LABORATORY TESTS RELATED TO NON-MELANOMA SKIN CANCER

This flyer gives an overview of the lab tests associated with screening for, diagnosing, treating, and monitoring skin cancer. It is not intended to serve as medical advice. Please consult your doctor if you have specific questions.

WHAT IS SKIN?

Skin is the body’s largest organ. It regulates temperature, protects against germs, and allows for the sense of touch.

SKIN IS MADE UP OF THREE LAYERS:

1. The **epidermis** is the outer layer of skin, providing protection and generating new skin cells. It is comprised of three types of cells: squamous cells, basal cells, and melanocytes.
   - Basal cells form the bottom of the epidermis and are constantly dividing to create new cells. As skin sheds, the new cells move toward the surface. As they reach the surface, they flatten out and become squamous cells.
   - Melanocytes are the cells that create melanin, the substance that gives skin its color.

2. The **dermis** is the inner layer of skin, containing collagen for elasticity, nerve endings for touch, and housing hair follicles, oil glands, and sweat glands.

3. The **subcutis** is the deep layer of fat that cushions muscles and bones, regulates temperature, and houses nerves and blood vessels.
WHAT IS SKIN CANCER?

Skin cancer develops when something causes skin cells to grow irregularly. The most common risk factor is exposure to UV light, like sunlight or tanning beds.

People of all races and skin colors can develop skin cancer, but historically there has been more research and documentation of how it presents in people with lighter skin. People with darker skin are often diagnosed later than their lighter-skinned peers, putting them at higher risk of complications. Doctors and scientists are working to better document how skin cancer develops in people of color to mitigate this.

THERE ARE THREE MAIN TYPES OF SKIN CANCER.

1. **Basal cell carcinoma** is the most common form of skin cancer. It develops in the basal cells, the cells that grow new skin cells.
2. **Squamous cell carcinoma** is the second most common form of skin cancer. It develops in the squamous cells, which are the cells that make up the outer part of the epidermis.
3. **Melanoma** is considered the most dangerous form of skin cancer because it is more likely than the others to spread to other parts of the body. It develops in the melanocytes, which are the cells that create melanin, the chemical that gives skin its color.

Additional rare forms of skin cancer include Kaposi sarcoma, Merkel cell carcinoma, and sebaceous gland carcinoma.

This flyer will focus on the diagnosis and treatment of basal cell carcinoma and squamous cell carcinoma. If you would like to learn more about melanoma, please reference our flyer: Laboratory Tests related to Melanoma.

COMMON SIGNS AND SYMPTOMS OF SKIN CANCER

The first sign of skin cancer is usually a change in the skin’s texture or appearance. Depending on the type of skin cancer, these changes can include the following:

- Pearly or waxy bumps on the face, ears, or neck.
- Flat pink, red, or brown patches or bumps.
- Scar-like areas on the skin.
- Crusty, depressed, or frequently bleeding sores.
- Wounds or sores that don’t heal or keep coming back.
- Rough, itchy, bleeding, and crusty lesions.

Doctors recommend the ABCDE rule to monitor skin for potentially dangerous changes:

- **A**symmetry: An irregularly shaped mole or growth.
- **B**order: A mole with blurry or irregularly shaped edges.
- **C**olor: A mole with more than one color.
- **D**iameter: A mole or growth larger than a pencil eraser (6 millimeters).
- **E**volution: Changes in shape, color, or size of a mole or growth.

Patients who observe any of these symptoms should talk to their primary care physician or a dermatologist. A dermatologist is a doctor that specializes in treating skin conditions and will closely check the patient’s skin for any irregularities or concerning growths.

UNDER THE MICROSCOPE

This picture demonstrates a basal cell carcinoma with nests of tumor cells arising from the basal layer of the epidermis, invading into the tissue beneath (dermis). The tumor cells have dark blue nuclei which are arranged in a palisading pattern at the edges of the nests - like a “picket fence”, which is characteristic of this tumor.

ASK YOUR DOCTOR

- Will the biopsy remove all of the lesion?
- What type of skin cancer do I have?
- What tests do I need before we can decide on treatment?
- Why do you suggest this treatment?
- What are the long-term effects of this treatment?
- What are my chances of developing another skin cancer?
- What steps should I take to prevent future skin cancers?
- What support services are available to me and my family?
LABORATORY TESTS RELATED TO DIAGNOSING SKIN CANCER

If a dermatologist finds a growth that may be cancerous, they will perform a biopsy. They will numb the area and then remove a skin sample. The sample will be sent to a lab, where a pathologist will look at it under a microscope. There are three types of biopsies that are used to diagnose skin cancer.

PUNCH BIOPSY: The doctor uses a tool called a biopsy punch to remove a small circular piece of skin.

SHAVE BIOPSY: The doctor uses a razor blade to remove the top few layers of skin.

EXCISIONAL AND INCISIONAL BIOPSIES: The doctor uses a scalpel to remove a tumor that has grown deeper in the skin. They usually remove the entire growth, which is called an excisional biopsy. In some cases, they may only remove part of the growth, which is an incisional biopsy.

After examining the biopsies, the pathologist will make a diagnosis and grade the tumor.

NON-MELANOMA SKIN CANCER STAGING

- **STAGE 0**: The tumor is only in the top layer of skin.
- **STAGE I**: The tumor is in the top (epidermis) and middle (dermis) layers of skin and less than 2 cm. There is no evidence of spread.
- **STAGE II**: The tumor is in the top and middle layers of your skin and is larger than 2 cm. There is no evidence of spread.
- **STAGE III**: Cancer has spread beyond the skin to nearby lymph nodes.
- **STAGE IV**: Cancer has spread to farther lymph nodes or organs like the liver, lungs, or brain.

The pathologist will also check to confirm that the entire cancer was removed or if there are cancer cells on the edges (margins) of the sample. No additional treatment may be needed if the biopsy removed the entire cancer. If there is cancer in the margins, additional treatment will be needed.

ADDITIONAL RESOURCES

Scan the QR code to view and download our educational resources.

Scan the QR code to hear directly from our Champions.

For more information and to get involved: www.ascp.org/patients

Skin Cancer can affect people of all genders. The terms “female” and “woman” are used to refer to people assigned female at birth. In this material, the terms “male” and “man” are used to refer to people assigned male at birth.