



LUNG CANCER PATIENT CARE PATHWAY

a guide for patients and their loved one



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A lung cancer diagnosis is a moment that changes life, whether you are going through this difficult path yourself or accompanying someone close to you. We want you to know one thing – you are not alone in this. This guide was created to walk you through the various stages of lung cancer treatment: from the first symptoms and diagnosis, through different forms of therapy, to life after treatment. But it's not just dry medical facts. It is also a space where we speak openly about what is often left unspoken in doctor's offices: fear, helplessness, anger, and hope. About how to cope with the visible marks of the disease on the body. About when to seek help from a psycho-oncologist. About where to seek support when your strength seems to be leaving you. Cancer is not only a challenge for the body, it is above all a test for the mind. Fatigue, pain, side effects of treatment, hair loss, skin changes – all of this can affect how we perceive ourselves and our place in the world. You may feel different, look different, function differently. And that is completely natural, although extremely difficult. Therefore, in this guide, you will find not only information about what to expect at various stages of treatment, but also practical advice on how to take care of your mental health. You will learn how to talk about your emotions, how to ask for help, how to find inner sources of strength. We will suggest where to seek professional psychological support and how to use support groups, which can become an invaluable source of understanding and a sense of community. Remember – taking care of your mental health during cancer treatment is not a luxury, it is a necessity. Remember – taking care of your mental health during cancer treatment is not a luxury, it is a necessity. It is not a sign of weakness, but a wise approach to the illness. Your emotions are important, your fear is understandable, your need for support is justified. We wish that this guide becomes a compass for you on this difficult journey. May it bring you not only knowledge, but also comfort and hope. The road ahead of you is not easy, but you do not have to walk it alone.

Adrianna Sobal

President of the Foundation

W trosce o pacjenta

SYSTEMIC TREATMENT OF ADVANCED LUNG CANCER IN QUESTIONS AND ANSWERS GUIDE FOR PATIENTS



MD, PhD

MAGDALENA KNETKI-WRÓBLEWSKA

Specialist in clinical oncology. Assistant professor at the Clinic of Lung and Thoracic Tumors of the National Institute of Oncology in Warsaw. Author and co-author of publications on lung cancer, primary thymus tumors, and supportive care. Co-author of educational projects related to cancer immunotherapy and molecularly targeted treatment. Participates in multicenter clinical trials related to the treatment of thoracic cancers.

Lung cancer is a common tumor. In Poland, this disease is diagnosed in over 20,000 people each year. In most patients, non-small cell lung cancer is detected – about 85% of all cases. In the remaining individuals, small cell lung cancer is diagnosed. Regardless of the type of tumor, the disease is usually diagnosed at a locally advanced stage (which means the presence of a lung tumor with metastases to the mediastinal lymph nodes) or at a generalized stage, which means the presence of metastatic changes in other organs, most often – in the lungs, liver, bones, and brain. In patients with advanced-stage disease, the treatment of choice is systemic therapy – affecting all cancer lesions. In recent years, significant progress has been observed in this area. New drugs with new mechanisms of action have appeared, which have proven to be more effective than the previously used chemotherapy. At the same time, however, the use of new drugs is associated with the possibility of adverse effects. This guide discusses the most important information regarding indications and contraindications for therapy, as well as symptoms that may be related to anticancer treatment.

What does systemic treatment mean?

Systemic treatment is a treatment that affects all cancerous changes. It can be administered through intravenous infusions or in the form of oral preparations – tablets and capsules.

When can I receive systemic treatment for lung cancer?

Currently, there are many indications for systemic treatment in patients with lung cancer. It can be both a complementary element to surgery or radiotherapy, as well as used independently in the case of stage 4 lung cancer. The choice of drug is primarily influenced by the stage of the disease, but also by the histological type of the tumor and the presence of specific molecules on the tumor cells (biomarkers).

What types of systemic treatment are available for patients with lung cancer in Poland?

Currently, patients may be eligible for chemotherapy, immunotherapy, or molecularly targeted therapy (targeted therapies).

What is chemotherapy?

Chemotherapy uses anticancer drugs that destroy cancer cells by disrupting their growth and division. These drugs can also affect healthy, rapidly dividing cells. It is usually administered intravenously or orally.

Which drugs are used in chemotherapy?

Typically, two-drug regimens are used, involving platinum-based drugs – these include cisplatin and carboplatin.

Other chemotherapy drugs:

- Pemetrexed
- Docetaxel
- Gemcitabine
- Vinorelbine
- Etoposide
- Paclitaxel

What is molecularly targeted therapy?

These are therapies using drugs that block specific signaling pathways in cancer cells, thereby inhibiting their growth. They are the best treatment option for patients whose tumors have specific genetic alterations (mutations or rearrangements). They are usually taken orally on a continuous basis.

How can it be tested whether a tumor will be sensitive to targeted therapies?

To confirm the presence of significant genetic abnormalities in cancer cells, molecular diagnostics need to be performed. Most often, next-generation sequencing (NGS) is carried out. This test allows many genes, which are relevant in non-small cell lung cancer, to be assessed simultaneously. The presence of gene fusions can also be confirmed by FISH testing (fluorescence in situ hybridization).

Does every patient undergo molecular testing?

The indications for performing genetic tests for cancer are decided by the oncologist who qualifies the patient for treatment. Sometimes also the thoracic surgeon or pulmonologist, who performed the bronchoscopy and took tumor samples for pathomorphological examination. Genetic tests are primarily justified in patients with lung adenocarcinoma, large cell carcinoma, and cancer without a determined subtype – NOS. In patients with squamous cell lung cancer, testing can be considered in patients under 50 years of age and in those who have never smoked.

Which molecular disorders are significant in qualifying for treatment?

Currently, the list of significant genetic abnormalities, from a practical point of view, includes:

- Activating EGFR mutations (exon 19, exon 21), (L858R substitution)
- EGFR exon 20 insertion
- ALK rearrangement
- ROS1 rearrangement
- BRAF V600E mutation
- NTRK fusion
- MET exon 14 skipping mutation
- RET rearrangement
- KRAS G12C mutation
- ERBB2 (HER2) mutation

Which targeted drugs are currently available in Poland?

Currently, in Poland, therapies are reimbursed for patients in whom disturbances in the EGFR genes (only activating mutations), ALK, ROS1, KRAS G12C, and NTRK have been detected. Below are the names of drugs for individual patient groups:

- EGFR mutations: Gefitinib, Erlotinib, Afatinib, Osimertinib, Amivantamab+Lazertinib
- ALK rearrangements: Crizotinib, Alectinib, Brigatinib, Lorlatinib
- ROS1 rearrangements: Entrectinib, Crizotinib
- NTRK gene fusion: Larotrectinib, Entrectinib
- KRAS G12C mutation: Sotorasib
- BRAF V600E mutation: Encorafenib + Binimetinib
- Exon 20 insertion in EGFR: Amivantamab

What is immunotherapy?

Immunotherapy aims to strengthen the body's natural ability to fight cancer. These drugs block inhibitory pathways (so-called immune system checkpoints, e.g., PD-1/PD-L1), allowing cells (lymphocytes) to attack cancer cells.

Are additional tumor tests needed to determine if a patient can receive immunotherapy?

When qualifying patients for immunotherapy, the result of an immunohistochemical test is taken into account. A pathologist specialist assesses whether the PD-L1 molecule is present on cancer cells. Depending on the percentage of evaluated cells that contain this molecule, immunotherapy may be used alone or in combination with chemotherapy.

Are there any contraindications to immunotherapy?

Immunotherapy can only be used in patients who feel fairly well, and whose overall activity only slightly deviates from their activity before the illness. In patients who report significant weakness, are losing weight, or require support from loved ones in daily functioning, immunotherapy is significantly less effective. Prolonged use of glucocorticosteroids before starting immunotherapy is also considered a factor that negatively affects the effectiveness of treatment. Additionally, immunotherapy should not be used in patients with significant coexisting autoimmune diseases – for example, severe rheumatoid arthritis, inflammatory bowel diseases, or multiple sclerosis.

What immunological drugs are currently available?

Below are the regimens available for patients with non-small cell lung cancer. Immunotherapy (durvalumab, atezolizumab) in combination with chemotherapy may also be used in patients diagnosed with small cell lung cancer.

Pembrolizumab: It can be used in monotherapy, or in combination with chemotherapy. It can be used in patients with advanced-stage disease, as well as in perioperative treatment in patients with early-stage lung cancer.

Nivolumab: it can be used in patients with advanced-stage disease, in monotherapy, or in combination with ipilimumab and chemotherapy.

Atezolizumab: may be used in monotherapy in patients with advanced disease, or as an adjuvant treatment after surgery.

Durvalumab: May be offered to patients with unresectable NSCLC in stage III after chemoradiotherapy, as well as in combination with tremelimumab and chemotherapy in the first-line treatment of advanced disease.

Cemiplimab: may be used in monotherapy or in combination with chemotherapy in the first-line treatment of advanced disease.

Tremelimumab: may be used in combination with durvalumab and chemotherapy in the first-line treatment of advanced disease.

Serplulimab: in first-line treatment of patients with extensive-stage small cell lung cancer, in combination with carboplatin and etoposide in the induction phase.

Are the adverse effects of systemic treatment similar, or do they differ depending on the type of therapy?

The mechanism of action of chemotherapy, targeted therapy, and immunotherapy is different, which is why the symptoms related to treatment complications vary. It is therefore important that at the start of treatment, you discuss with your attending physician what the most likely side effects are and what symptoms to expect, as well as which ailments should worry the patient and prompt them to contact a doctor.

What are the most common side effects of chemotherapy?

Chemotherapy affects rapidly dividing cells in the bone marrow, hair follicles, and the digestive system. Therefore, abnormalities listed in the table are most often observed.

Adverse Effect	Description
Abnormal blood morphology results	Neutropenia (low white blood cell count – increases risk of infection) Anemia (deficiency of red blood cells) Thrombocytopenia (deficiency of platelets – risk of bleeding)

Baldness	Hair loss
Digestive System	Nausea and vomiting, diarrhea, constipation.
Inflammation of the oral cavity	Inflammation and ulcers of the oral mucosa.
Peripheral neuropathy	Tingling or numbness of the hands or feet
Other	Changes in taste, ringing in the ears/changes in hearing Swelling of the limbs/fluid retention

What symptoms during chemotherapy are concerning and should prompt the patient to see a doctor?

- Increase in body temperature above 38.5°C, especially if accompanied by cough, shortness of breath, diarrhea
- Bleeding from the mucous membranes of the nose, mouth, or gastrointestinal tract
- Bruising on the skin that was not present before starting chemotherapy
- Sudden deterioration of wellbeing, difficulty breathing
- Pressure, pain in the chest

Is it possible to prevent complications of chemotherapy?

The most troublesome symptoms accompanying chemotherapy for patients are nausea and vomiting. Currently, we have modern medications that are used to prevent nausea and vomiting. They are administered intravenously or orally on the day of chemotherapy, and sometimes also on subsequent days – in the case of chemotherapy regimens that include cisplatin or carboplatin. Taking preventive medications according to recommendations significantly reduces the risk of unpleasant symptoms. In some patients, primary prevention of neutropenic fever is also used with granulocyte colony-stimulating factors.

Such prevention is used obligatorily in patients who patients treated with topotecan due to small cell lung cancer. In other patients, the risk of developing neutropenic fever is assessed individually, taking into account previous treatments, the patient's age, comorbidities, and abnormalities in laboratory tests.

What are the most common side effects of targeted drugs?

Common side effects include gastrointestinal problems (diarrhea, nausea, vomiting) and skin problems. When using certain drugs, abnormalities in laboratory test results may be observed, which can be a reason for temporarily stopping treatment.

Undesired effect	Description	Medicines
Skin problems	Acne-like rash, dry skin, itching, nail changes	Aphatinib, Erlotinib, Gefitinib, Osimertinib, Amivantamab
Hypertension	Increase in blood pressure	Brigatinib
Intestinal problems	Diarrhea, nausea, vomiting, constipation	Afatinib, Erlotinib, Gefitinib, Osimertinib, Sotorasib
Other	<ul style="list-style-type: none"> • Changes in liver function • Vision problems • Mood disorders • Neuropathy • Hyperlipidemia 	Gefitinib, Alectinib, Sotorasib, Crizotinib, Lorlatinib

Which symptoms during targeted drug treatment are concerning and should prompt the patient to see a doctor?

- Diarrhea persisting for several days despite using loperamide
- Abdominal pain, presence of blood in stools
- Increase in blood pressure values and no improvement after using regular antihypertensive drugs
- Disturbances of consciousness
- Difficulty breathing, significant and sudden weakness

How to proceed in case of diarrhea during targeted therapy?

It is worth paying attention to the diet. It is recommended to drink 8-12 glasses of water daily. It is advisable to avoid foods high in fiber, milk, and its derivatives. Easily digestible foods are preferred, such as: bananas, white rice, applesauce, toasts – preferably salty (the so-called BRAT diet – bananas, rice, apples, toasts). In case of diarrhea, it is recommended to take loperamide – in a dose determined by the attending physician.

Targeted drug therapy?

It is recommended to wash the skin with lukewarm water and gently pat it dry. Mild preparations that do not contain soap, maintain the skin's acidic pH, and use syndets, gels with acidic pH, and cleansing oils should be used for washing. Sun protection with a sunscreen of at least SPF 30 is advised. Caution should be taken when caring for nails, avoiding cutting them too short and avoiding tight footwear. What are the side effects of immunotherapy? Increased activity of the immune system during immunotherapy can lead to autoimmune inflammation of one or several organs. Thyroiditis is most commonly observed, which is why the thyroid hormone status of patients qualified for immunotherapy is monitored. Other complications are listed in the table. However, it is worth noting that the frequency of immunotherapy complications is not high; in the case of monotherapy, it usually does not exceed 20% of patients. Serious adverse effects, such as myocarditis, occur rarely – in less than 1% of patients.

Adverse effect of immunotherapy

- Skin reactions
- Symptoms from the gastrointestinal tract – enteritis, hepatitis, pancreatitis
- Symptoms from the respiratory system – pneumonia
- Hormonal disorders – hypothyroidism, hypopituitarism, adrenal cortex insufficiency
- Arthritis
- Myositis, myocarditis

What concerning symptoms should prompt a patient to see a doctor?

Symptoms associated with autoimmune organ inflammation are initially non-specific. It is important to note any concerning complaints, indicating when the symptoms began, whether they are increasing, and what additional medications the patient has taken in connection with them. The doctor to whom the patient turns should be informed that the patient is receiving immunotherapy. This can help in quickly diagnosing the cause of the reported complaints.

Below are the symptoms that should alarm a patient during immunotherapy, especially if their severity increases over hours and days.

- Increasing weakness
- Breathing problems, dry cough
- Diarrhea, abdominal pain
- Extensive skin lesions, blisters, ulceration
- Vision disturbances
- Yellowing of the skin or eyes
- Muscle pain
- Severe nausea or vomiting
- Feeling of irregular heartbeat
- Swelling
- Vision disturbances, photophobia, exophthalmos

Is it possible to predict who will experience complications from immunotherapy?

This is not clearly defined, which is why every patient starting treatment should receive information about the drug that will be used and discuss with their attending physician the possible predictable complications. Adverse effects related to the activation of the immune system occur slightly more often in people who have previously been diagnosed with autoimmune diseases – for example, arthritis. Immunotherapy-related pneumonia occurs slightly more often in smokers who have previously been diagnosed with lung diseases. However, it is important to remember that complications from immunotherapy can occur in any patient, most often in the first months of therapy.

How are immunotherapy complications treated?

The treatment of immunotherapy complications depends on the severity of the symptoms reported by the patient. Usually, the administration of the next dose of immunotherapy is postponed, and treatment with orally administered steroids is started, with the patient taking them at home for several weeks. It is very important not to reduce the steroid medication dose too quickly, which usually takes at least 4-6 weeks. In the case of more severe symptoms or significant worsening of the patient's well-being, hospital treatment is necessary.

Is the occurrence of complications a reason to stop immunotherapy?

It depends on the severity of the symptoms. In most patients, after reducing the dose of steroids and achieving full recovery, it is possible to return to treatment with the immunologic drug. However, in the case of serious complications requiring hospitalization or in the case of recurring symptoms despite proper steroid therapy, permanent discontinuation of immunotherapy is recommended.

What to ask an oncologist before starting systemic treatment?

It is worth preparing for a visit to the oncologist and noting down the most important information. Basic questions may include the following:

[W przypadku leków stosowanych doustnie](#)

- What is the name of the medicine I will receive?
- How many tablets per day and at what time should I take them?
- Does the interval between a meal and the anticancer medicine matter?
- How often will I need to come for appointments to receive the next package of the medication?
- Are there any dietary restrictions?
- How often will we perform a CT scan to check the effectiveness of the treatment?
- What are the most common side effects of this medication, and are any preventive measures recommended?
- What symptoms should alert me enough to urgently see a doctor?

In the case of drugs administered intravenously

- What is the name of the treatment I will receive?
- How often will I need to come for appointments to receive the next cycle of therapy?
- Are there any dietary restrictions?
- How often will we perform a CT scan to check the effectiveness of the treatment?
- What are the most common side effects of this therapy, and are any preventive measures recommended?
- What symptoms should alert me enough to urgently contact a doctor?



ASSOC. PROF. MD JOANNA CZUWARA

Dermatologist, dermatopathologist certified by the European UEMS exam (2011). Assistant professor at the Department and Clinic of Dermatology at the Medical University of Warsaw. Head of the Immunodermatology Laboratory. Supervisor of the Dermatology Student Circle at M.U.W. Chairwoman of the Warsaw Branch of the Polish Dermatological Society. Scientific and educational activities include participation in the History Committee of the American Society of Dermatopathology (ADPS), participation in the Executive Committee of ISDP (International Society of Dermatopathology), presence in the Board of the Polish Dermatological Society and in the European UEMS structures for dermatology specialization. Editor-in-Chief of the "Dermatological Review" and editor of the dermatopathology section in the "Polish Journal of Pathology." Interests include the diagnosis of inflammatory and neoplastic skin diseases, alopecia, and cutaneous toxicities of oncological therapies. Interests in aesthetic medicine concern tissue complications of skin implants and the use of neuromodulators in clinical practice.

GUIDE FOR CANCER PATIENTS WHAT EVERY PATIENT SHOULD SEE ABOUT THE SKIN DURING CANCER THERAPY?

*Joanna Czuwara Dermatology Specialist, ICDP-UEMS
Dermatopathologist Department and Clinic of Dermatology, Medical
University of Warsaw*
SYMPTOMS AND CAUSES

Can the skin changes I am observing (e.g., rash, dryness, cracking of the skin, itching) be a result of cancer treatment?

Oncological therapy is broadly aimed at eliminating the tumor, and in the case of disease spread – at its metastases. This is the reason why – whether chemotherapy, targeted therapy, or immunotherapy is used in treatment – each of these methods, focused on the dysfunction of cancer cells, can indeed affect the skin. The therapy that most affects the skin and causes very characteristic changes on it is targeted therapy directed against the epidermal growth factor. Of course, disrupting the epidermal factor responsible for the proper function of the epidermis and skin results in the skin undergoing certain changes. Namely, inflammatory nodules may appear on it, i.e., red, raised, and visible changes the size of millet or peas. Pustular changes may also occur, meaning those with a characteristic filling at the top with yellow secretion, i.e., pus.

A few such changes do not have a significant impact on lowering the patient's quality of life, but if there are more and more of these changes on the face, and they additionally appear on the chest or back, this is evidence that the oncology drug is working, the patient does not want to look in the mirror, and oncologists know that such changes require treatment to reduce their severity and maintain oncological therapy. The severity of skin changes and side effects of specific drugs is medically assessed using scales, in order to treat them properly and not discontinue oncological therapy due to their occurrence.

Additionally, the skin during cancer therapy becomes dry, and this is the reason why it is important for the patient to take proper care of it and wash with gentle products, so-called soap-free soaps, oils for washing with syndets that do not contain detergents and have an acidic pH. It is better not to soak the skin for long and not in hot water, which is why a shower in lukewarm rather than hot water is recommended. After washing, it is also good to moisturize or grease the skin depending on the degree of its dryness. It is very important to treat the skin gently, regardless of whether chemotherapy, targeted therapy, or immunotherapy will be included. Taking care of the skin from the first day of oncology therapy translates into better tolerance of cancer treatment and protects against the occurrence of severe side effects.

SKIN WELL-BEING SIGNIFICANTLY AFFECTS THE EFFECTIVENESS OF CANCER TREATMENT

What types of skin changes are typical for lung cancer treatment – for example, with immunotherapy, chemotherapy, or targeted therapy?

For several years, lung cancer treatment has been more effective, significantly prolonging survival and even bringing patients into disease-free remission. To this end, drugs from three groups are used: 1. immunotherapy, 2. chemotherapy, or 3. targeted therapy. Sometimes these therapies are combined to achieve higher antitumor efficacy.

Characteristic changes of targeted therapy directed at the epidermal growth factor receptor are papules and pustules that often appear on the face shortly after starting the therapy, even as early as the second week of treatment. Such inflammatory changes typically localize on the face and, as a result, negatively affect the patient's self-esteem, because they are visible, difficult to hide, and should be reported to the oncologist or nurse.

These changes can be effectively treated from the first days they appear, and moreover, the importance of preventive treatment, which prevents their occurrence, is emphasized. You can ask your attending doctors or nurse about the details of these therapies.

In the case of chemotherapy, the skin will become dry, sensitive, and regenerate more slowly. Dry skin should, of course, be moisturized, and not just by drinking a lot of water, because there is a difference between hydrating the body and the skin's lipid layer, which needs to be supplied with emollient substances from the outside.

Sometimes, changes may occur in the form of swollen, burning, and red hands and feet due to the medication used, as well as sensory disturbances in the fingertips. This is the so-called hand-foot syndrome, which is treated with topical and systemic medications to reduce discomfort. In the case of immunotherapy, which stimulates immune cells to recognize and kill cancer cells, autoimmune dermatological diseases may occur, among which are listed vitiligo, alopecia areata, blistering diseases, psoriasis, or lichen planus. These are specific disease entities that require particular treatment, and dermatologists specialize in their recognition and diagnosis. Therefore, I think that your attending physician, familiar with the various skin symptoms of different oncological therapies in the case of lung cancer, will assess the type of such lesions and decide to what extent they will rely on established standards of treatment for them, and when they will refer you for specialized diagnostics. I would, however, like to emphasize the importance of reporting to your oncologist all skin changes you experience—new, different, or recently developed—in any area, in order to choose the best possible further course of action.

Are these symptoms temporary, or can they persist longer after the end of treatment?

Most skin changes related to the use of oncology drugs resolve after discontinuing their use. This is not always the case with specific skin diseases caused by immunotherapy; for example, psoriasis once developed will most likely remain despite the completion of cancer therapy.

The definitely temporary symptoms will be dry, red skin, cracked fingertips, papular changes on the face, or itchy scalp. Also, erythematous changes that may occur during oncological therapy, swollen red hands and feet will go away after the therapy is completed.

A particularly troublesome symptom during targeted therapy may be the inflamed nail folds of the hands and feet. The folds are painful, easily injured, and lead to the formation of easily bleeding changes around the nails. They are difficult to treat because they are very sensitive to injury. Hands perform many daily activities, and shoes irritate the periungual tissue just by pressure. These changes will resolve after discontinuing oncological therapy, but during therapy, management is extremely complex, aimed at reducing pain and sensitivity, preventing bacterial superinfection, limiting hand soaking, and disinfecting with alcohol-free preparations.

DIAGNOSIS AND DIFFERENTIATION

How can one distinguish whether a skin change results from oncological treatment, infection, or allergy?

The question of how to differentiate skin changes and distinguish those resulting from oncological treatment, infection, or allergy is difficult. Most changes in dermatology are red, scaly, painful, and above all visible and troublesome for the patient. If the patient had no history of dermatological diseases before treatment, then all new skin changes and symptoms will most likely be related to oncological treatment. Such changes should be shown to the attending physician. As for the infection, a typical symptom of the infection is the occurrence of lesions that ooze, covered with cloudy-yellow discharge, easily bleeding. Moreover, infections spread quickly. Bacterial infections tend to occur around natural openings, especially near the nose, because pathological bacterial flora often originates from the nose. Allergy has many faces. Allergic reactions are characterized by the presence of itchy, flat, erythematous, or papulovesicular lesions. If the changes are caused by a drug, they do not respond to local treatment. In such cases, the decision is often made to discontinue oncological treatment and observe whether the lesions resolve. Upon re-exposure to the drug, the recurrence of these lesions indicates a connection with the administered drug, as well as an allergic basis for the changes. This means that there are cells in the body that recognize the drug as harmful and produce symptoms on the skin in the form of erythema, extensive peeling, hives, or itchy lesions.

Are additional tests needed (e.g., culture, skin biopsy)?

In cases of suspected bacterial changes, covered with yellowish-murky discharge or visible pus, bacteriological cultures are performed to determine the type of bacteria that caused the infection. This is, of course, meant to guide the best choice of antibiotic. In the case of skin changes that look different from those known from most adverse effects of oncology drugs, we rely on skin biopsies and their microscopic evaluation by experienced pathologists/dermatopathologists in order to distinguish similarly appearing disease entities and make the best therapeutic decision. Diagnosis of skin diseases that develop especially during immunotherapy should be carried out in dermatology centers, as they specialize in the differential diagnosis of inflammatory skin diseases.

Of course, a biopsy is not the standard procedure, and oncologists very often, thanks to their experience as well as numerous trainings, know which skin changes occur during which oncological therapies. It is worth repeating that all skin changes should be reported to an oncologist or nurse in order to discuss further management, especially if oncological treatment is to be continued.

Can skin changes be an early signal of systemic complications that require urgent consultation?

Considering oncological treatment in a patient, which weakens them, they, like their surroundings, can suddenly fall ill with a viral or bacterial upper respiratory infection, develop shingles, or finally any other infection, especially during the autumn-winter period. In such situations, it is particularly important to adopt a conserving lifestyle, use antipyretic medications, and properly manage skin changes that may occur during these infections. In the case of severe skin changes, in the event of painful symptoms, in the case of a large area of skin involvement with accompanying malaise, i.e., weakness, fever, lack of strength, muscle pain, it is necessary to urgently contact a family doctor, oncologist, dermatologist, or go with family assistance with a referral to the hospital.

Please remember that cancer therapy directed against cancer cells also weakens the immune system and makes the patient particularly susceptible to the development of infectious and contagious diseases.

CARE AND TREATMENT

What are the recommended methods for protecting the skin and treating skin changes before and during oncological therapy (e.g., ointments, oral medications, phototherapy)?

Preparing the skin for oncological treatment is also an important element in ensuring good tolerance of oncological therapy and, consequently, its effectiveness. When it comes to skin care, three basic elements are mentioned:

- washing
- care
- photoprotection

Below is a detailed explanation of each of them

SKIN WASHING is a daily duty of every person. For an oncology patient, it is best done using a skin-friendly product. This means a product with acidic pH that does not contain detergents, fragrances, or allergens. In drugstores as well as in pharmacies, you will find various oils and micellar emulsions for washing, so-called soap-free cleansers, so that the daily activity of washing and contact with water does not dry out the skin. As for **SKIN CARE**, it is worth remembering that the skin is different in summer and different in winter. Its needs also vary in these seasons. They differ, of course, because of greater dryness in the autumn-winter period resulting from weather conditions and the fact that it is dry indoors. People also tend to take long and hot baths more often. Therefore, from the first day of oncological therapy, after washing, preferably after a shower with lukewarm water, it is worth applying emollients to the skin. These are easily absorbed, lightweight moisturizing preparations. If such preparations are ineffective or in the case of clearly dry and flaky skin, emollients should be replaced with creams. There are many emollient creams available in the pharmacy, and it is worth asking a pharmacist for help in selecting them. The prices of skin care preparations also vary, and their compositions are very specialized. In the case of dry, tight, peeling, and itchy skin, pharmacy-prepared products are recommended because they do not contain potentially irritating agents such as fragrances, preservatives, or alcohols. Balms are applied in a few spots on the skin in the form of a pea-sized amount squeezed from a tube or pump, and then spread over the entire area. What is also beneficial for moisturizing the skin is a certain type of exercise, which informs the patient about their strength, whether they feel physically capable, and if they have no shortness of breath. For certain inaccessible areas, such as the back, the help of another person is useful. Finally, **PHOTOPROTECTION**. A cancer patient is a patient who should protect themselves from the sun. This necessity arises from oncology treatment, which does not tolerate sun exposure, from sensitive skin during treatment, and from the fact that the body handles genetic mutations less effectively. The sun is recognized as an important causative factor in skin cancers. Photoprotection involves the use of so-called blockers, which are available in drugstores and pharmacies, with an SPF preferably above 50. They should be applied to uncovered and sun-exposed areas, and additionally, as a rule, sun exposure should be limited at least during peak sunlight hours, i.e., between twelve and two in the afternoon.

TREATMENT

Methods of treating skin changes during oncological therapy are very diverse. Oncologists very often have established protocols for such treatment. Therapy directed at the skin includes local treatment using drugs with anti-inflammatory effects from various groups, that is, topical glucocorticosteroids, antibiotics, immunomodulators, while ensuring proper hydration and gentle care.

As for oral therapy, depending on the skin changes, medications are used such as anti-inflammatory antibiotics, broad-spectrum antibiotics, antihistamines, anti-inflammatory drugs, systemic steroids, and drugs used in the treatment of chronic dermatological and rheumatological diseases. In cases of extensive skin damage or peeling, hospitalization in a dermatology center is indicated for intravenous treatment and monitoring of the patient's overall condition.

Do not hesitate to report any new skin changes to your oncology nurse or attending physician and do not ignore the worsening of skin changes. If the changes are worsening, it is evidence that they will not resolve on their own and are responding to the current treatment. They require either a change or intensification of treatment.

Which cosmetics and skincare products can I safely use during treatment?

The selection of cosmetics and moisturizing products during oncological therapy should be based on the principle that the "simpler" the composition, the better, and on the recommendations of dermatological or allergological societies in the case of sensitive red skin that reacts with burning and discomfort to over-the-counter products.

Cosmetics should not contain, in the case of patients undergoing oncological treatment, fragrances, alcohols, emulsifiers, and preservatives, or these ingredients should be present in the lowest possible concentration. Occlusive emollients based on paraffin and petroleum jelly are considered safe for the skin, but they are greasy and not all patients tolerate them well, especially men. This is why emollients containing oils of plant origin are lighter and better absorbed by the skin. These can be preparations based on aloe, containing allantoin, panthenol, or vitamin E.

It is important that after applying the preparation, the patient feels relief and skin relaxation, with soothing and anti-itch effects. There are also preparations that regenerate the skin and accelerate healing. You can find these in a pharmacy. They are based on the so-called sucralfate, often combined with zinc, manganese, and plant derivatives with antioxidant and anti-inflammatory effects. Such preparations are worth applying to areas that are particularly dry and painful, with skin cracks.

What should I avoid (e.g., sun, hot baths, certain cosmetic ingredients)?

An oncology patient undergoing cancer therapy should generally avoid sun exposure because their skin is sensitive, and if they get sunburned, it will be severe and take a long time to heal, with redness and skin peeling. For this reason, they should use blockers, preferably SPF 50, and avoid intense sun exposure. Hot baths are also not recommended for oncology patients because hot water dries out the skin and worsens inflammation. This is why showers are preferable for washing. In terms of skin care, oncology patients are advised against using moisturizing products that contain fragrances. Most of them can be irritating to the skin or even cause allergic reactions. Products containing alcohol are also avoided. Alcohol irritates the skin, dries it out, and increases cracking because it damages the so-called lipid barrier. As a rule, products with a long list of preservatives and emulsifiers in their composition are avoided. You will find such information about the composition on the packaging. The shorter this list is, the better the tolerance of the care preparation by irritated dry skin.

Can I use over-the-counter pharmacy preparations on my own – e.g., emollients, creams with urea, anti-itch preparations?

An oncology patient can definitely use over-the-counter pharmacy preparations to provide moisture to the skin, as well as to reduce certain discomforts resulting from sensitive skin, such as burning, tightness, or cracking. For this purpose, it is worth asking a pharmacist which emollients they recommend. Please remember that there are many specialized preparations available in pharmacies recommended for dry skin, atopic skin, psoriatic skin with abnormal scaling, or cracking.

As for urea, which has moisturizing, anti-fungal, and skin-softening properties, a small content up to 5% can provide the patient with moisture and softening of dry skin. .

Higher concentrations Urea preparations can have a burning effect on the skin and may not be well tolerated by damaged skin. Anti-itch preparations containing polidocanol, antioxidants, and panthenol are also available in pharmacies and are created with patients with chronic inflammatory dermatoses and intense itching in mind. These preparations can also be used in oncology patients in case of irritated skin causing discomfort. They are available in pharmacies without a prescription, and it is worth discussing their appropriate selection for the individual needs of the skin with a pharmacist.

PREVENTION AND CARE

How can I prevent dryness, itching, and cracking of the skin from the very beginning of therapy?

From the very first day of oncological therapy, a patient can prevent skin dryness, itching, and cracking. This can be done by using light, easily absorbed emollients that do not leave a greasy or sticky feeling on the skin, applying them immediately after washing to warm, still damp skin. Such skin care will certainly alleviate the occurrence of dry and cracking skin that appears during oncological therapy. In case of itching discomfort, one can use preparations that in dermatology are called hypoallergenic. These are available in pharmacies without a prescription and form the foundation for dermatologists in caring for people with atopy or psoriasis. In case of skin cracks, preparations based on sucralfate can be used – a compound that soothes and accelerates skin regeneration, containing zinc ions and other trace elements needed by epidermal cells for regeneration.

advise against disregarding any skin symptoms if they occur, because during therapy these symptoms and discomfort will only intensify. Please remember that the skin, as the largest organ of the body, can reflect, on one hand, the effectiveness of oncological therapy, and on the other, be a sign of its adverse effects. Therefore, promptly responding to the appearance of skin changes ensures better tolerance of the therapy, and consequently, higher effectiveness.

What is the importance of proper hydration and diet for skin

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A dehydrated patient, an emaciated patient is a patient who has thin, scaly skin, weakness, and intensified complaints with significantly impaired regenerative activity. An oncology patient should eat high-protein products rich in antioxidants. This is a meat-and-vegetable diet.

Can I use beauty treatments (e.g., manicure, waxing, massage) during treatment?

Oncology therapy, and particularly chemotherapy, and especially targeted therapy after a few weeks or months, may lead to damage to nails, hair, as well as nail folds. This is why it is generally advised against getting a manicure or pedicure during oncology treatment, in order to avoid damaging the tissue around the nail and causing long-healing skin injuries with painful inflammation. Additionally, wounds formed around the nails, when pressed against the soft, inflamed, and easily bleeding tissue, result in particularly long healing times and increased pain. This is the reason why, in case of changes on the feet, it is difficult to fit shoes to the inflamed nail folds of the big toes, and in the case of fingers, performing the simplest tasks such as combing or lifting thin delicate objects.

During cancer therapy, hair removal that causes tissue damage is also discouraged. This refers to laser hair removal, hair removal associated with plucking, waxing, or using other thermal methods to destroy hair. In the case of sensitive skin, which occurs during cancer therapy, shaving can be considered the safest method of removing unwanted hair. As for massage, it is better to use a gentler approach without special pressing or pulling of the skin, more based on acupressure.

Typical massages that increase blood flow to the skin and muscles should be postponed until the end of therapy. However, it is worth knowing that many rehabilitation procedures for patients with a history of cancer, even in remission, are not recommended.

Is it possible to use sunscreens – if so, which ones will be the safest?

As for photoprotection and various products containing blockers, one should use those recommended by dermatologists for inflamed and damaged skin. These products should be characterized by with a specific composition of physical filters, to a lesser extent chemical filters, and it is best to use filters that are recommended from the first months of a child's life. These preparations can be considered safe because a child's skin, similar to a patient undergoing oncological therapy, is sensitive and prone to the penetration of various chemical compounds. Therefore, the fewer components a filter preparation has, the better.

Oncological therapies can affect the condition of the skin. The skin becomes delicate, more prone to dryness, irritation, and damage to the protective barrier. Therefore, daily gentle care is crucial.

It is better to obtain products with sunscreen at pharmacies, and in case of doubts, ask pharmacists for their recommendations.

Area	What to do	What to avoid / what to watch out for
Hygiene	<ul style="list-style-type: none">• Use mild, fragrance-free gels and cleansing emulsions• Short, lukewarm baths• Dry the skin gently	<ul style="list-style-type: none">• Hot baths• Soapy salts, scrubs• Rough sponges
Moisturizing	<ul style="list-style-type: none">• Emollients 2–3 times a day• Hypoallergenic products• Barrier-repairing ingredients	<ul style="list-style-type: none">• Alcohol in cosmetics• Strong fragrances• Retinoids/acids without consultation
Hand protection	<ul style="list-style-type: none">• Hypoallergenic products• Barrier-repairing ingredients	<ul style="list-style-type: none">• Contact with detergents without gloves• Gel and acrylic nails
Sun protection	<ul style="list-style-type: none">• SPF 50+ daily• Hat, protective clothing	<ul style="list-style-type: none">• Tanning, solarium• Sun 11:00 a.m.–4:00 p.m.

Clothing	<ul style="list-style-type: none"> • Cotton, bamboo • Loose fits 	<ul style="list-style-type: none"> • Synthetics • Tight clothing
Depilation	<ul style="list-style-type: none"> • Electric shavers 	<ul style="list-style-type: none"> • Wax • Chemical depilatories • Shaving with a sharp razor
Skin barrier maintenance	<ul style="list-style-type: none"> • Quick response to dryness • Moisturizing compresses 	<ul style="list-style-type: none"> • Scratching irritated areas
Skin after radiotherapy	<ul style="list-style-type: none"> • Gentle care • Washing without rubbing • Ointments according to doctor's recommendations 	<ul style="list-style-type: none"> • Cosmetics before radiotherapy sessions • Sun exposure on the irradiated area
Scalp	<ul style="list-style-type: none"> • Gentle shampoos • Soft brush • SPF protection. 	<ul style="list-style-type: none"> • Hair dyeing • Hot styling • Aggressive cosmetics

EMOLIENTS are substances that lubricate and soften the skin, creating a protective layer on its surface that prevents water loss. Thanks to this, they soothe dryness, irritation, and support the regeneration of the hydrolipid barrier.



PSYCHOLOGICAL ASPECTS IN THE TREATMENT OF PATIENTS WITH LUNG CANCER



ADRIANNA SOBOL

Psycho-oncologist and lecturer at the Department of Oncological Prevention, Medical University of Warsaw. She works at the Holy Family Specialist Hospital in Warsaw. Co-author of the book "Taming Cancer: Inspiring Stories and a Guide to Emotions" (Znak, 2020). Author of numerous publications in the field of psycho-oncology and health psychology. She appears as an expert on television programs, co-creates social campaigns and activities, and conducts numerous training courses and workshops on psychology and personal development. Founder of the zdrowiezaczynasiewglowie.pl platform, which includes a podcast. President of the "W trosce o Klienta" Foundation, which supports people with chronic illnesses and promotes mental health in work and everyday life.

No one is prepared for this day. It always comes unexpectedly – that doctor's visit that was supposed to dispel all doubts. A persistent cough, shortness of breath, fatigue. And sometimes something you notice in the mirror: strange lumps on your fingers, changes in your skin. And suddenly you hear: "We see a lesion in your lung, it could be cancer, we need additional tests."

Something has spiraled out of control and has a specific name – lung cancer. Your thoughts begin to race, you conjure up various scenarios, you vacillate between hope and despair. You have the right to be afraid, cry, get angry, and feel helpless. No one is prepared for this disease.

EMOTIONS - UNDERSTANDING IN ORDER TO ACCEPT

Organizing your emotions is a difficult task, especially when they involve not only a threat to your life but also a loss of self-image. Recognizing the emotions you may experience will allow you to prepare for them and cope with them more easily. Elisabeth Kubler-Ross's theory distinguishes five stages of psychological reaction to the news of illness.

SHOCK AND DISBELIEVANCE

The first reaction is shock. In the case of lung cancer, it can be twofold – the diagnosis and the simultaneous realization that your body has already changed. You want to deny the disease, so you repeat tests and seek other specialists. This is a natural defensive reaction. However, be careful not to waste the precious time needed to begin treatment.

ANGER

After shock comes anger. You have the right to feel anger and rebellion, towards yourself, others, and the world at large. Anger at your own body, which has "betrayed" you not only through illness but also through changes in appearance, is especially difficult. Loved ones often expect courage and positive thinking, and you don't know how to achieve this. Expressing anger is difficult, but necessary; it needs an outlet.

FEAR

Anxiety appears initially and persists for the longest time. It's a response to a life-threatening situation. There's also an additional dimension: anxiety related to changes in appearance. You fear rejection by loved ones and wonder how strangers will react. These fears can be as paralyzing as the fear of the disease itself.

BARGAINING

This is the stage where you resort to magical thinking. You search for miracle ointments for skin lesions, diets that will reverse symptoms. This is the moment when it's easy to fall into the trap of people offering miracle solutions.

Before accepting such offers, verify the information with trusted specialists.

DEPRESSION

Depression can appear at any stage of the disease. Lung cancer and its visible symptoms are a crisis that exceeds your adaptive capabilities. You lose control over your health, but also over how you look and how others perceive you.

Depression isn't a blues, but a long-term mood disorder that robs you of the ability to function normally. It's a disease that requires treatment and shouldn't be ashamed of.

The main symptoms include:

low mood, lack of interest in the world, loss of joy, a sense of hopelessness, difficulty concentrating, low self-esteem, sleep disturbances, and loss of appetite.

Time is crucial. If symptoms persist from a few hours to a few days, it's likely a temporary mood disorder. If they last at least two weeks, seek help from a psychologist or psychiatrist.

Typical symptoms include:

- persistent low mood,
- lack of interest in the world and previous activities,
- feeling of hopelessness ("it doesn't make sense"),
- difficulty concentrating and remembering,
- low self-esteem, feeling of worthlessness

- sleep disturbances (insomnia or hypersomnia)
- appetite disturbances (loss of appetite or overeating)

RECONCILIATION

At the end of this path, we reach a state we call acceptance, although it's more accurate to call it reconciliation. It's difficult to accept something you didn't want. The road to this stage is long and winding. Overcoming it allows you to assume the role of a patient with full awareness, brings peace, and allows for a better understanding of yourself.

COPING WITH CHANGES IN APPEARANCE

Lung cancer often involves visible changes: on the skin, on the fingers, on the figure. Later, the effects of treatment add to this. It's a double burden – fighting for health while simultaneously coping with the loss of one's previous image.

SKIN CARE – CARE THAT GIVES RELIEF

Although you have no control over the disease itself or paraneoplastic changes, you can take care of your skin and comfort:

- Use gentle, fragrance-free cosmetics
- Moisturize your skin regularly
- Protect it from the sun (sunscreen, light clothing)
- Wear comfortable, loose-fitting clothes made of natural fabrics (cotton, linen) that do not irritate the skin

It's worth consulting a dermatologist who has experience working with cancer patients. Many skin lesions can be alleviated. This won't always restore the skin's former appearance, but:

- can reduce pain and discomfort
- give you the feeling that you have some control over something specific

SMALL DECISIONS THAT GIVE YOU A SENSE OF CONTROL

You can't control your illness. But you can control how you want to look and feel about yourself. If your hair falls out during chemotherapy:

- You can choose a wig, hat, scarf, or turban,
- You can go completely bareheaded, if that's how you feel best.

Makeup can help conceal some changes, but it's not mandatory. You can:

- experiment with a new style of clothing
- highlight what you still like about yourself
- completely focus on naturalness

The most important thing is that it's your choice, not peer pressure. It's about your comfort, not meeting other people's expectations.

Remember: Your value doesn't change with your appearance.

Your body bears the marks of struggle, but these are marks of courage, not failure. You don't have to go through this alone. A psycho-oncologist, dermatologist, doctors, nurses, support groups, foundations, and loved ones can stand by your side. Asking for help isn't vanity—it's a natural response to a very difficult experience.

TALKING WITH YOUR LOVED ONES – DON'T GUESS, TALK DIRECTLY

Loved ones often don't know how to react to your changes in appearance. They're afraid of saying the wrong thing and avoid the topic, even though they really want to help.

You can make it easier for them by speaking openly:

- "I know I look different. It's hard for me. Can we talk about this?"
- "Please see me as the same person, not just a sick person."

Specific requests work better than silently expecting someone to "figure it out":

- "Can you come with me to the hospital on Thursday?"
- "I need you to buy me some soft wipes and moisturizer."

- "Can you just sit with me today without talking?"

For loved ones, such tasks are often a relief – they finally know how to truly support you.

TREATMENT AND FURTHER CHANGES – HOW NOT TO GET LOST IN IT?

As treatment begins – chemotherapy, radiotherapy, targeted therapies – further changes may occur:

- Hair loss
- Nail changes
- Skin rashes and dryness, peeling, irritation
- Acne-like rash with some targeted therapies
- General weakness, weight loss, change in body proportions

All of this can have a profound impact on your self-image. Remember: in most cases, these changes are temporary. They gradually subside after treatment ends, although the body may need several months to recover.

ACTION PLAN – STEP BY STEP, ONE DAY AT A TIME

In a crisis, a good way to reduce anxiety is to create a simple action plan. It doesn't have to be perfect—it should help you, not burden you further. You can:

- Talk to your loved ones about how they want and can support you,
- Contact patient organizations – they often offer support groups, workshops, and consultations,
- Talk to other patients who are undergoing or have completed treatment – their experience can be a valuable source of hope and practical tips.

Building knowledge about the disease often helps you gain at least some control. But remember:

You can't compare yourself to other patients. Everyone has their own illness story – their own emotions, their own body, their own pace.

PREPARE FOR A CONSULTATION WITH A DOCTOR

A good working relationship with your doctor also provides psychological support.

It helps reduce anxiety and feelings of chaos.

Before your appointment:

- Write down all questions and concerns
- Note any symptoms – both breathing-related and changes in appearance
- Leave space for the doctor's answers

If you can, take someone you trust with you. A companion like this:

- reminds you of important questions
- notes down information
- helps you return to them calmly at home

Feel free to ask about appearance-related issues. You have the right to know:

- Are the changes typical of this disease?
- Can they be alleviated?
- What can you expect during and after treatment?

These are important questions, and the answers to them impact your mental well-being.

EVERYONE NEEDS SUPPORT

Anxiety, fear, sadness, and difficulty finding your way in a normal world are the feelings that accompany a person with the disease. When you also struggle with changes in appearance that make the illness visible, the emotional burden can be especially heavy.

There are no weaker or stronger individuals in the treatment process. Everyone needs support, each in a different form. This can include help from a psychologist, psychiatrist, loved ones, friends, and other patients.

You shouldn't feel embarrassed or ashamed to seek support. You can't think, "I'm weak because I can't cope on my own." Achieving peace is hard work, and the first step can only be taken by the patient. You have a choice – you can stay in a difficult situation or work to overcome it. Support can come from various sources:

- psychologist, psycho-oncologist, psychiatrist
- family and friends
- other patients
- patient organizations
- support groups

You shouldn't be ashamed of it. It's not a sign of weakness, but of self-care.

PROFESSIONAL SUPPORT

The most important source of support is a psycho-oncologist. This is an interdisciplinary field combining clinical psychology, psychiatry, oncology, and patient care. A therapist in this specialty accompanies the patient from the moment the disease is suspected, through treatment, and until its completion. They focus on the emotional reactions of the patient and their loved ones, including difficulties related to changes in appearance.

Ask your doctor or nurse about a psycho-oncologist. If such a specialist is unavailable on your ward, various foundations offer free consultations. You can also seek private support.

SUPPORT GROUPS

Connecting with other lung cancer patients can be an incredibly valuable experience. In a support group:

- You'll meet people who understand what it's like to see your body changed by illness,
- You don't have to explain "why you don't have the strength today" – others know this firsthand,
- You can hear stories from people who are still in the treatment process or have already had it.

This can give hope and show that:

You can get through this,
learn to live with your new appearance,
rebuild your self-esteem,
regain joy.
It's possible.

AND YOU CAN GET THROUGH THIS TOO –
AT YOUR OWN PACE, ON YOUR OWN
RULES, WITH THE HELP YOU TRULY NEED.

