



Helping You Understand **Cutaneous Squamous Cell Carcinoma (cSCC)**

A Patient Guide



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5 LANGUAGES

This guide is provided free of charge by Melanoma Canada.

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Acknowledgments

We would like to acknowledge and thank the following individuals who provided their expertise and review for the development of this guide:

- **Annette Cyr**, Honorary Chair & Founder, Melanoma Canada
- **Dr. Marcus Butler**, Assistant Professor, Princess Margaret Cancer Centre,Toronto, Ontario
- **Dr. Cheryl Rosen, MD, FRCPC**, Head, Division of Dermatology Toronto Western Hospital and University Health Network Hospitals, Professor University of Toronto
- **Dr. Julia Carroll, FRCPC** – Compass Dermatology, Toronto, ON
- **Dr. Xinni Song**, Associate Professor, The Ottawa Hospital Cancer Center.



Importance of the Skin

Your skin plays an important role in your body. In fact, your skin is the largest organ of your body, covering its entire surface. Skin is a protective layer that has many jobs:

- Skin is the first line of defense against injury and infection. Healthy skin is a large part of the immune system and helps prevent infection, recognize allergens, and repair damage as it happens.
- Skin prevents the body from losing water and drying out. This is important as your body is mostly made up of water.
- Skin protects you from heat. Sweat glands release sweat, which cools the skin.
- Skin helps make vitamin D.
- Skin protects you from damage that can be caused by **ultraviolet (UV) radiation**. The sun, sunbeds, and sunlamps make UV radiation.



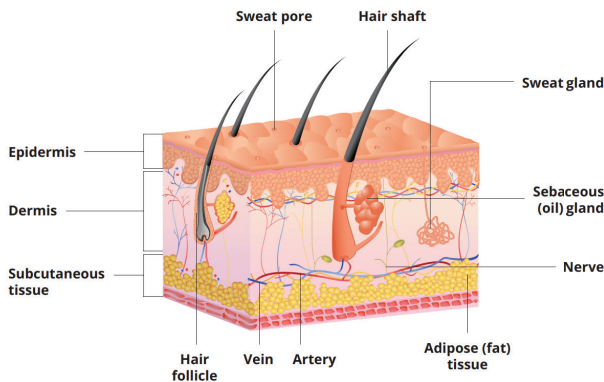
WATCH OUR cSCC VIDEO

Layers of the skin

The skin is made up of 3 main layers: the epidermis, the dermis and the subcutaneous tissue.

Epidermis: The **epidermis** is the thin top layer of skin you can see. Several cell types make up the epidermis. Cells are the tiny, microscopic building blocks that make up tissues, such as skin.

Melanocytes are pigment cells in the bottom of the epidermis. They make **melanin**, the pigment that gives your skin its colour. When your skin is exposed to UV light, melanocytes make more melanin to try to protect your body from damaging radiation.



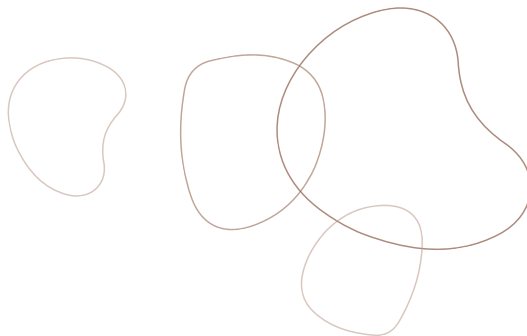
Dermis: The dermis is a thick layer below the epidermis. The dermis contains several types of cells and structures:

- **Blood vessels** carry nutrients and oxygen to your skin and remove waste products.
- **Lymph vessels** return blood plasma (the liquid part of blood) from your tissues to your heart.
- **Sweat glands** make sweat that helps to cool your body.
- **Sebaceous glands** make sebum, an oily substance that helps protect skin from drying out.
- **Connective tissue** surrounds these structures and holds them in place. It also allows your skin to stretch.
- **Hair follicles** make your hair

Subcutaneous tissue: is beneath the dermis and:

- Attaches skin to the muscle underneath.
- Contains connective tissue and fat that stores energy and body heat.

- 2 • Absorbs shock to protect your body



What Is cSCC?

Cutaneous squamous cell carcinoma (cSCC) is a common form of skin cancer that develops in squamous skin cells that make up the outer (epidermis) layers of the skin. Squamous skin cells are more commonly called keratinocytes and cSCC may be called a keratinocyte cancer (carcinoma). The majority of cSCC develops as a result of long-term and prolonged exposure to the ultraviolet (UV) rays from the sun or from tanning beds or lamps. Consequently, cSCC is usually found on areas of the body exposed to UV rays such as the face, neck and the backs of the hands.

When cSCC is found very early and only in the epidermis, it is called cSCC in situ. It may also be called Bowen's disease or intraepidermal cSCC. The good news is it is much easier to treat effectively at this early stage. When cSCC is caught early and removed, over 90% of people are cured, and it rarely spreads to other distant areas of the body. So it is a cancer that is relatively easy to treat.

However, cSCC may spread and become invasive if not treated. This means that the cancer can grow into nearby tissue or deeper layers of skin.

Read more:

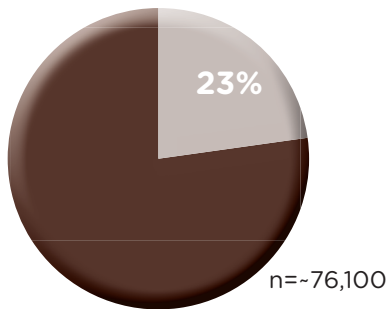
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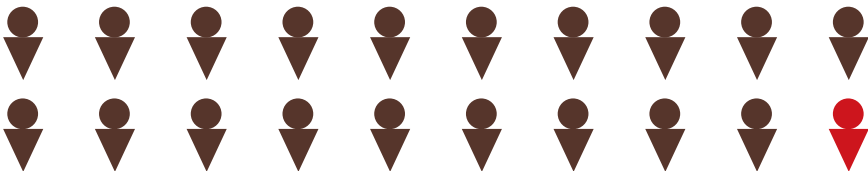
Who Gets cSCC?

Non-melanoma skin cancer is the **most common** cancer diagnosed in Canadians

Of the estimated **76,100** Canadians affected by non-melanoma skin cancer annually, approximately **23% are diagnosed** with cSCC¹



1 in 20 Canadians will develop cSCC in their lifetime¹



cSCC – Know The Causes & Risk Factors

It is important to know the causes and/or risk factors of developing cSCC.

- Some of your **physical traits** might put you at greater risk of developing cSCC – such as having fair skin, blonde or red hair, light-coloured eyes, or a tendency to develop freckles.
- cSCC is most often diagnosed in the **older population** due to years of accumulated sun damage.
- Some of your **previous activities** may also put you at greater risk of developing cSCC – such as the use of tanning beds and bulbs, time spent outdoors or working outdoors (exposed to the sun's UV rays), a history of sunburns or suntanning, having long-term exposure to cancer-causing chemicals (such as arsenic in the water). People who work outdoors are also at higher risk. Men are also more commonly diagnosed, likely due to UV exposure on unprotected skin.
- Your **medical history** may also contain risk factors for cSCC – such as a history of precancerous skin lesions (actinic keratosis or Bowen's disease), a history of skin cancer, a weakened immune system (including having HPV, HIV, or AIDS, or having undergone organ transplants), medications that suppress the immune system, being exposed to radiation, or having a rare genetic disorder called xeroderma pigmentosum, which causes an extreme sensitivity to sunlight.

The leading cause of cSCC is **excessive UV radiation exposure** from either the sun or tanning beds.

Symptoms & Presentation of cSCC

What does cSCC look like?

cSCC typically presents itself as:

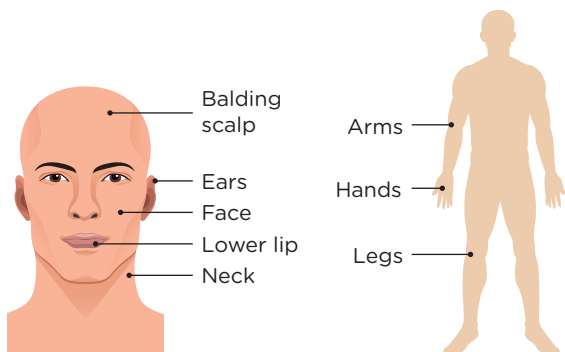


- A bump or lump on the skin that can feel rough; when it grows, it may become crusty, dome-shaped and can bleed.
- Scaly red patches (Bowen's disease).
- Open sores that don't heal, or that heal and return.
- Elevated growths with a central depression.
- Lips that feel dry constantly and may have whitish colour, lumps or feel scaly.

All of these may additionally crust or bleed. The skin surrounding them also typically shows signs of sun damage, such as wrinkling, pigment changes, freckles, age spots and loss of elasticity.

Where does cSCC occur?

cSCC can occur on all areas of the body but is most often seen on areas of the body that are frequently exposed to the sun or UV rays. The most commonly affected areas include:





How Is cSCC Diagnosed?

To confirm a diagnosis of cSCC your doctor will perform standard tests and procedures including:

- **Physical exam**
 - Your doctor will examine your skin for signs of cSCC. Your doctor will check the size, shape, colour, and texture of the spot on your skin.
 - Your doctor will also ask you questions about your medical and health history, such as your history with sunburns or tanning beds, any pain or symptoms you feel, and when you first noticed that the spot had appeared.
- **Removing a sample of tissue for testing (biopsy)**
 - If your doctor thinks the lesion looks suspicious, in order to accurately confirm a diagnosis of cSCC, they will perform a biopsy of the skin lesion.
 - A biopsy is when your doctor uses a tool to cut away some or all of the suspicious skin lesion and sends the skin tissues to a laboratory for testing.



How Does my Doctor Choose my Treatment?

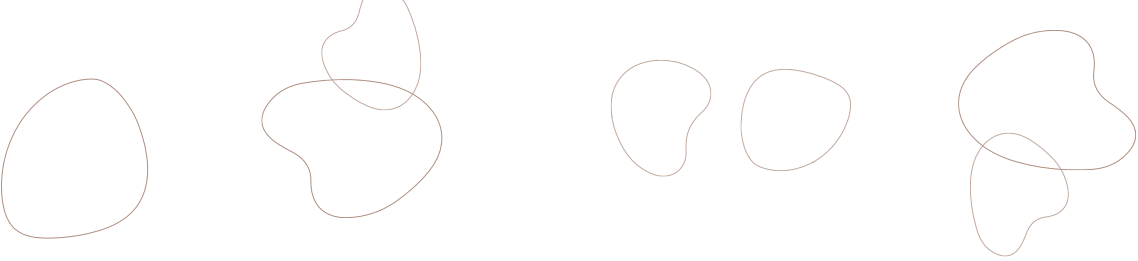
Following the results of your physical exam and biopsy, your doctor will determine the best treatment options for you. Doctors often use the following risk groups to estimate the chance that the cancer may come back (recur) and help plan the best treatment.

Doctors classify most cSCC into these risk groups based on several prognostic factors, including the size of the cancer and where it is located (for example, head, neck, eyes, lips or is it on arms, legs or back). Fortunately, the majority of cSCC is caught early and treated very effectively through surgery.

Staging cSCC

When all surgical and any imaging tests have been completed and pathology reports have been received, the doctors will try to figure out if the cancer has spread, and if so, how far. This process is called staging. It helps determine how serious the cancer is and how best to treat it.

A preliminary **clinical stage** is assigned after the physical examination and initial biopsy. The final pathology report determines the **pathologic stage** and helps to determine the treatment options. These two stages can be different, but they will not change once they are defined. This is because the stage at diagnosis is important for evaluating treatment options, prognosis, and survival.



The stages of cSCC are based on several factors. The staging system used for cSCC of the head and neck is the American Joint Committee on Cancer (AJCC) TNM system, which is based on **3 key pieces of information**:

T (tumour) What is the size and extent of the main tumour?

N (lymph node involvement) Has the cancer spread to nearby lymph nodes?

M (metastasis) Has the cancer spread to distant lymph nodes or distant organs?

Each letter is then assigned a numerical value which has more details about the cancer associated with it. The results of this analysis are grouped into five stages (0, I, II, III, and IV).

STAGES 0-IV

The staging system outlined below uses the pathologic stage. We have provided a simplified version of the latest TNM system as of January 2018. It is important to know that cSCC cancer staging can be complex. If you have any questions about the stage of your cancer or what it means for your treatment, ask your doctor to explain it in a way you understand.

cSCC has five stages: 0, I, II, III, IV

- **Early cSCC** is defined as stage I and stage II disease.
- **Advanced cSCC** is defined as stage III and stage IV disease.

Stage 0

- The tumour has not spread beyond the top layer of the skin (epidermis). The cancer has not spread to nearby lymph nodes or distant organs.

Stage I

- The tumour is smaller than or equal to 2 cm. The cancer has not spread to nearby lymph nodes or distant organs.

Stage II

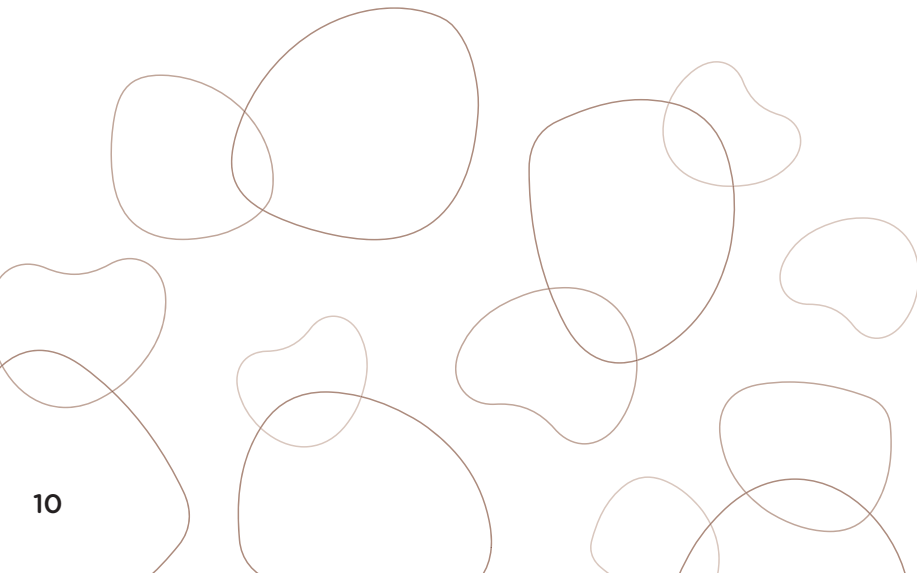
- The tumour is between 2 and 4 cm. The cancer has not spread to nearby lymph nodes or distant organs.

Stage III

- Stage III cSCC is diagnosed if any of the following are true:
 - The tumour is larger than 4 cm.
 - The tumour has slightly worn away nearby bone (bone erosion).
 - The tumour has grown into or around nerves (perineural invasion).
 - The tumour has grown deep, past the fat under the skin (deep invasion).
 - The cancer has spread to 1 lymph node that is 3 cm or smaller.

Stage IV

- Stage IV is diagnosed if there is substantial invasion of the bone, even in the absence of lymph node involvement or distant metastases.
- Stage IV is also diagnosed regardless of the size of the tumour if the cancer has spread to at least one lymph node that is larger than 3 cm.
- Stage IV is also diagnosed regardless of tumour size or lymph node involvement if the cancer has spread to distant organs (distant metastasis).



How Is cSCC Treated?

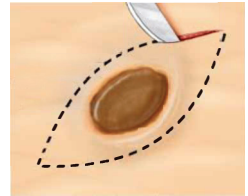
Surgery

All stages of cSCC are usually treated with surgery. There is a very high rate of cure for cSCC with surgical treatment. The treatment option that is best for you will depend on the size, location and aggressiveness of the tumour. If your skin lesion is left untreated, it may continue to grow, which can cause damage to surrounding tissue. The cancer can even spread to other parts of your body and in rare cases, can lead to death. cSCC that has spread can now be treated with immunotherapy.

Surgical Treatments

- **Simple excision**

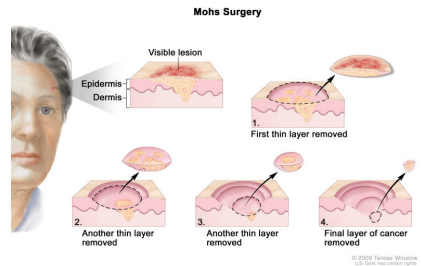
- This procedure involves your doctor removing the cancerous tissue and a surrounding margin of healthy skin. In some cases, your doctor may recommend removing additional normal skin around the tumour. This is known as a wide excision. Simple excision is a standard procedure for squamous cell skin cancers.



- **Mohs surgery**

- Mohs surgery is most often conducted for cSCC on the head or neck. During this procedure, your doctor removes the cancerous tumour and some of the surrounding tissue underneath. Your doctor then examines the margins around the excised tissue under a microscope to see if there are any other cancerous cells remaining. The procedure is repeated until clear margins are obtained.

- This procedure allows the surgeon to be sure that the entire growth is removed while avoiding removing an excessive amount of surrounding healthy skin.
- This form of surgery has the highest rate of success in treating cSCC, and is often used to treat large, recurrent tumours or tumours located in difficult-to-treat areas such as the face, eyes, ears, nose, hands, feet and shins, sparing as much normal tissue as possible.



Superficial Treatments for Early Stage Disease

cSCC is usually treated with surgery. However, early stage cSCC is often treated effectively through topical treatments that treat the top layer of the skin. Treatments for early stage disease (cSCC in situ, Bowen's disease) may include topical chemotherapy creams or gels, cryotherapy, or photodynamic therapy (PDT).

The treatment option that is best for you will depend on the size, location and aggressiveness of the tumour. If your skin lesion is left untreated, it may continue to grow, which can cause damage to surrounding tissue. The cancer can even spread to other parts of your body and in rare cases, can lead to death.

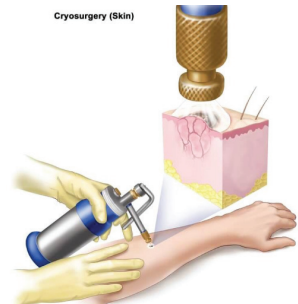
Local Treatments

- **Topical chemotherapy**

- These are medicines that are put directly on the skin as a cream or gel (called topical).
- The drugs most often used in topical treatment for cSCC are 5-FU (Efudex, Actikerall), ingenol mebutate (Picato) and imiquimod (Aldara, Zyclara). These drugs are used according to various protocols, as recommended by your health care provider.
- When put directly on the skin, these topical chemotherapies kill tumor cells on or near the skin's surface, but they can't reach cancer cells deeper in the skin or cells that have spread to other organs. For this reason, they are generally used only for precancerous conditions such as actinic keratosis and for early stage superficial skin cancers.

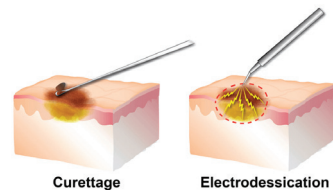
- **Cryosurgery or cryotherapy**

- Cryosurgery for early stage in situ disease uses liquid nitrogen to freeze the cancerous cells. It burns during treatment, causing the area to blister and then scab over in 1 to 2 weeks.



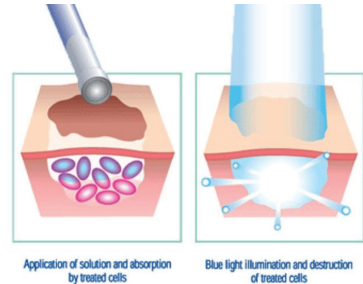
- **Electrodesiccation and curettage (ED and C)**

- ED and C treatment involves removing the surface of the visible tumour with a scraping instrument (curette) and then searing the base of the wound with an electric needle. This is intended to kill off any remaining cancer cells and help to stop the bleeding.



Photodynamic Therapy (PDT)

- This treatment combines photosensitizing drugs and light to treat superficial skin cancers.
- During this procedure, a liquid or cream drug that makes cancer cells sensitive to light is applied to the skin. Following this, a light that destroys the cancer cells is shined on the prepped area.

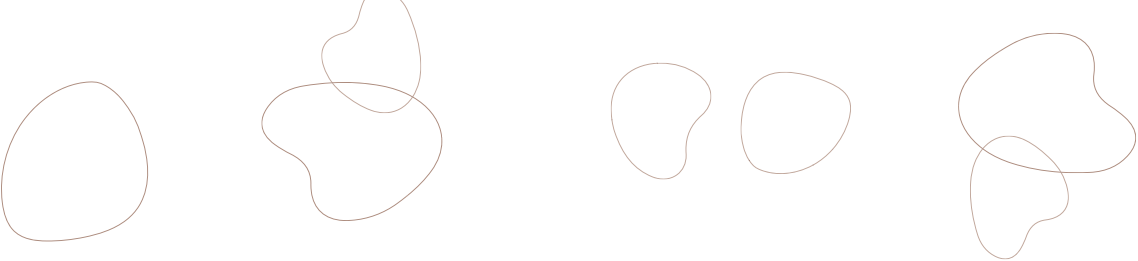


Radiation Therapy

- This treatment uses high-energy beams to kill cancer cells or slow their growth by damaging the cancer cells' DNA. Cancer cells whose DNA is damaged beyond repair will stop dividing or die.
- This may be an option for treating deeper tumours, or those that have a risk of becoming recurrent (coming back after treatment). It may also be used in people who are not candidates for surgery.

Intralesional Therapy

- Intralesional treatment for cSCC involves injecting therapeutic agents directly into the tumor, serving as an alternative to surgery for patients with non-operable, multiple, recurrent, slowly growing tumors. Common agents include 5-fluorouracil (5-FU) and methotrexate (MTX). There are emerging evidence supporting the use of intralesional immunotherapy and virotherapy.



Systemic Drug Therapy

Systemic drug therapy is often used in advanced or metastatic cases of cSCC. Systemic therapies are drugs that spread throughout the body to treat cancer cells wherever they may be. They have many different forms such as chemotherapy, targeted drugs, and immunotherapy.

- **Chemotherapy**

- Chemotherapy has been used to treat cSCC, but it is not very effective and there is no standard chemotherapy regimen for non-melanoma skin cancer.

- **Immunotherapy**

- Immunotherapies are a new class of drugs that have been developed to stimulate a person's own immune system to recognize and destroy cancer cells. Immunotherapies act to release the brakes, or checkpoints, of the immune system, allowing it to mount a stronger and more effective attack against cancer cells. These drugs are usually given intravenously in hospital or specialized clinic.
- Currently, the immune checkpoint inhibitor cemiplimab (Brand name Libtayo) was approved in Canada for the treatment of adult patients with metastatic or locally advanced cSCC who are not candidates for curative surgery or curative radiation.

Recently, new clinical trial data showed improved disease free survival (DFS) with preventive cemiplimab compared to placebo among patients with high risk cSCC post-surgery. This could be a treatment option for eligible patients' post-surgical resection.

Questions to Ask Your Doctors

Questions about your diagnosis, treatment and prognosis

- What stage is my cSCC?
- What treatments are recommended for my stage of cSCC?
- Does my age, health or other medical conditions affect my treatment options?
- How long will surgery take and what is involved?
- Will the surgery be painful?
- Will I have any scars or disfigurement and if so, how can it be corrected, if at all?
- Will I need follow up appointments?
- How will I care for the wounds?
- What are the risks and benefits of each treatment?
- Where will I be treated? Do I need to stay in hospital or can I go home after each treatment?
- What should I do to prepare for treatment?
- When can I start treatment?
- What is my chance of being free of cSCC after treatment?
- What side effects should I watch for during treatment?
- When can I resume my normal activities?
- What is the chance my cancer will return or spread?
- What do I do after treatment is finished?
- Can I get a copy of my pathology report and other test results?
- Are there any drug treatments I should consider to keep the cSCC?

Notes

You Are Not Alone

If you are in need of support, more information, or if you wish to speak with a patient care specialist, contact Melanoma Canada as follows:

Phone and Email Support

- Available Monday to Friday, 9 am to 5 pm ET. We aim to respond to all inquiries within 48 hours.
- All calls and emails are confidential.
- For support or further information, please reach us at:
Phone: **905-901-5121** or **1-877-560-8035**
Email: **support@melanomacanada.ca**

Cancer Coaching

- Meeting with a Cancer Coach can provide one-on-one support to help identify areas of desired change, set goals and make an agreed upon plan to work towards that change. Three key areas a Cancer Coach can help with include: emotional, physical and practical aspects that present during cancer diagnosis, treatment, and management.
melanomacanada.ca

Virtual Skin Cancer Support Group

- Led by Melanoma Canada, these informal meetings are a great opportunity to share information, understanding, challenges, questions and insights. Groups are free and held the first Wednesday of every month. For more information or to register, visit **melanomacanada.ca**

Virtual Caregiver Support Group

- Led by Melanoma Canada, these informal meetings are a great opportunity to share information, understanding, challenges, questions and insights. Groups are free and held once a month. For more information or to register, visit **melanomacanada.ca**



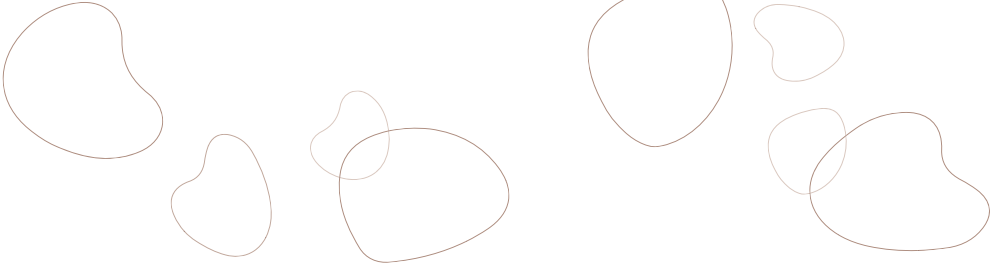
scan the QR code to
view our full list of
support services

Helpful Resources

For more detailed information about cSCC, please see our website, [melanomacanada](https://melanomacanada.ca)

- **How to prevent skin cancer**
- **Sun safety**
- **How to properly examine your skin for skin cancer**
- **How to prepare for/questions to ask during your appointments**
- **Non-melanoma skin cancer**





Additional Resources

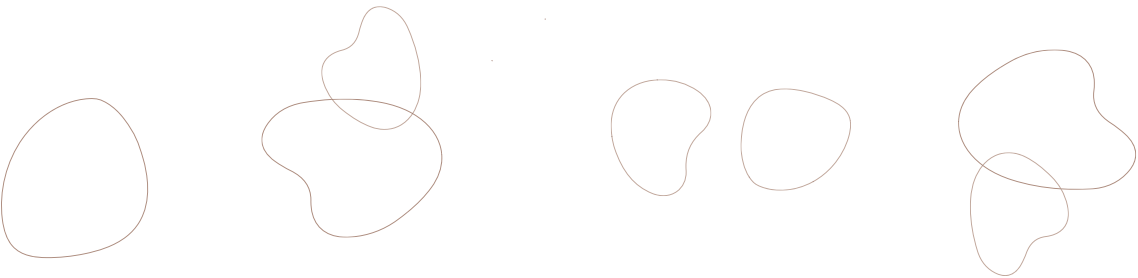
You can also find additional information about cSCC at:

- **American Academy of Dermatology**
 - <https://www.aad.org/public/diseases/skin-cancer/squamous-cell-carcinoma>
- **American Cancer Society**
 - <https://www.cancer.org/cancer/basal-and-squamous-cell-skin-cancer.html>
- **Canadian Cancer Society**
 - <https://www.cancer.ca>
- **Canadian Dermatology Association**
 - <https://dermatology.ca/>
- **National Comprehensive Cancer Network**
 - https://www.nccn.org/patients/guidelines/squamous_cell/
- **Skin Cancer Foundation**
 - <https://www.skincancer.org/>



References

1. Canadian Cancer Society. "Types of non-melanoma skin cancer." Available at <https://www.cancer.ca/en/cancer-information/cancer-type/skin-non-melanoma/non-melanoma-skin-cancer/types-of-non-melanoma/>. Accessed July 19, 2019
2. Canadian Cancer Society. "Risk groups for non-melanoma skin cancer." Available at <https://www.cancer.ca/en/cancer-information/cancer-type/skin-non-melanoma/prognosis-and-survival/risk-groups/>. Accessed July 19, 2019
3. Canadian Cancer Society. "Treatments for non-melanoma skin cancer." Available at <https://www.cancer.ca/en/cancer-information/cancer-type/skin-non-melanoma/treatment/>. Accessed July 19, 2019
4. Public Health Agency of Canada. "Melanoma Skin Cancer." Available from: <https://www.canada.ca/en/public-health/services/chronic-diseases/cancer/melanoma-skin-cancer.html>. Accessed July 19, 2019.
5. Melanoma Canada. "Non-melanoma Skin Cancer." Available at www.melanomacanada.ca. Accessed April 23, 2019
6. Hoffman, Matthew. "The Skin" Available at <https://www.webmd.com/skin-problems-and-treatments/picture-of-the-skin>. Accessed April 23, 2019
7. Mayo Clinic. "Squamous cell carcinoma of the skin: Symptoms and Causes." Available at: <https://www.mayoclinic.org/diseases-conditions/squamous-cell-carcinoma/symptoms-causes/syc-20352480>. Accessed April 23, 2019
8. WebMD. "Squamous cell carcinoma" Available at <https://www.webmd.com/melanoma-skin-cancer/guide/squamous-cell-carcinoma>. Accessed April 23, 2019
9. Canadian Cancer Society. "Non-melanoma skin cancer statistics." Available at <http://www.cancer.ca/en/cancer-information/cancer-type/skin-non-melanoma/statistics/>. Accessed April 23, 2019



10. Public Health Agency of Canada. "Non-melanoma skin cancer" Available at <https://www.canada.ca/en/public-health/services/chronic-diseases/cancer/non-melanoma-skin-cancer.html> Accessed April 23, 2019
11. Skin Cancer Foundation. "Warning signs and images" Available at <https://www.skincancer.org/skin-cancer-information/squamous-cell-carcinoma/scc-warning-signs-and-images>. Accessed April 23, 2019
12. Skin Cancer Foundation. "Squamous Cell Carcinoma" Available at <https://www.skincancer.org/skin-cancer-information/squamous-cell-carcinoma>. Accessed April 23, 2019
13. Mayo Clinic. "Squamous cell carcinoma of the skin: Diagnosis and Treatment." Available at: <https://www.mayoclinic.org/diseases-conditions/squamous-cell-carcinoma/diagnosis-treatment/drc-20352486>. Accessed April 23, 2019
14. Petrou, Ilya. "New AAD cSCC treatment guidelines" Available at <https://www.dermatologytimes.com/dermatology/new-aad-csc-cc-treatment-guidelines/page/0/1>. Accessed April 23, 2019
15. Bain, Julie. "New Treatment, New Hope for Those with Cutaneous Squamous Cell Carcinoma." Available at <https://blog.skincancer.org/2018/10/03/new-treatment-for-advanced-cutaneous-squamous-cell-carcinoma/>. Accessed April 23, 2019
16. NCI. "Radiation Therapy to Treat Cancer." Available at <https://www.cancer.gov/about-cancer/treatment/types/radiation-therapy>. Accessed May 7, 2019.
17. NHS. "Bowen's Disease" Available at <https://www.nhs.uk/conditions/bowens-disease/>. Accessed May 7, 2019.
18. Cancer.net. "Understanding Immunotherapy". Available at <https://www.cancer.net/navigating-cancer-care/how-cancer-treated/immunotherapy-and-vaccines/understanding-immunotherapy>. Accessed May 7, 2019.



Our Mission:

Melanoma Canada advocates for and supports Canadians living with melanoma and skin cancer with helpful resources, education, psychosocial support services, and more.

Melanoma Canada

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We would like to thank and acknowledge Regeneron and Sanofi for providing funding for this publication.

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