I Have Lung Nodules – What Does That Mean?

GLOBAL LUNG CANCER COALITION

Lung nodules, also called pulmonary nodules, are small areas in the lung that are denser (thicker) than surrounding, normal lung tissue.

Lung nodules may be commonly found when someone is being X-rayed or scanned for a health condition such as a heart condition or a broken bone. They may also be found during a scan carried out as part of lung cancer screening or a lung health check programme. They can show up on the scan or X-ray as white or cloudy spots against the surrounding dark or black normal areas of the lung.

People usually live with lung nodules without any difficulties. Most nodules are not lung cancer and will not become lung cancer but once you know you have one or more, it is important to know what your risk may be and what happens next.

Lung nodules are quite common in adults and rarely show any symptoms. As many as 1 in 4 people, even as high as 1 in 2 people who are smokers, may have them. More people than before are being found to have lung nodules because more scans are being carried out and images from modern scanners can now show nodules as small as 1-2mm across.

If lung nodules are found, doctors need to decide what to do about them. They may be able to quickly put your mind at ease that they are not cancer or tell you they want to have a closer look. If doctors think there's a chance the nodules are cancer, the earlier lung cancer is diagnosed, the easier it is to treat with better outcomes.

However, around 95% of nodules are not cancer.

Several things are thought to cause lung nodules including previous infections (including exposure to tuberculosis), smoking, and other conditions that can cause inflammation in the lungs. Some lung nodules are caused by small, non-cancerous tumours.

What are doctors looking for?

Not all nodules are the same. They can vary in size, shape and density.

Doctors use these features and how they may change over time to work out, as accurately as possible, which nodules are harmless and which are at increased risk of being or becoming lung cancer. They will also consider how many nodules there are and where they are in your lung.

• Size (diameter and volume)

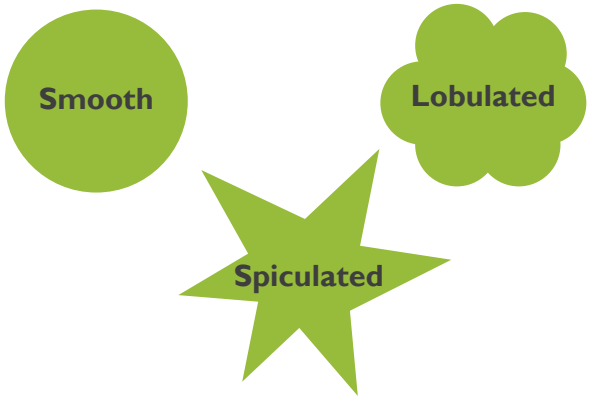
CT scan specialists (radiologists) can accurately measure the diameter and three-dimensional size of nodules. If the nodules found are small, they are most likely to be harmless (benign). Even so, your doctors may want to watch them over time with follow-up scans to see if they grow, particularly if you are thought to be at higher risk of lung cancer. Not all nodules grow.

Larger nodules will likely need further scans and tests such as a biopsy.

• Shape (edge or margin)

The edge of the nodule (where it touches normal lung tissue) is known as the margin.

Lung nodules that have smooth or rounded margins (lobulated) are more likely to be harmless. Nodules that have uneven or spiky margins (spiculated), as if reaching into the surrounding lung tissue, are more likely to need to be checked out further.



• **Density/consistency**

A scan can show how dense a nodule is. Some appear pure white on a scan because they contain mostly calcium and may be the result of a previous infection. These calcified nodules are most likely to be harmless.

Many nodules may look grey and hazy as they are less dense with no solid parts. A nodule like this is called a ground-glass nodule. Some nodules may have a solid part with a less dense, hazy part around it. These can be called semi-solid (or part-solid or sub-solid) nodules. These nodules may need to be checked out more carefully.

How do doctors decide what to do next?

Doctors follow guidelines that broadly categorise nodules from low risk through to medium and higher risk of being cancer based on CT scans.

They will also consider other factors such as age and any smoking history in calculating the overall risk of a nodule being cancer. Their evaluation of your own risk of developing lung cancer also plays a part in what happens when nodules are found.

If your nodules are in the low-risk group, you may not need to have any follow-up. For slightly higher risk, you may need to have a biopsy or a further scan in a few months to check if things have changed. Sometimes, doctors keep an eye on nodules for several years with scans from time to time.

If your nodules are thought to be higher risk, you may need to have further investigations straightaway.

Because nodules and their causes can vary a lot, the guidelines are complex and cover many situations. What happens with one person may be different for another even though their nodules may appear similar.

Your doctors will explain how the process applies to you and your options about what happens next and when.

You can ask your doctors to explain more anything you don't understand. This can help if you are feeling anxious about what is happening.

You may want to take a family member or trusted friend with you to your appointments. They can help you with questions and help with remembering what doctors said. You should feel free to take notes during your appointments or even record the conversations, with permission.

Will I need treatment for my lung nodules?

This will depend on the cause of the nodules. Sometimes, doctors will simply watch nodules over time to see if they are growing or changing in any way. This is called surveillance. If everything is stable you might not need any treatment.

Sometimes doctors will recommend that a nodule is removed by surgery, either because they know it is cancerous or because they are concerned it might be cancerous.

Cancerous lung nodules can also sometimes be treated using radiotherapy if surgery is not a suitable option for you or you don't want surgery.

Your doctors will speak to you about these possible options and recommend the most appropriate treatment, with the least possible risk or harm, to you.

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This information leaflet has been produced by the Global Lung Cancer Coalition (GLCC) secretariat and reviewed by lung cancer experts. For more information on the support and information services available in your country, visit www.lungcancercoalition.org Version 1 – November 2024.