

Researchers identify method to overcome false positives in CT imaging for lung cancer

May 15 2018, by Joe Dangor

A team of researchers including investigators from Mayo Clinic has identified a technology to address the problem of false positives in CT-based lung cancer screening. The team's findings are published in the current issue of *PLOS One*.

"As physicians, one of the most challenging problems in screening patients for [lung cancer](#) is that the vast majority of the detected pulmonary nodules are not [cancer](#)," says Tobias Peikert, M.D., a pulmonologist at Mayo Clinic. "Even in individuals who are at high risk for lung cancer, up to 96 percent of nodules are not cancer."

Dr. Peikert says false-positive test results cause significant patient anxiety and often lead to unnecessary additional testing, including surgery. "False-positive lung cancer screening results also increase health care costs and may lead to unintentional physician-caused injury and mortality," Dr. Peikert says.

To address the problem of [false positives](#) in [lung cancer screening](#) Dr. Peikert and Fabien Maldonado, M.D., from Vanderbilt University, along with their collaborators used a radiomics approach to analyze the CT images of all lung cancers diagnosed as part of the National Lung Cancer Screening Trial. Radiomics is a field of medicine that involves extracting large amounts of quantitative data from medical images and using computer programs to identify disease characteristics that cannot be seen by the naked eye.

Researchers tested a set of 57 variables for volume, nodule density, shape, nodule surface characteristics and texture of the surrounding [lung tissue](#). They identified eight variables which enabled them to distinguish a benign nodule from a cancerous nodule. None of the eight variables were directly linked to nodule size and the researchers did not include any demographic variables such as age, smoking status and prior cancer history as part of their testing.

Dr. Peikert says that while the technology looks very promising and has the potential to change the way physicians evaluate incidentally detected lung nodules, it still requires additional validation.

Provided by Mayo Clinic

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