ARE YOU **AT RISC**?

Reduce the Incidence of Skin Cancer After Organ Transplantation

AT-RISC ALLIANCE
After Transplantation–
Reduce Incidence of Skin Cancer

Solid organ transplant recipients are up to 65 times more likely to develop skin cancer than people without transplants. While skin cancer is a potentially preventable disease, and most easily treated when caught early, serious skin cancer can reduce the quality of life for organ recipients and even cause death. This brochure provides information on the increased risk of skin cancer in organ transplant recipients, ways to reduce this risk, and the importance of early detection and treatment of skin cancer.

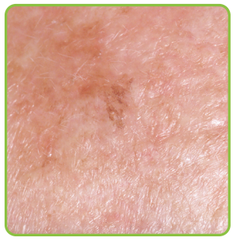
Why Are Organ Transplant Recipients at Increased Risk?

The immunosuppressive medications necessary for the survival of your transplanted organ suppress your immune system in order to prevent your body from rejecting the transplanted organ. However, by suppressing the immune system, these medications also increase the risk of skin cancer as well as other cancers and infections. Researchers are working on novel medications that would lessen the risk of cancer and infections as a result of immunosuppression.

What Does Skin Cancer Look Like?

Skin cancer is the most common of all cancers, with over one million skin cancers diagnosed in the United States each year. Usually, a precancerous condition called an "actinic keratosis" or "AK" precedes the development of a skin cancer. Learning the characteristics of an actinic keratosis and the three most common forms of skin cancer is important to staying healthy. Actinic keratosis and the three types of skin cancer are described to the right:

Actinic Keratosis



Actinic keratoses are considered "precancers," and have the potential to turn into squamous cell carcinomas. Actinic keratoses appear as small pink or red spots with a rough surface, usually on sun-exposed areas. They may be more easily felt than seen. Early treatment of actinic keratoses can prevent their transformation into more serious squamous cell carcinomas. Actinic keratoses are usually treated with cryotherapy (freezing with liquid nitrogen) or by application of chemotherapy or immune enhancing cream.

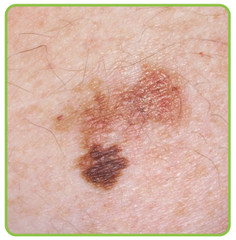
Basal Cell Carcinoma

Basal cell carcinoma is the most common in the general population and usually appears as a small, pink bump or patch on the head or neck, although it may occur on any part of the body. If untreated, the area will begin to open, bleed, or crust repeatedly. Basal cell carcinomas grow slowly but rarely spread to other parts of the body. However, if left untreated, basal cell carcinomas can cause extensive damage to the area involved.

Squamous Cell Carcinoma

Squamous cell carcinomas are the most common skin cancers in organ transplant patients. Squamous cell carcinoma is 65 times more common in transplant recipients than in the general population. Squamous cell carcinomas can look similar to basal cell carcinomas, but are usually more scaly and stick out further from the skin's surface. Squamous cell carcinomas often occur on the head and neck, and have a special tendency to grow on the ears, lips, and the backs of hands and arms. If treated early, squamous cell carcinoma is curable. However, if the tumor invades deeply, it can spread to the lymph nodes, which then must be removed. If treatment is unsuccessful, squamous cell carcinoma spreads internally and results in death.

Malignant Melanoma



Melanoma is four times more common in organ transplant recipients, than people without transplants. Unlike squamous cell carcinoma and basal cell carcinoma, malignant melanoma usually appears as an irregular brown spot or changing mole. Melanoma can arise from normal skin or from a mole, which has turned bad. If caught early, melanoma is usually curable. However, if it spreads to other parts of the body, it can result in death.

How Frequently Does Skin Cancer Develop After Organ Transplantation?

After you receive a transplant, there may be a lag time of five to seven years before skin cancers begin to develop. This period may be longer or shorter depending on individual risk factors. If you are older when you receive your transplant, skin cancers may develop soon after transplantation. The longer a person takes immunosuppressant medication and the higher the dose, the greater the risk of skin cancer.

Most transplant patients develop a limited number of skin cancers, which can be easily cured if recognized early. However, among organ transplant recipients, there is a smaller group of patients that develop skin cancers in a frequent and alarming fashion. Some high-risk transplant patients will develop more than 100 skin cancers per year, with an increased risk of the cancers spreading into the lymph nodes and other parts of the body.

Am I at Increased Risk for Skin Cancer?

All transplant patients, regardless of skin color, are more susceptible to skin cancer than people without transplants. In fact, transplant recipients are 65 times more likely to develop skin cancer than non-transplant recipients. However, transplant patients with the following characteristics are at significantly increased risk for skin cancer:

- Fair or easily burned skin
- Extensive freckling
- Blue, green or hazel eyes
- Red or blonde hair
- Outdoor occupation or history of extensive sun exposure
- Family history of skin cancer
- Personal history of skin cancer

For high-risk transplant patients, skin cancer can become a severe problem. Repeated surgeries for skin cancer can significantly decrease one's quality of life due to significant scarring, sometimes affecting appearance. When skin cancer severely affects an organ transplant patient, immunosuppressant medications may be reduced or changed and preventative medications, such as retinoids, may be administered.

What Can I Do to Reduce My Risk?

Before and after receiving an organ transplant, you should discuss with your medical team the dangers of skin cancer and how to prevent it as you cope with your organ transplant. Following the Skin Care Steps below is a good start toward helping to prevent skin cancer:

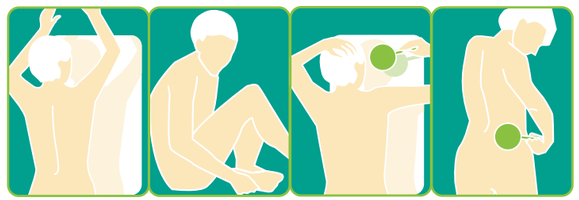
1. Practice sun protection

The following protective measures will help you enjoy outdoor activities in a "safer and smarter" way:

- Apply a broad-spectrum sunscreen, with a high sun protection factor (SPF) of at least 30, which protects against UVA and UVB. (UVA and UVB refer to light rays that are damaging to the skin.)
- Use sunscreen everyday to all exposed areas especially your head and neck areas and backs of hands and forearms.
- Make a habit of sunscreen application, applying sunscreen as part of your morning bathroom routine. People with an oily complexion may prefer an alcohol-based or gel sunscreen.
- Reapply sunscreen every two hours when outdoors, especially if you are swimming or sweating.
- Wear protective, tightly woven clothing, including long-sleeved shirts and pants, sunglasses and a broad-brimmed hat (brims should be at least four inches wide).
- Plan outdoor activities to avoid sun exposure between 10:00 a.m. and 4:00 p.m., when the sun's rays are the strongest.
- Avoid commercial tanning booths.
- Because vitamin D is produced by sun exposure, it's a good idea to take 500 units of vitamin D per day.

2. Perform self-skin examinations and see a dermatologist

Self-skin examination — Examining your skin monthly for precancers and skin cancers can be a lifesaving habit. During a monthly self-skin exam, you should look for any new or changing growths including pink patches or spots, scaly growths, bleeding spots, or changing moles.



Skin examination by a physician — Your transplant physician should examine your skin during your annual evaluation or refer you to a dermatologist. If you are developing precancers or are a high-risk patient, then a regular full skin examination by a dermatologist can be helpful, which involves an examination of the entire surface of your skin. A dermatologist may be able to notice suspicious growths and spots before they become apparent to you. High-risk patients may need to be followed by a dermatologist as often as every one to two months for optimal care.

3. Seek early treatment

If you notice a new, changing or suspicious growth during your self-skin examination, contact a dermatologist or a member of your transplant team to receive prompt evaluation.

4. Use preventative medications

For patients who are at high risk of developing skin cancer, various preventative strategies, including creams, skin treatments and oral medications, can be employed to reverse precancers or lessen the risk of cancer development. Your dermatologist can discuss these with you.

How Is Skin Cancer Treated?

If caught early, skin cancer is almost always curable.

Basal cell carcinomas and squamous cell carcinomas can be treated with a variety of methods including creams or scraping and freezing for early skin cancers and surgical removal for more advanced cancers. Mohs micrographic surgery is a special surgical procedure used to assure the complete removal of a skin cancer, while sparing normal skin.

Although the surgical removal of skin cancers inevitably leaves scars, appearance can usually be restored to a high degree after skin surgery. In special situations your dermatologist may recommend radiation therapy or lymph node operations.

How Can I Get Started?

Close Surveillance of Your Skin is Important

For transplant recipients, the most important aspect for skin care is the regular examination of your skin. For high-risk patients, your physician may recommend that you receive a skin examination as often as every two months to identify and treat skin cancers at the earliest stages. (This would be in addition to monthly self-checks.) In some cases, this close follow up can be the key to maintaining your health.

You are the Key!

Understanding that you are at increased risk for skin cancer, using effective sun protection methods, knowing how to recognize possible skin cancers, and seeking prompt treatment can literally save your life.

Need more information?
Go to www.AT-RISC.org.

Supported by an unrestricted educational grant from Connetics Corporation

AT-RISC (After Transplantation – Reduce Incidence of Skin Cancer) ALLIANCE. A joint effort of the:

connetics ITNS ITSCC INTERNATIONAL TRANSPLANT SKIN CANCER COLLABORATIVE TRIO