# NHS introduces world-first liquid biopsy to accelerate lung and breast cancer diagnosis



NHS England is pioneering a revolutionary approach to cancer diagnosis and treatment with the introduction of a "liquid biopsy" blood test, initially targeting lung and breast cancer patients. This world-first test detects fragments of tumour DNA circulating in the bloodstream, allowing doctors to identify genetic mutations that guide personalised therapies far more swiftly than traditional tissue biopsies. The rollout is expected to benefit up to 15,000 lung cancer patients annually, with an additional 5,000 breast cancer patients also set to gain from this innovation.

The liquid biopsy test represents a major advance in cancer care, offering the potential to reduce diagnostic wait times and hasten access to targeted treatments such as chemotherapy, immunotherapy, and radiotherapy. It emerged from a pilot involving 10,000 people with non-small cell lung cancer, the most common type of lung cancer, and is now being expanded with hopes of applying this blood test methodology to other cancers, including pancreatic and gallbladder cancers. According to NHS officials, this approach could save the health service around £11 million annually on lung cancer care alone.

Lung cancer remains the leading cause of cancer-related deaths in the UK, with smoking identified as the primary risk factor alongside genetic predispositions, exposure to pollutants, asbestos, and certain workplace chemicals. Awareness of its symptoms is vital for early diagnosis, which significantly improves treatment outcomes. Common signs include a persistent cough lasting more than three weeks, worsening of a long-standing cough, recurring chest infections, coughing up blood, chest or shoulder pain during breathing or coughing, persistent breathlessness, unexplained tiredness, loss of appetite, and unexplained weight loss.

Other, less well-known symptoms can include hoarseness lasting more than four to six weeks, changes in voice, shoulder pain that progressively worsens, finger clubbing (changes in finger shape), difficulty swallowing, wheezing, and swelling of the face or neck. Medical professionals urge individuals to seek prompt advice if they experience any unusual or persistent symptoms, even though most cases may not turn out to be cancer. Early detection, particularly through innovative screening approaches like the lung health checks available on the NHS for people aged 55 to 74 who have ever smoked, can improve the success rate of treatments.

The new liquid biopsy test is already operational across NHS England, with more than 1,600 patients having undergone testing since its introduction in April. The test is particularly valuable for patients whose cancers have not responded to previous treatments, enabling clinicians to tailor therapy options based on the specific genetic characteristics of the tumour detected in the blood. Experts hope these advances will soon extend beyond lung and breast cancer, marking a new era of precision medicine in oncology.

While treatment options vary and include surgery, chemotherapy, immunotherapy, and radiotherapy, prevention remains a critical public health focus. Health professionals emphasise smoking cessation as the most effective strategy to reduce lung cancer risk. Support for quitting smoking is widely available through GPs and public health services.

This innovative diagnostic tool exemplifies the NHS’s commitment to leading global advancements in cancer care, combining cutting-edge research with practical clinical application to benefit thousands of patients every year and potentially transform outcomes for one of the deadliest cancers in the UK.

### 📌 Reference Map:

* Paragraph 1 – [[1]](https://www.the-independent.com/life-style/health-and-families/lung-cancer-early-signs-symptoms-nhs-b2839691.html), [[2]](https://www.england.nhs.uk/2025/05/nhs-first-in-world-to-roll-out-revolutionary-blood-test-for-cancer-patients/), [[3]](https://www.adph.org.uk/networks/london/2025/06/04/liquid-biopsy-for-lung-and-breast-cancers-now-available-across-the-nhs-in-england/), [[6]](https://www.healthbusinessuk.net/news/30052025/world-first-blood-test-identify-targeted-cancer-treatment)
* Paragraph 2 – [[2]](https://www.england.nhs.uk/2025/05/nhs-first-in-world-to-roll-out-revolutionary-blood-test-for-cancer-patients/), [[3]](https://www.adph.org.uk/networks/london/2025/06/04/liquid-biopsy-for-lung-and-breast-cancers-now-available-across-the-nhs-in-england/), [[6]](https://www.healthbusinessuk.net/news/30052025/world-first-blood-test-identify-targeted-cancer-treatment)
* Paragraph 3 – [[1]](https://www.the-independent.com/life-style/health-and-families/lung-cancer-early-signs-symptoms-nhs-b2839691.html), [[4]](https://www.nhs.uk/conditions/lung-cancer/symptoms/), [[5]](https://www.nhsinform.scot/illnesses-and-conditions/cancer/cancer-types-in-adults/lung-cancer/)
* Paragraph 4 – [[1]](https://www.the-independent.com/life-style/health-and-families/lung-cancer-early-signs-symptoms-nhs-b2839691.html), [[4]](https://www.nhs.uk/conditions/lung-cancer/symptoms/), [[5]](https://www.nhsinform.scot/illnesses-and-conditions/cancer/cancer-types-in-adults/lung-cancer/), [[7]](https://www.nhs.uk/conditions/lung-cancer-screening/)
* Paragraph 5 – [[3]](https://www.adph.org.uk/networks/london/2025/06/04/liquid-biopsy-for-lung-and-breast-cancers-now-available-across-the-nhs-in-england/), [[6]](https://www.healthbusinessuk.net/news/30052025/world-first-blood-test-identify-targeted-cancer-treatment)
* Paragraph 6 – [[1]](https://www.the-independent.com/life-style/health-and-families/lung-cancer-early-signs-symptoms-nhs-b2839691.html)

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## Bibliography

1. <https://www.the-independent.com/life-style/health-and-families/lung-cancer-early-signs-symptoms-nhs-b2839691.html> - Please view link - unable to able to access data
2. <https://www.england.nhs.uk/2025/05/nhs-first-in-world-to-roll-out-revolutionary-blood-test-for-cancer-patients/> - NHS England has become the first health service globally to introduce a 'blood test-first' approach for diagnosing suspected lung cancer. This innovative 'liquid biopsy' test detects tiny fragments of tumour DNA in the blood, enabling faster access to targeted therapies. Following a successful pilot, up to 15,000 patients with suspected lung cancer are expected to benefit annually. The test is also being expanded to include advanced breast cancer patients, with around 5,000 women set to benefit each year. This advancement aims to revolutionise cancer care by providing quicker and more precise treatments, potentially saving the NHS up to £11 million per year in lung cancer care alone. The NHS is also exploring the use of this test for other cancers, including pancreatic and gallbladder cancer. ([england.nhs.uk](https://www.england.nhs.uk/2025/05/nhs-first-in-world-to-roll-out-revolutionary-blood-test-for-cancer-patients/?utm_source=openai))
3. <https://www.adph.org.uk/networks/london/2025/06/04/liquid-biopsy-for-lung-and-breast-cancers-now-available-across-the-nhs-in-england/> - A new blood test, known as the 'liquid biopsy', is now available across the NHS in England. This test, which detects circulating tumour DNA (ctDNA), is used before traditional tissue biopsies in a 'blood test first' approach. Up to 15,000 patients with suspected lung cancer could benefit from the test each year. Since April, more than 1,600 patients have already been tested. The NHS is also offering the test to patients with advanced breast cancer whose cancer has not responded to previous treatment to determine if they are eligible for targeted treatments. ([adph.org.uk](https://www.adph.org.uk/networks/london/2025/06/04/liquid-biopsy-for-lung-and-breast-cancers-now-available-across-the-nhs-in-england/?utm_source=openai))
4. <https://www.nhs.uk/conditions/lung-cancer/symptoms/> - Lung cancer symptoms often develop as the condition progresses, with early stages typically showing no signs. The main symptoms include a persistent cough lasting more than three weeks, a long-standing cough that worsens, recurrent chest infections, coughing up blood, chest or shoulder pain when breathing or coughing, persistent breathlessness, unexplained tiredness, loss of appetite, and unexplained weight loss. Less common symptoms may include changes in finger appearance (finger clubbing), difficulty swallowing, wheezing, a hoarse voice, swelling of the face or neck, and persistent chest or shoulder pain. It's important to consult a GP if any of these symptoms are present. ([nhs.uk](https://www.nhs.uk/conditions/lung-cancer/symptoms/?utm_source=openai))
5. <https://www.nhsinform.scot/illnesses-and-conditions/cancer/cancer-types-in-adults/lung-cancer/> - Lung cancer symptoms typically develop as the condition progresses, with early stages often showing no signs. The main symptoms include a persistent cough lasting more than two or three weeks, a long-standing cough that worsens, persistent chest infections, coughing up blood, chest or shoulder pain when breathing or coughing, persistent breathlessness, unexplained tiredness, loss of appetite, and unexplained weight loss. Less common symptoms may include changes in finger appearance (finger clubbing), difficulty swallowing, wheezing, a hoarse voice, swelling of the face or neck, and persistent chest or shoulder pain. It's crucial to consult a GP if any of these symptoms are present. ([nhsinform.scot](https://www.nhsinform.scot/illnesses-and-conditions/cancer/cancer-types-in-adults/lung-cancer/?utm_source=openai))
6. <https://www.healthbusinessuk.net/news/30052025/world-first-blood-test-identify-targeted-cancer-treatment> - The NHS has introduced a 'revolutionary' blood test, known as the 'liquid biopsy', which allows lung and breast cancer patients to access targeted treatment, like chemotherapy, much earlier. The test detects tiny fragments of tumour DNA in the blood, enabling doctors to prescribe personalised treatments more swiftly. Following a successful pilot, up to 15,000 patients with suspected lung cancer are expected to benefit annually, along with around 5,000 women with suspected breast cancer. This advancement aims to revolutionise cancer care by providing quicker and more precise treatments, potentially saving the NHS up to £11 million per year in lung cancer care alone. ([healthbusinessuk.net](https://www.healthbusinessuk.net/news/30052025/world-first-blood-test-identify-targeted-cancer-treatment?utm_source=openai))
7. <https://www.nhs.uk/conditions/lung-cancer-screening/> - If you're aged between 55 and 74 and have ever smoked, you may be offered an NHS lung health check (lung cancer screening). Lung cancer causes more deaths than any other cancer in the UK. There are often no signs or symptoms of lung cancer at an early stage. Lung cancer screening aims to find lung cancer early, sometimes before you have symptoms. The lung health check looks at how well your lungs are working and can help diagnose lung cancer as early as possible. Early diagnosis can make lung cancer more treatable and make treatment more successful. ([nhs.uk](https://www.nhs.uk/conditions/lung-cancer-screening/?utm_source=openai))