What to Know
ASCO’s Guideline on Adjuvant Treatment for Lung Cancer

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KEY MESSAGES

• Adjuvant treatment is additional treatment, such as chemotherapy or radiation therapy, given after surgery to lower the risk of the cancer returning.
• Chemotherapy after surgery is recommended for patients with stage IIA, IIB, or IIIA non-small cell lung cancer.
• Radiation therapy is not recommended for stage I or II lung cancer, but may be used for stage IIIA lung cancer in specific situations.
• Talk with your doctor about the risks and benefits of adjuvant treatment.

To help doctors give their patients the best possible care, the American Society of Clinical Oncology (ASCO) asks its medical experts to develop recommendations for specific areas of cancer care. ASCO and Cancer Care Ontario (CCO) together developed recommendations for treatment after surgery for non-small cell lung cancer. This guide for patients is based on their recommendations.

BACKGROUND
Non-small cell lung cancer (NSCLC) is the most common type of lung cancer. Adjuvant therapy is additional treatment given after surgery to reduce the risk that the cancer will come back. Adjuvant treatment may include chemotherapy (the use of drugs to kill cancer cells) and/or radiation therapy (the use of high energy x-rays to kill cancer cells). This guide for patients explains whether chemotherapy and radiation therapy are recommended treatments after surgery to remove the lung cancer, depending on the stage of the cancer.

Staging is a way of describing the cancer, such as its size, and if or where the cancer has spread. Cancer may spread through the blood or lymphatic system. The lymphatic system is part of the immune system and drains fluid from body tissues through a series of tubes. Lymphatic fluid is filtered in small, bean-shaped organs called lymph nodes. When cancer cells travel in the lymphatic system, they become trapped in the lymph nodes.

The treatment for stage I, II, and IIIA NSCLC includes surgery to remove the tumor and the surrounding lung tissue and lymph nodes. The stage of NSCLC is described by a number, one through four (Roman numerals I-IV). A higher stage
of cancer means that the risk that the cancer may come back is also higher.

- Stage I NSCLC means that the cancer has not spread to nearby lymph nodes. Stage IA means the primary tumor is relatively small. Stage IB means the primary tumor is relatively large, or is located in a place where it is more likely to spread. A stage I cancer can usually be removed by surgery.

- Stage II NSCLC describes a cancer that may have spread to nearby lymph nodes. Stage IIA means the primary tumor is relatively small. Stage IIB means the primary tumor is relatively large, or is located in a place where it is more likely to spread. In a stage II cancer, both the tumor and the affected lymph nodes can usually be removed by surgery.

- Stage III NSCLC may be difficult to remove with surgery. When the cancer has spread to lymph nodes in the center of the chest, on the same side as where the cancer started, it is known as stage IIIA. When the cancer spreads to lymph nodes on the opposite side of the chest, it is known as stage IIIB. In general, surgery is not used for any stage IIIB lung cancer.

- Stage IV NSCLC has spread through the bloodstream to areas of the body outside of the lung and is not treated with surgery.

This patient guide applies to stage I, II, and IIIA NSCLC. For information on stage IIIB and IV NSCLC, read What to Know: ASCO’s Guideline on Advanced Lung Cancer Treatment at www.cancer.net/whattoknow.

**RECOMMENDATIONS**

The ASCO and CCO recommendations for adjuvant treatment for stage I, II, and IIIA NSCLC include the following:

- Chemotherapy after surgery to remove the lung cancer is recommended for patients with stage IIA, IIB, and IIIA NSCLC because clinical trials have shown that it may help patients live longer.

- Chemotherapy after surgery is not recommended for patients with stage IA NSCLC because there is not enough evidence to show that chemotherapy helps these patients live longer, and because these patients tend to have a good chance of long-term survival with surgery alone. For the same reasons, chemotherapy for stage IB NSCLC is not recommended for every patient, but it may be appropriate in some situations. Talk with your doctor for more information.

- Radiation treatment after surgery is not recommended for patients with stage IA, IB, IIA, or IIB NSCLC because clinical trials have shown that it does not help patients live longer. Radiation therapy is not routinely recommended for all patients with stage IIIA NSCLC, but it may be helpful for some patients. Talk with your doctor for more information.

The ASCO/CCO recommendations are summarized in this table:

**Table. Summary of Recommendations for Adjuvant Treatment of NSCLC**

<table>
<thead>
<tr>
<th>Stage of cancer</th>
<th>Chemotherapy Recommendation</th>
<th>Radiation Therapy Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage IA</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Stage IB</td>
<td>Not for every patient; may be used in specific situations</td>
<td>No</td>
</tr>
<tr>
<td>Stage IIA</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Stage IIB</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Stage IIIA</td>
<td>Yes</td>
<td>Not for every patient; may be used in specific situations</td>
</tr>
</tbody>
</table>

**FACTS ABOUT ADJUVANT CHEMOTHERAPY FOR NSCLC**

Chemotherapy is delivered as often as once per week for up to four months. The chemotherapy program should include the drug cisplatin (Platinol), plus one
other drug. Your doctor can explain to you the names of the drugs and the treatment schedule.

Chemotherapy is given through the veins (intravenously, or IV), typically in your arm. The side effects of chemotherapy may include fatigue, nausea and/or vomiting, appetite loss, and irritation around the vein where the chemotherapy is injected. If you have small veins in your arms, the doctor may recommend that you have a venous access device, also known as a port-a-cath (or port), implanted under your skin that allows the chemotherapy to be given directly into a larger vein in the neck or chest.

Other, less common side effects include anemia (a decrease in the number of red blood cells), fever with a low number of white blood cells, hair loss, constipation, peripheral neuropathy (a numbness, or tingling of the fingertips and/or toes), kidney damage, and hearing loss. Often, these side effects go away after treatment, but damage to the nerves, kidneys, or hearing may be permanent. Because some patients (1%) who develop an infection while their white blood count is low from chemotherapy have died, you and your doctor should take all side effects of chemotherapy very seriously.

FACTS ABOUT ADJUVANT RADIATION TREATMENT FOR NSCLC
Radiation therapy is given as often as once a day, Monday to Friday, for up to six weeks. The side effects of radiation therapy may include difficulty breathing, a sore throat, difficulty eating or swallowing, and fatigue. These side effects usually go away after treatment.

WHAT THIS MEANS FOR PATIENTS
Adjuvant treatment for early-stage NSCLC may lower the risk of the cancer coming back, but is also associated with potentially serious side effects. The chart above can help you learn whether adjuvant chemotherapy and/or radiation therapy is recommended for your stage of lung cancer. To learn more about adjuvant treatment for lung cancer, talk with your doctor about the type of cancer you have, your medical history, your overall health, and the risks and benefits of adjuvant treatment, including the potential side effects.

HELPFUL LINKS
Read the entire clinical practice guideline at www.asco.org/guidelines/adjuvantnsclc.


ASCO Answers: Lung Cancer www.cancer.net/ascoanswers

Side Effects of Chemotherapy www.cancer.net/features

Side Effects of Radiation Therapy www.cancer.net/features

QUESTIONS TO ASK THE DOCTOR
To learn more about adjuvant treatment for lung cancer, consider asking your doctor the following questions:
• What stage is the cancer?
• Would I benefit from adjuvant treatment?
• What are my treatment options?
• What treatment(s) do you recommend?
• What are the risks of this treatment?
• How could this treatment help me?
• What are the short-term and long-term side effects of this treatment? Are they preventable and/or treatable?
• How could this treatment affect my quality of life?
• What clinical trials are open to me?
• Where can I find more information?

In addition, ASCO has created a Decision Aid Tool (www.asco.org/guidelines/clinicaltools) to help patients talk with their doctors about the risks and benefits of chemotherapy after surgery.
ABOUT ASCO GUIDELINES
To help doctors give their patients the best possible care, ASCO asks its medical experts to develop evidence-based recommendations for specific areas of cancer care, called clinical practice guidelines. Due to the rapid flow of scientific information in oncology, new evidence may have emerged since the time a guideline or assessment was submitted for publication. As a result, guidelines and guideline summaries, like this one, may not reflect the most recent evidence. Because the treatment options for every patient are different, guidelines are voluntary and are not meant to replace your physician’s independent judgment. The decisions you and your doctor make will be based on your individual circumstances. These recommendations may not apply in the context of clinical trials.

The information in this guide is not intended as medical or legal advice, or as a substitute for consultation with a physician or other licensed health care provider. Patients with health care-related questions should call or see their physician or other health care provider promptly, and should not disregard professional medical advice, or delay seeking it, because of information encountered in this guide. The mention of any product, service, or treatment in this guide should not be construed as an ASCO endorsement. ASCO is not responsible for any injury or damage to persons or property arising out of or related to any use of this patient guide, or to any errors or omissions.

RESOURCES
Good cancer care starts with good cancer information. Well-informed patients are their own best advocates, and invaluable partners for physicians. ASCO’s patient website, Cancer.Net, brings the expertise and resources of the world’s cancer physicians to people living with cancer and those who care for and care about them. ASCO is composed of more than 28,000 oncologists globally who are the leaders in advancing cancer care. All the information and content on Cancer.Net was developed and approved by the cancer doctors who are members of ASCO, making Cancer.Net the most up-to-date and trusted resource for cancer information on the Internet. Cancer.Net is supported by The ASCO Cancer Foundation, which provides funding for cutting-edge cancer research, professional education, and patient and family support. People in search of cancer information can feel secure knowing that the programs supported by The ASCO Cancer Foundation provide the most thorough, accurate, and up-to-date cancer information found anywhere.

Visit Cancer.Net to find guides on more than 120 types of cancer and cancer-related syndromes, clinical trials information, coping resources, information on managing side effects, medical illustrations, cancer information in Spanish, podcasts, videos, the latest cancer news, and much more. For more information about ASCO’s patient information resources, call toll free 888-651-3038.