diagnosed with breast cancer 18 months later.

Olfactory Detection of Human Bladder Cancer by Dogs: Proof of Principle Study

Published in BMJ

Publication Date: 14 July 2004

<http://www.bmj.com/content/329/7468/712.full.pdf>

Six dogs were trained to detect bladder cancer from urine samples. Their mean success rate was 41%, compared with 14% expected by chance alone.

Canine scent detection in the diagnosis of lung cancer: Revisiting a puzzling phenomenon

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