# The diagnosis nose

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**KDog: A project aiming at detecting breast cancer thanks to olfactive signature of the tumour**

The KDOG project has been developed by Isabelle Fromentin, nurse, and Doctor of Science. It was simply aimed at detecting breast cancer thanks to a specific smell stemming from the tumours.

KDOG is composed of two sub-projects:

The evaluation of the capacity of trained dogs to detect breast cancer from patients' samples of sweat.

The search for the olfactive signature of tumours through the analysis of molecules of the smell.

**A conclusive proof of concept allied with the need to monitor the key variables of the clinical study.**

The proof of concept from the first sub-project has been conclusive. In 90% of the cases, trained dogs identified the compresses that had been in contact with women with breast cancer. Some obstacles were still hindering the reliability of the dog's diagnosis: sometimes, the dog was not willing to collaborate, or other smells led it to false tracks.

The chemical signature of breast cancer is very complex to assess given the many factors influencing human smells. This contributes to a blurring of the lines of analysis.

This clinical study led to interesting, albeit not satisfactory, results from a scientific standpoint. Researchers concluded that their results would be more significant if further studies were to be conducted on two key variables. Firstly, the selection of the dog: this is key since they have different olfactive and concentration capacities as well as diverse ability and willingness to work. Secondly, the materials used: these would be necessary to clearly identify the absorbing and desorbing materials to perform the test. Once these key variables were under control, the clinical study could be conducted again.

**A scalable diagnostic method**

Following the clinical study and should the efficacy be proven, KDOG could increase screening capacities particularly for disadvantaged populations with little access to care. It could also be possible, in the longer term, to conceive an electronic technology for screening based on the olfactive signature of breast cancer.