# Systemic anti-cancer therapy for advanced non-small-cell lung cancer

## Non-squamous non-small cell lung cancer, RET fusion positive, PD‑L1 below 50%

Initial recommended treatment options are:

* platinum doublet chemotherapy or
* the [NICE technology appraisal guidance on pemetrexed and cisplatin](https://www.nice.org.uk/guidance/TA181) or
* pemetrexed and carboplatin or
* the [NICE technology appraisal guidance on atezolizumab and bevacizumab, carboplatin and paclitaxel](https://www.nice.org.uk/guidance/TA584) or
* the [NICE technology appraisal guidance on pembrolizumab and pemetrexed and platinum chemotherapy](https://www.nice.org.uk/guidance/ta683) or
* the [NICE technology appraisal guidance on selpercatinib](https://www.nice.org.uk/guidance/indevelopment/gid-ta11012).

For maintenance treatment for people who have had initial treatment with platinum doublet chemotherapy, the only recommended treatment option is the [NICE technology appraisal guidance on pemetrexed maintenance](https://www.nice.org.uk/guidance/ta190).

For maintenance treatment for people who have had initial treatment in line with the [NICE technology appraisal guidance on pemetrexed and cisplatin](https://www.nice.org.uk/guidance/TA181), the only recommended treatment option is the [NICE technology appraisal guidance on pemetrexed maintenance](https://www.nice.org.uk/guidance/ta402).

Pemetrexed maintenance is a recommended maintenance treatment option for people who have had initial treatment with pemetrexed and carboplatin (NHS England policy).

For people who have disease progression after initial treatment with platinum doublet chemotherapy, the [NICE technology appraisal guidance on pemetrexed and cisplatin](https://www.nice.org.uk/guidance/TA181), pemetrexed and carboplatin, or who have had pemetrexed maintenance, recommended treatment options are:

* the [NICE technology appraisal guidance on pembrolizumab](https://www.nice.org.uk/guidance/ta428) (if PD‑L1 above 1%) or
* the [NICE technology appraisal guidance on atezolizumab](https://www.nice.org.uk/guidance/ta520) (any PD-L1 0% to 100%) or
* the [NICE technology appraisal guidance on nivolumab](https://www.nice.org.uk/guidance/ta713) (if PD-L1 above 1%) or
* the [NICE technology appraisal guidance on docetaxel and nintedanib](https://www.nice.org.uk/guidance/ta347) or
* docetaxel or
* the [NICE technology appraisal guidance on selpercatinib](https://www.nice.org.uk/guidance/ta760) (available through the Cancer Drugs Fund).

For people who have had initial treatment with platinum doublet chemotherapy, the [NICE technology appraisal guidance on pemetrexed and cisplatin](https://www.nice.org.uk/guidance/TA181), pemetrexed and carboplatin, or who have had pemetrexed maintenance, and who have disease progression after treatment in line with the [NICE technology appraisal guidance on pembrolizumab](https://www.nice.org.uk/guidance/ta428), [atezolizumab](https://www.nice.org.uk/guidance/ta520) or [nivolumab](https://www.nice.org.uk/guidance/ta713), recommended treatment options are:

* the [NICE technology appraisal guidance on docetaxel and nintedanib](https://www.nice.org.uk/guidance/ta347) (NHS England policy) or
* docetaxel or
* the [NICE technology appraisal guidance on selpercatinib](https://www.nice.org.uk/guidance/ta760) (available through the Cancer Drugs Fund).

For people who have had treatment in line with the [NICE technology appraisal guidance on pembrolizumab](https://www.nice.org.uk/guidance/ta428), [atezolizumab](https://www.nice.org.uk/guidance/ta520) or [nivolumab](https://www.nice.org.uk/guidance/ta713), and who have disease progression after follow-up treatment in line with the [NICE technology appraisal guidance on docetaxel and nintedanib](https://www.nice.org.uk/guidance/ta347) or with docetaxel, the only recommended treatment option is the [NICE technology appraisal guidance on selpercatinib](https://www.nice.org.uk/guidance/ta760) (available through the Cancer Drugs Fund; NHS England policy).

For people who have had treatment in line with the [NICE technology appraisal guidance on pembrolizumab](https://www.nice.org.uk/guidance/ta428), [atezolizumab](https://www.nice.org.uk/guidance/ta520) or [nivolumab](https://www.nice.org.uk/guidance/ta713), and who have disease progression after follow-up treatment in line with the [NICE technology appraisal guidance on selpercatinib](https://www.nice.org.uk/guidance/ta760), recommended treatment options are:

* docetaxel or
* the [NICE technology appraisal guidance on docetaxel and nintedanib](https://www.nice.org.uk/guidance/ta347) (NHS England policy).

For people who have had initial treatment with platinum doublet chemotherapy, the [NICE technology appraisal guidance on pemetrexed and cisplatin](https://www.nice.org.uk/guidance/TA181), pemetrexed and carboplatin, or who have had pemetrexed maintenance, and who have had disease progression after treatment in line with the [NICE technology appraisal guidance on docetaxel and nintedanib](https://www.nice.org.uk/guidance/ta347) or with docetaxel, the only recommended treatment option is the [NICE technology appraisal guidance on selpercatinib](https://www.nice.org.uk/guidance/ta760) (available through the Cancer Drugs Fund; NHS England policy).

For people who have had initial treatment with platinum doublet chemotherapy, the [NICE technology appraisal guidance on pemetrexed and cisplatin](https://www.nice.org.uk/guidance/TA181), pemetrexed and carboplatin, or who have had pemetrexed maintenance, and who have had disease progression after treatment in line with the [NICE technology appraisal guidance on selpercatinib](https://www.nice.org.uk/guidance/ta760), recommended treatment options are:

* the [NICE technology appraisal guidance on pembrolizumab](https://www.nice.org.uk/guidance/ta428) (if PD‑L1 above 1%; NHS England policy) or
* the [NICE technology appraisal guidance on atezolizumab](https://www.nice.org.uk/guidance/ta520) (any PD-L1 0% to 100%; NHS England policy) or
* the [NICE technology appraisal guidance on nivolumab](https://www.nice.org.uk/guidance/ta713) (if PD-L1 above 1%; NHS England policy) or
* docetaxel or
* the [NICE technology appraisal guidance on docetaxel and nintedanib](https://www.nice.org.uk/guidance/ta347) (NHS England policy).

For people who have had treatment in line with the [NICE technology appraisal guidance on selpercatinib](https://www.nice.org.uk/guidance/ta760) and who have disease progression after follow-up treatment in line with the [NICE technology appraisal guidance on pembrolizumab](https://www.nice.org.uk/guidance/ta428), [atezolizumab](https://www.nice.org.uk/guidance/ta520) or [nivolumab](https://www.nice.org.uk/guidance/ta713), recommended treatment options are:

* docetaxel or
* the [NICE technology appraisal guidance on docetaxel and nintedanib](https://www.nice.org.uk/guidance/ta347) (NHS England policy).

For people who have disease progression after initial treatment in line with the [NICE technology appraisal guidance on atezolizumab and bevacizumab, carboplatin and paclitaxel](https://www.nice.org.uk/guidance/TA584) or the [NICE technology appraisal guidance on pembrolizumab and pemetrexed and platinum chemotherapy](https://www.nice.org.uk/guidance/ta683), recommended treatment options are:

* the [NICE technology appraisal guidance on docetaxel and nintedanib](https://www.nice.org.uk/guidance/ta347) (NHS England policy) or
* docetaxel or
* the [NICE technology appraisal guidance on selpercatinib](https://www.nice.org.uk/guidance/ta760) (available through the Cancer Drugs Fund).

For people who have had initial treatment in line with the [NICE technology appraisal guidance on atezolizumab and bevacizumab, carboplatin and paclitaxel](https://www.nice.org.uk/guidance/TA584) or [pembrolizumab and pemetrexed and platinum chemotherapy](https://www.nice.org.uk/guidance/ta683), and who have disease progression after treatment in line with the [NICE technology appraisal guidance on docetaxel and nintedanib](https://www.nice.org.uk/guidance/ta347) or with docetaxel, the only recommended treatment option is the [NICE technology appraisal guidance on selpercatinib](https://www.nice.org.uk/guidance/ta760) (available through the Cancer Drugs Fund; NHS England policy).

For people who have had initial treatment in line with the [NICE technology appraisal guidance on atezolizumab and bevacizumab, carboplatin and paclitaxel](https://www.nice.org.uk/guidance/TA584) or [pembrolizumab and pemetrexed and platinum chemotherapy](https://www.nice.org.uk/guidance/ta683), and who have disease progression after treatment in line with the [NICE technology appraisal guidance on selpercatinib](https://www.nice.org.uk/guidance/ta760), recommended treatment options are:

* docetaxel or
* the [NICE technology appraisal guidance on docetaxel and nintedanib](https://www.nice.org.uk/guidance/ta347) (NHS England policy).

For people who have disease progression after initial treatment in line with the [NICE technology appraisal guidance on selpercatinib](https://www.nice.org.uk/guidance/indevelopment/gid-ta11012), recommended treatment options (NHS England policy) are:

* the [NICE technology appraisal guidance on atezolizumab and bevacizumab, carboplatin and paclitaxel](https://www.nice.org.uk/guidance/TA584) or
* platinum doublet chemotherapy or
* the [NICE technology appraisal guidance on pemetrexed and cisplatin](https://www.nice.org.uk/guidance/TA181) or
* pemetrexed and carboplatin.

For people who have had initial treatment in line with the [NICE technology appraisal guidance on selpercatinib](https://www.nice.org.uk/guidance/indevelopment/gid-ta11012) and who have disease progression after treatment in line with the [NICE technology appraisal guidance on atezolizumab and bevacizumab, carboplatin and paclitaxel](https://www.nice.org.uk/guidance/TA584), recommended treatment options are:

* docetaxel or
* the [NICE technology appraisal guidance on docetaxel and nintedanib](https://www.nice.org.uk/guidance/ta347) (NHS England policy).

For maintenance treatment for people who have had initial treatment in line with the [NICE technology appraisal guidance on selpercatinib](https://www.nice.org.uk/guidance/indevelopment/gid-ta11012) followed by platinum doublet chemotherapy, the only recommended treatment option is the [NICE technology appraisal guidance on pemetrexed maintenance](https://www.nice.org.uk/guidance/ta190).

For maintenance treatment for people who have had initial treatment in line with the [NICE technology appraisal guidance on selpercatinib](https://www.nice.org.uk/guidance/indevelopment/gid-ta11012) followed by treatment in line with the [NICE technology appraisal guidance on pemetrexed and cisplatin](https://www.nice.org.uk/guidance/TA181), the only recommended treatment option is the [NICE technology appraisal guidance on pemetrexed maintenance](https://www.nice.org.uk/guidance/ta402).

Pemetrexed maintenance is a recommended maintenance treatment option for people who have had initial treatment in line with the [NICE technology appraisal guidance on selpercatinib](https://www.nice.org.uk/guidance/indevelopment/gid-ta11012) followed by pemetrexed and carboplatin (NHS England policy).

For people who have had initial treatment in line with the [NICE technology appraisal guidance on selpercatinib](https://www.nice.org.uk/guidance/indevelopment/gid-ta11012), and who have disease progression after platinum doublet chemotherapy, the [NICE technology appraisal guidance on pemetrexed and cisplatin](https://www.nice.org.uk/guidance/TA181), pemetrexed and carboplatin, or who have had pemetrexed maintenance, recommended treatment options are:

* the [NICE technology appraisal guidance on pembrolizumab](https://www.nice.org.uk/guidance/ta428) (if PD‑L1 above 1%) or
* the [NICE technology appraisal guidance on atezolizumab](https://www.nice.org.uk/guidance/ta520) (any PD-L1 0% to 100%) or
* the [NICE technology appraisal guidance on nivolumab](https://www.nice.org.uk/guidance/ta713) (if PD-L1 above 1%) or
* docetaxel or
* the [NICE technology appraisal guidance on docetaxel and nintedanib](https://www.nice.org.uk/guidance/ta347) (NHS England policy).

For people who have had treatment with platinum doublet chemotherapy, the [NICE technology appraisal guidance on pemetrexed and cisplatin](https://www.nice.org.uk/guidance/TA181), pemetrexed and carboplatin, or who have had pemetrexed maintenance, and have disease progression after follow-up treatment in line with the [NICE technology appraisal guidance on pembrolizumab](https://www.nice.org.uk/guidance/ta428), [atezolizumab](https://www.nice.org.uk/guidance/ta520) or [nivolumab](https://www.nice.org.uk/guidance/ta713), recommended treatment options are:

* docetaxel or
* the [NICE technology appraisal guidance on docetaxel and nintedanib](https://www.nice.org.uk/guidance/ta347) (NHS England policy).