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Electronic Nose Detects Cancer

György Horvath from the University of Gothenburg, Sweden, and researchers from the University of Gävle and KTH Royal Institute of Technology have been able to confirm in tests that ovarian cancer tissue and healthy tissue smell different. The results were published recently in the journal Future Oncology.

In a previous project György Horvath used specially trained dogs to demonstrate that ovarian cancers emit a specific scent. The dogs were able to use this scent to distinguish between ovarian cancer tissue and both normal healthy abdominal tissue and other gynaecological cancers. The discovery that the blood of patients with ovarian cancer also has this same specific scent was published in the journal BMC Cancer.

Together with professor Thomas Lindblad from KTH and researcher Jose Chilo from Gävle University, Horvath has worked on detecting this scent using an existing electronic nose at KTH.

"We've managed to detect and register the scent from a form of ovarian cancer, and the scent from a healthy Fallopian tube and healthy womb muscle," says Horvath.

"This technical confirmation of a cancer scent will have major practical implications -- a sufficiently sensitive and specific method could save hundreds of lives a year in Sweden alone."

A more sensitive electronic scent detector that was recently tested. The basic structure is the same as with existing electronic noses, but they have added several new components to increase its sensitivity.

"Our goal is to be able to screen blood samples from apparently healthy women and so detect ovarian cancer at an early stage when it can still be cured," says Horvath.

György Horvath, José Chilo, Thomas Lindblad. Different volatile signals emitted by human ovarian carcinoma and healthy tissue. *Future Oncology*, 2010; 6 (6): 1043 DOI: 10.2217/fon.10.60