



ALK Positive Lung Cancer (UK)

Lung Cancer Vaccine Trials in the UK

An updated summary of the UK situation in October 2026

Previous version: March 2025. This update version has been produced by artificial intelligence and has not been verified. It draws on sources checked on 21 October 2026.

What has changed since March 2025

- **LungVax** now has funding (Cancer Research UK, November 2025) and has been redesigned as a prevention trial for people at high risk of lung cancer. It was expected to open in summer 2026. No announcement of a first participant was found as of 21 October 2026.
- **BNT116 (LuCa-MERIT-1)** is still recruiting, with planned enrolment raised to 320. First results in operable stage II–III lung cancer were presented in September 2026. The cohort for ALK/RET-positive lung cancer runs at selected US sites only.
- **mRNA-4359 (Mobilize)** reported encouraging first-line melanoma results in April 2026 and received FDA Fast Track status. Lung cancer data are expected by the end of 2026.
- **Moderna/Merck's personalised vaccine (intismeran autogene)** succeeded in a phase 3 melanoma trial (August 2026). Several lung cancer trials of it are under way.
- **The NHS Cancer Vaccine Launch Pad** has grown to 80 research sites and now supports immunotherapy trials in lung and colorectal cancer. The earlier vaccine trials it supported have closed to new patients.
- **NHS lung cancer screening** is now a national programme, with full coverage expected by 2030.

The NHS Cancer Vaccine Launch Pad

The Launch Pad is a national NHS England programme, coordinated by the Southampton Clinical Trials Unit, that matches patients with cancer vaccine and immunotherapy trials

at their nearest participating hospital. Patients who agree to take part consent to their details and a sample of left-over tumour tissue (sometimes also blood) being checked against trial entry criteria. Oncologists and cancer specialists should be able to put patients in touch with the research nurses working on any relevant trial recruiting through this route. More information is on the [Southampton Clinical Trials Unit website](#).

What is new. The Southampton site now lists 80 research sites open and 619 patients recruited. The Launch Pad is no longer only about vaccines: it describes itself as supporting immunotherapy trials, currently in lung and colorectal cancer. The two lung trials listed are ROSETTA Lung-02 (BNT327-06), open at 24 hospitals, and ROSETTA Lung-201, open at one. Both test an immunotherapy antibody drug called BNT327 together with chemotherapy in non-small cell lung cancer. This is not a vaccine. The earlier vaccine trials (colorectal, melanoma, and head and neck) are closed to new participants. In November 2025 NHS England awarded the Southampton unit a contract of about £9.3 million (excluding VAT) to scale the Launch Pad up over 24 months from May 2026, with options to extend.

ALK-positive and other oncogene-driven NSCLC. The March version said there were no vaccines for ALK-positive NSCLC in the immediate pipeline. That remains broadly true for UK trials. BioNTech's BNT116 study now has a cohort for people with ALK- or RET-rearranged NSCLC who are on a targeted drug, but it is listed for selected US sites only. Whether the ROSETTA lung trials accept people with ALK-positive or other oncogene-driven NSCLC has not been checked for this update. This should be confirmed with the treating team.

Vaccines and cancer: background

Childhood and adult vaccination programmes target a number of infectious diseases caused by bacteria and viruses. They teach the immune system to recognise particular infections, fight them off and protect individuals and the whole population from the potentially serious consequences of catching these infections.

A few vaccines can reduce cancer risk. For example, HPV (Human Papilloma Virus) vaccine is offered to all children aged 11-13 to prevent HPV infection. Because HPV infection is extremely common and a strong risk factor for cervical cancer, this vaccine programme has resulted in a nearly 90% reduction in women developing cervical cancer in their 20s.

Current research in relation to **cancer vaccines** is based on using them to boost the immune system of those patients with early and late stage cancers. As they become available, the cancer vaccines will be offered to patients with a wide range of different cancers. This is completely different to the population based approach with common infectious diseases. There is no current plan that cancer vaccines will be used on a population wide basis for the prevention of cancer.

More information about cancer vaccines can be found on the Cancer Research UK website following the link: [CRUK](#)

“LungVax”

LungVax is being developed by researchers at Oxford University, University College London and the Francis Crick Institute. It is a **ChAdOx2 vaccine**, using a weakened adenovirus (a common cold virus) that has been genetically modified so that it cannot replicate in humans. It uses similar technology to the Oxford-AstraZeneca COVID-19 vaccine. The vaccine carries genetic instructions that train the immune system to recognise “red flag” proteins (neoantigens) that appear on abnormal lung cells very early, with the aim of destroying them before a cancer develops or returns.

Funding and timing. In November 2025 Cancer Research UK, supported by the CRIS Cancer Foundation, awarded up to £2.06 million for a four-year phase 1 trial, expected to begin in summer 2026 subject to regulatory approvals. Professor Mariam Jamal-Hanjani (UCL) leads the trial and Professor Sarah Blagden (Oxford) is co-founder of the project. As of the last check, the Oxford trial page still described the trial as not yet recruiting, and no announcement of the first participant was found. Recruitment status should be checked directly (see below).

Who the first trial is for. This differs from the March version. The first module has two cohorts of about 20 people each (40 in total), who will first be given the vaccine to test safety and the best dose:

- **Cohort 1:** people who have recently had curative surgery for early-stage NSCLC and who remain at risk of recurrence or a new lung cancer. The Oxford page refers to stage I (IA/IB) disease. Earlier descriptions referred to stage I/II, so the current protocol should be checked.
- **Cohort 2:** people taking part in the NHS Lung Cancer Screening Programme who are at elevated risk of lung and other cancers but have not had a cancer diagnosis.

Participants are followed for two years. The first person in Cohort 1 is dosed at least 48 hours before the next, and Cohort 2 opens only if fewer than four dose-limiting toxicities are seen in Cohort 1. If the vaccine proves safe, later phases will test whether it prevents cancer. The March version described a five-year recurrence endpoint and said patients with oncogene-driven NSCLC (such as ALK-positive) aged 18 or over after surgery could be included. Neither point could be confirmed in the current trial listings. People with ALK-positive or other oncogene-driven NSCLC who have had surgery should ask the trial team directly: octo-lungvax@oncology.ox.ac.uk.

More information: [Oxford LungVax trial page](#), [Cancer Research UK announcement](#) and [NIHR Be Part of Research listing](#).

The Mobilize Trial (mRNA-4359)

The Mobilize trial is run in partnership between Imperial College London and [Imperial College Healthcare NHS Trust](#), with the first patients in the UK receiving the treatment at the [National Institute for Health and Care Research \(NIHR\) Imperial Clinical Research](#) Facility at Hammersmith Hospital.

UK patients have received the experimental **mRNA** therapy – a type of immunotherapy treatment called mRNA-4359 – at Imperial College Healthcare NHS Trust as part of a phase 1/2 clinical trial. The trial aims to evaluate its safety and potential for treating melanoma, lung cancer and other ‘solid tumour’ cancers.

The treatment is designed using messenger RNA (mRNA) and works by presenting common markers of tumours to the patient’s immune system. This should help to train patients’ immune systems to recognise and fight cancer cells expressing these markers, but also potentially eliminate cells that may suppress the immune response. The primary aim of the study is to assess if this new mRNA therapy is safe and tolerated by patients, either when it’s administered alone or in combination with an existing cancer drug called pembrolizumab – which is a type of immune checkpoint inhibitor. Researchers are also investigating whether the combination of treatments can actively shrink tumours in patients with certain types of lung and skin cancer.

The Trial will include NSCLC patients with known epidermal growth factor receptor (EGFR), anaplastic lymphoma kinase (ALK), proto-oncogen tyrosine-protein kinase reactive oxygen species (ROS1), or other actionable mutations for which there are approved targeted therapies. They must have received prior approved targeted therapy, (or have been offered and declined approved targeted therapy) and then progressed. Participants must have a tumour lesion amenable to biopsy and must have another lesion that can be followed for response.

<https://trials.modernatx.com/study/?id=mRNA-4359-P101>

Update. mRNA-4359 is a ready-made (not personalised) mRNA therapy encoding parts of two proteins, PD-L1 and IDO1, that tumours use to evade the immune system. In October 2025 Moderna presented data in melanoma that had stopped responding to checkpoint inhibitors, reporting a manageable safety profile. In April 2026, at the American Association for Cancer Research meeting, it reported first-line treatment of advanced melanoma with pembrolizumab: 10 of 12 patients responded (83%), including 2 complete responses. This is a very small group. The US FDA has granted Fast Track

designation for the combination in checkpoint inhibitor-refractory, PD-L1-positive melanoma. The study continues in melanoma and NSCLC, and data in both are listed as expected by the end of 2026. No lung cancer results had been published when this update was written.

LuCa-MERIT-1 (BNT116)

Update. The trial of BioNTech's mRNA vaccine BNT116 is still recruiting. The registry entry now has planned enrolment of 320 (up from 130 at the UK launch), with new combinations added. BNT116 is not personalised: it contains six mRNAs encoding proteins commonly found on NSCLC cells.

Results so far. In September 2025 a cohort of people with unresectable stage III NSCLC given BNT116 with cemiplimab after chemoradiotherapy was presented at the World Conference on Lung Cancer. In September 2026 early results were presented for a cohort with operable stage II–III NSCLC, given BNT116 with cemiplimab and chemotherapy before surgery. In 20 patients, 65% had a partial response and none progressed before surgery. Of 15 with pathology results, 8 (53%) had a major pathological response, including 6 (40%) with no viable cancer. Immune responses to at least one target were seen in 8 of 12 patients tested. Side effects were common (fever 80%, chills 70%, cytokine release syndrome 30%) but did not delay surgery, and there were no deaths from treatment. Median follow-up was 14.5 months, so these are preliminary findings and long-term benefit is unknown.

Oncogene-driven NSCLC. As noted above, the cohort for ALK- or RET-rearranged NSCLC (people continuing a targeted drug) and the EGFR cohort are listed for selected US sites only. A separate randomised phase 2 trial (EMPOWERVAX Lung 1) of BNT116 with cemiplimab excludes people with EGFR, ALK or ROS1 alterations. The UCLH report below, which said ALK-positive patients are generally excluded, still reflects UK availability.

The original UK launch report is reproduced below.

LuCa-MERIT-1

News report from UCLH 23 August 2024

A lung cancer patient at UCLH is the first to receive a novel cancer vaccine designed to prime the immune system to recognise and fight cancer cells. It is the first time this immunotherapy made by BioNTech, the German biotechnology company, will be studied in a clinical trial for lung cancer in the UK, where the NIHR UCLH Clinical Research Facility is the lead research site.

The investigational mRNA cancer immunotherapy for non-small cell lung cancer (NSCLC) – known as BNT116 – utilises a messenger RNA (mRNA) to present common tumour markers from NSCLC to the patient’s immune system, with the aim of helping the immune system recognise and fight cancer cells expressing these markers. The investigational vaccine is designed to specifically enhance immune responses against targets primarily expressed by cancer cells, reducing the risk of toxicity to healthy, non-cancerous cells – unlike chemotherapy, which often affects both cancerous and healthy cells.

UCLH consultant medical oncologist Siow Ming Lee, who leads the national study said: “Lung cancer remains the leading cause of cancer deaths worldwide, with an estimated 1.8 million deaths in 2020. “We are now entering this very exciting new era of mRNA-based immunotherapy clinical trials to investigate the treatment of lung cancer, thanks to the foundation laid by the Office for Life Sciences, within the Department for Science, Innovation and Technology and the Department for Health and Social Care. We hope this will provide an opportunity to further improve outcomes for our NSCLC patients, whether in the early or advanced stages,” said Prof Lee, who is also Professor of Medical Oncology at UCL. Prof Lee’s research is supported by the National Institute for Health and Care Research (NIHR) Biomedical Research Centre at UCLH. Approximately 130 participants will be enrolled in the study across 34 research sites in seven countries, with six UK sites selected.

The primary objective of this study is to determine if BNT116 is safe and well tolerated. The trial will be enrolling patients at different stages of NSCLC, from early-stage NSCLC before surgery or radiotherapy (Stage 2 and 3) to late-stage disease (Stage 4) or recurrent cancer. The presence of a driver mutation for lung cancer such as ALK-positive, for which approved targeted therapies are available, leads to exclusion from the trial currently. However, an individual ALK-positive patient who is not a candidate for the respective targeted therapy may be considered for the trial.

The trial aims to establish the safety profile and a safe dose of BNT116 monotherapy, as well as of BNT116 in combination with established treatments for NSCLC to see if BNT116 has a synergistic anti-tumour effect when given with these established chemotherapy or immunotherapy treatments.

<https://www.uclh.nhs.uk/news/first-uk-patient-receives-innovative-lung-cancer-vaccine>

Other developments to watch

Personalised vaccine from Moderna and Merck (intismeran autogene, also called V940 or mRNA-4157). Each dose is made from the patient's own tumour. On 19 August 2026 the companies announced that the phase 3 INTERpath-001 trial in resected stage IIB–IV melanoma met both its main goals, improving recurrence-free and distant-metastasis-free survival compared with pembrolizumab alone. This is the first phase 3 success for an individualised mRNA cancer vaccine, but it is in melanoma, not lung cancer. Lung cancer trials include INTERpath-002 (after surgery and chemotherapy in stages II–IIIB (N2), now closed to new patients), INTERpath-009 (after surgery for people whose tumours did not respond completely to pre-operative treatment, still recruiting) and INTERpath-013 (first-line metastatic squamous NSCLC). These are international trials, and whether and where they are open in the UK, and whether they accept people with ALK-positive NSCLC, was not checked.

Prevention in the United States. A US National Cancer Institute phase 2 trial of a survivin vaccine (SurVaxM) to prevent lung cancer in high-risk people is listed with an estimated start in October 2026. It is not a UK trial.

Lung cancer screening. The March version referred to screening as “available in some parts of England and Wales”. NHS England's Targeted Lung Health Check programme has become the national Lung Cancer Screening Programme, with full coverage expected by 2030. A 2026 report in Nature Medicine said more than two million people had been invited and 7,193 lung cancers diagnosed by March 2025, 63% of them at stage 1 and 13% at stage 2. Screening matters for vaccine trials because LungVax Cohort 2 recruits from it.

Practical points for patients

- Ask your oncologist whether any trial open near you matches your stage, previous treatment and mutation status, and whether the Launch Pad can refer you. Trial entry rules change often.
- Search for UK trials on [NIHR Be Part of Research](#) and the [Cancer Research UK trial finder](#).
- Vaccines in these trials are experimental. Early results come from small studies, and none of these treatments is yet approved for lung cancer.

This summary is for information and is not medical advice.

Sources

- NHS Cancer Vaccine Launch Pad (Southampton CTU):
<https://www.southampton.ac.uk/ctu/cancer-vaccine-launch-pad.page>
- Cancer Research UK: world's first trial of a vaccine to prevent lung cancer (17 Nov 2025): <https://news.cancerresearchuk.org/2025/11/17/world-first-trial-preventative-lung-cancer-vaccine-lungvax/>
- Oxford Department of Oncology: LungVax:
<https://www.oncology.ox.ac.uk/research/clinical-trials/oncology-clinical-trials-office-octo/prospective-trials/lungvax>
- NIHR Be Part of Research: LungVax trial:
<https://bepartofresearch.nihr.ac.uk/trial-details/trial-detail?distance=&location=&trialId=60880>
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<https://clinicaltrials.gov/study/NCT05142189>
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- Targeted Oncology: mRNA-4359 plus pembrolizumab in melanoma, AACR 2026:
<https://www.targetedonc.com/view/frontline-mrna-vaccine-plus-pembrolizumab-achieves-83-orr-in-melanoma>
- Moderna press release, 17 Apr 2026: mRNA-4359 at AACR:
<https://www.biospace.com/press-releases/moderna-to-present-phase-1-2-data-on-its-investigational-cancer-antigen-therapy-mrna-4359-as-first-line-therapy-in-combination-with-pembrolizumab-in-locally-advanced-or-metastatic-melanoma-at-the-2026-aacr-annual-meeting>
- Intismeran autogene overview, incl. INTERpath-001 result (19 Aug 2026):
https://en.wikipedia.org/wiki/Intismeran_autogene
- ClinicalTrials.gov: INTERpath-002 (NCT06077760):
<https://clinicaltrials.gov/study/NCT06077760>
- ClinicalTrials.gov: INTERpath-009 (NCT06623422):
<https://clinicaltrials.gov/study/NCT06623422>
- ClinicalTrials.gov: SurVaxM lung cancer prevention (NCT07169617):
<https://clinicaltrials.gov/study/NCT07169617>
- Implementation of the NHS England Lung Cancer Screening Programme over 5 years (Nature Medicine, 2026): <https://eprints.ncl.ac.uk/311503>
- NHS England contract notice: Cancer Vaccine Launch Pad scale-up (11 Nov 2025): <https://www.find-tender.service.gov.uk/Notice/072809-2025>

Some results above come from company press releases or conference summaries and have not been peer reviewed. Trial status changes frequently; check the registry entries before acting on any of this.