

New diagnostic imaging for lung cancer could prevent unnecessary surgery

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A new type of diagnostic imaging - which can better differentiate benign lung lesions from those which are cancerous - could be used to prevent unnecessary surgery by enabling more accurate diagnosis of the disease.

A study by Belgian researchers, which will be presented today (25 September 2011) at the European Respiratory Society's Annual Congress in Amsterdam, found that the new technique can more accurately determine whether people have the disease when compared with the current method of PET-CT scans.

PET-CT scans are currently used by a doctor to determine what stage the cancer is at and whether the detected [lung](#) lesions are cancerous. This test involves a CT scan taking pictures from around your body and a [PET scan](#) which uses a small amount of an injected radioactive drug to show uptake within structures in your body.

Whilst this is the current gold-standard for treatment, this new research has shown that a type of MRI scan, known as diffusion-weighted MRI, is more accurate. This technique measures water movement in the tissue of the lungs and can detect the structural changes that [lung cancer](#) causes, even in the early stages of the disease.

The new technique also has the advantage of being non-invasive and does not require any [radiation exposure](#).

The research analysed 50 people who were due to be operated on and

had been diagnosed with lung cancer or suspected lung cancer assessed by PET-CT scan. One day before their operation, the same group also underwent a diffusion-weighted MRI scan.

The results showed that with PET-CT scans, 33 patients were diagnosed correctly, 7 incorrectly and 10 were undetermined. With diffusion-weighted MRI scans, 45 patients were diagnosed correctly and 5 incorrectly. The 10 undetermined cases with PET-CT were correctly diagnosed using diffusion-weighted MRI scan.

Dr Johan Coolen, from University Hospitals Leuven in Belgium, said: "Our study has shown that diffusion-weighted MRI scans could become an appropriate diagnostic instrument for preoperative lung cancer patients in the near future because they have a high accuracy for differentiating benign from malignant lung lesions.

"PET/CT scans can wrongly diagnose cancer as they can misinterpret inflammation in the lungs as a malignant lesion. Especially in these inflammatory lesions, diffusion weighted MR is more accurate which could help avoid unnecessary surgical procedures for those people without malignant disease. In addition, it could help to classify patients with lung cancer to enable doctors to provide the most effective therapeutic procedures."

Professor Marc Decramer, President of the European Respiratory Society, said: "It is crucial that we continue to evaluate new diagnostic technologies and look at incorporating these into our management of lung cancer. A key recommendation of the European Respiratory Roadmap, which has been launched this week to steer the future of respiratory medicine, is to focus on effective screening processes. In a bid to improve patient care, the roadmap also suggests that personalised targeted medicine will improve a patient's quality of life. With the development and evaluation of new technologies such as the diffusion-

weighted [MRI scan](#), we can work towards achieving these goals."

Provided by European Lung Foundation

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