

Melanoma Surgery

General Information

**Information for individuals
with melanoma and their families**

To our patients and their families:

We encourage you to use this book as a guide to learning about melanoma.

You are the most important part of your team and can expect high quality, evidence-based treatment and compassionate care from your cancer specialists.

Together we will provide you with information and support, so that you can make informed decisions and take active part in your care. Please feel free to talk with us about your health and any concerns that you may have. We welcome your questions at any time.

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Section One: The skin

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 performs many tasks:

- Skin provides the first line of defense against injury and infection. It is the largest immune organ and helps provide a balanced immune system. Healthy skin helps prevent infection, recognizes allergens and can repair damage as it occurs.
- Skin prevents the body from losing water and drying out. This is important as your body is largely made of water.
- Skin protects you from heat. Sweat glands release a watery fluid, cooling the skin.
- Skin makes vitamin D.
- Skin protects you from damage that can be caused by *ultraviolet (UV) light*. The sun and sunlamps produce UV light.

Layers of the skin

The skin has three layers: the epidermis, the dermis, and the subcutaneous tissue. The epidermis is the thin top layer of skin you can see. Several cell types make up the epidermis. Cells are the microscopic building blocks that make up tissues, such as skin. Melanocytes are found in the deepest part of the epidermis. Melanocytes produce melanin, the pigment that gives skin its colour. When skin is exposed to UV light, melanocytes make more melanin. Increased melanin makes the skin darker.

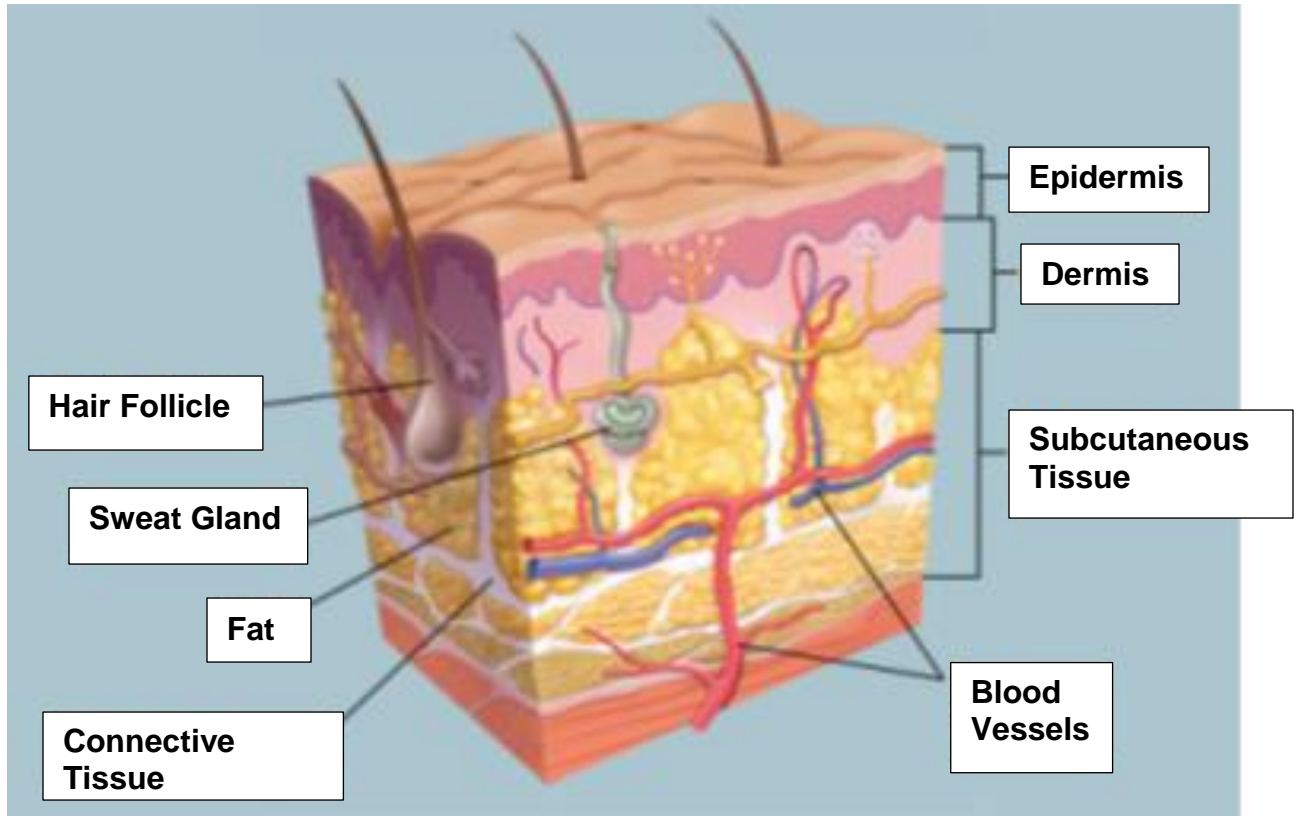


Image Source: © 2014 WebMD, LLC. All rights reserved.

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 the skin and remove waste products.
- Lymph vessels return blood plasma, the liquid part of the blood, from the tissues to the heart.
- Sweat glands produce sweat, a watery substance that helps to cool the body.
- Sebaceous glands produce sebum, an oily substance that helps protect skin from drying out.
- Connective tissue surrounds these structures and holds them in place. Connective tissue allows the skin to stretch.
- Hair follicles produce your hair.

The subcutaneous tissue is beneath the dermis. It attaches the skin to the muscle underneath. It contains connective tissue and fat. The subcutaneous tissue stores energy and body heat. It also absorbs shock to protect the body.

Cell growth: normal cells and cancer cells

Cells are microscopic building blocks of the body that group together to form tissues. Tissues include organs, bone, muscle, fat and skin. The body needs new skin cells to replace those that have died and to heal injuries. Old skin cells shed constantly, and are replaced by new skin cells in a highly regulated manner.

Cancer cells escape the body's control and continue to grow and divide in an uncontrolled manner. Eventually, cancer cells form a mass called a growth or tumour.

Cancer cells may also be abnormal in other ways. They can break off the tumour and travel anywhere in the body through lymphatic channels or blood vessels. Lymphatic channels drain fluid to lymph nodes, which filter this fluid. Cancer cells can lodge in the lymph nodes and tend to be the first site to which melanoma cancer cells can spread. Cancer cells that have broken off the tumour continue growing and dividing. They can form new tumours anywhere. These new tumours, which can be found in parts of the body far from the first (primary) tumour are called metastases.

Section Two: Melanoma

In Canada, melanoma is one of the seventh most commonly occurring cancers and is one of the most prevalent cancers in our youth population ages 15 to 29 years (Canadian Cancer Society, Cancer Statistics 2019). Melanoma is a cancer of melanocytes, the pigment cells of the skin. Melanoma can occur anywhere on the skin. In men, melanoma may often be found on the head, neck, and back. In women, melanoma may often be found on the back or extremities such as arms, and lower legs. Melanoma is less common in people with dark skin. However, in dark-skinned people, melanoma is more commonly found under the nails of the fingers or toes, on the palms of the hands, or soles of the feet.

Melanoma forms in the epidermis and can grow down into the dermis. Once it reaches the dermis, melanoma can spread via the lymphatic or blood vessels. It is important to find and remove melanomas early.

Melanoma has the highest rate of increasing incidence of cancers. The leading cause of melanoma is cumulative ultraviolet (UV) light exposure from the sun or tanning beds.

ABCDE Types of melanoma

Doctors classify melanoma into four major types. Classification is based on their colour, shape, location and how they grow.

Superficial spreading melanoma

This usually looks like a dark brown or black stain originating from an existing or a new mole. It is more commonly seen in areas of skin that have been exposed to UV light, especially areas of previous sunburn. It is the most common type, making up 70% of melanomas. Superficial spreading melanoma tends to follow the ABCDE rules (see page 6). In most situations, the early changes are purely visual ones and it is the later stages that may result in symptoms (itching or bleeding).

Nodular melanoma

Nodular melanoma is a firm, domed bump. It grows quickly down through the epidermis into the dermis. Once there, it can metastasize, or spread to other parts of the body. Nodular melanoma makes up about 10% of all melanomas. Nodular melanoma is typically dark brown or black, may crust or ulcerate. As in all subtypes of melanoma, nodular melanoma can be a pink, red or skin tone colour (amelanotic) and, rarely, colourless, especially in people with very fair complexions.

Lentigo maligna and lentigo maligna melanoma

Lentigo Maligna is also called melanoma in situ of the solar type where the melanoma cells are confined to the surface epithelium, the most superficial layer of the skin, with no invasion or penetration of the deeper layer, the dermis. As this is a very early stage of the disease, complete excision with appropriate clear margins is mostly curative. Once the melanoma cells invade the dermis, then it is called **lentigo maligna melanoma**.

Acral lentiginous melanoma

Acral lentiginous melanoma can look like a dark spot or a bruise that does not get better. It can occur on the palms of the hands and soles of the feet. Acral lentiginous melanoma may occur under a nail and look like a dark stripe. Like other flat forms of early melanoma, it may be identified by the ABCDE rules, but may also be amelanotic (non-pigmented, usually red in colour). This type occurs most frequently in people of African and Asian descent, but it may occur in any population.

Which of your moles are suspicious?

The ABCDEs of screening your skin – if a mole has these features bring them to the attention of your physician.



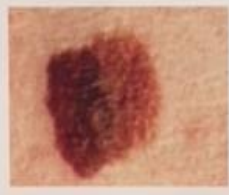


	A → Asymmetry	The two halves of the mole have different shapes.
	B → Border	The edge of the mole is irregular. It may look blurred, ragged, or notched. Pigment may spread into the skin around the mole.
	C → Colour	The colour of the mole is uneven. The mole may have different shades of tan, brown, and black, sometimes with blue, gray, red, pink or white.
	D → Diameter	The mole has grown in size. Melanomas may be very small, but most are larger than a pea (about a ¼ of an inch).
	E → Evolving	The mole has changed in the past few weeks or months. It may be itchy, scaling or bleeding (pruritus).

Image Source: Skin Cancer Foundation; Canadian Dermatology Association – www.dermatology.ca

Section Three: Staging melanoma

Staging

Once a cancer diagnosis has been confirmed, the cancer is given a clinical stage. This information helps you and your health care team choose the best treatment for you.



The cancer stage is determined by:

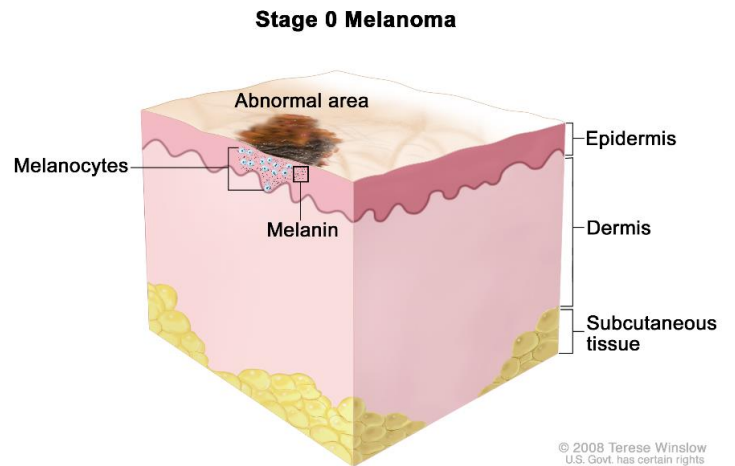
- the depth of the melanoma (known as Breslow depth)
- the presence of ulceration
- evidence upon clinical exam of spread to lymph nodes or the rest of the body
- evidence on imaging (CT, MRI) of spread to other organs in the body, other than the skin and lymph nodes

Final pathological staging is **only** available after surgery.

Stage 0 (Melanoma in Situ)

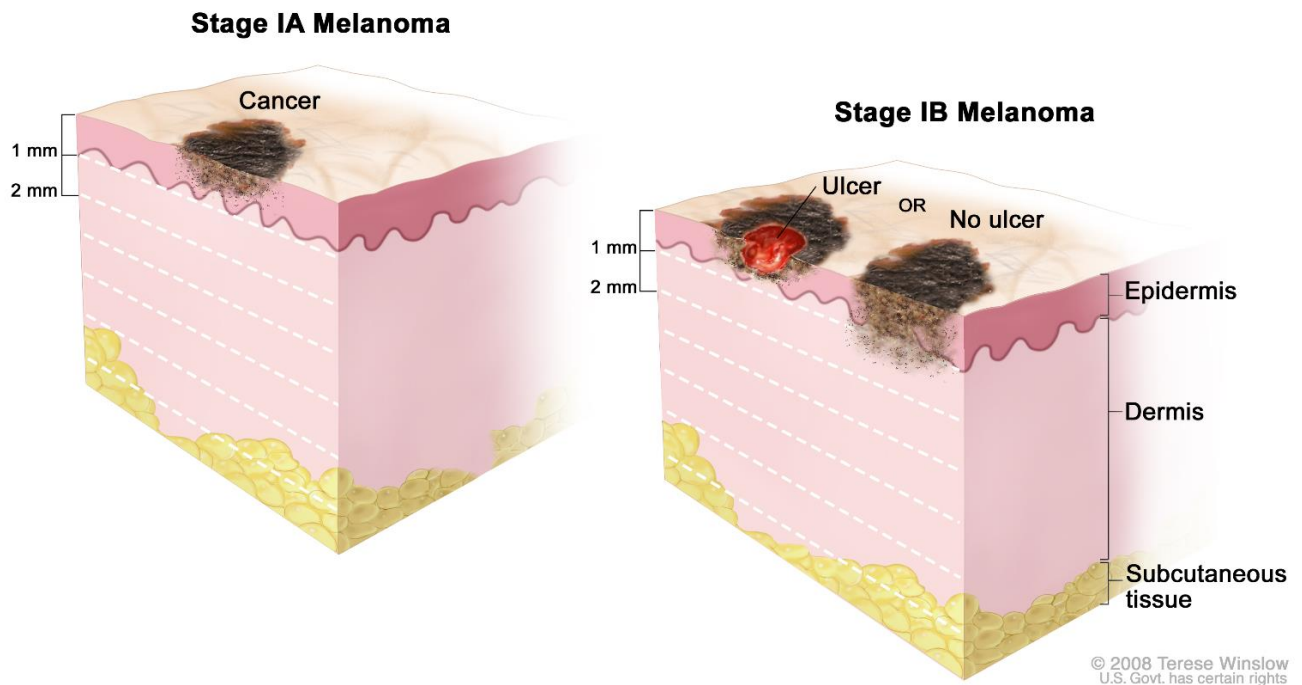
Abnormal melanocytes are found in the epidermis. They are confined to this layer only and do not yet have the ability to spread elsewhere.

Surgery to remove the melanoma with a 5 mm border of normal skin completes treatment. The prognosis is excellent.



Stage I

In stage I cancer has formed. Stage I is divided into stages IA and IB.



- Stage IA: the tumour is not more than 1 millimeter thick, with no ulceration.

- Stage IB: the tumour is either:
 - Not more than 1 millimeter thick and it has ulceration; or
 - More than 1 millimeter, but not more than 2 millimeters thick, with no ulceration.

Treatment of stage I includes surgery to remove a wider border (wide local excision or WLE) of normal skin around the biopsy site. In some cases, a sentinel lymph node biopsy is considered.

Stage II

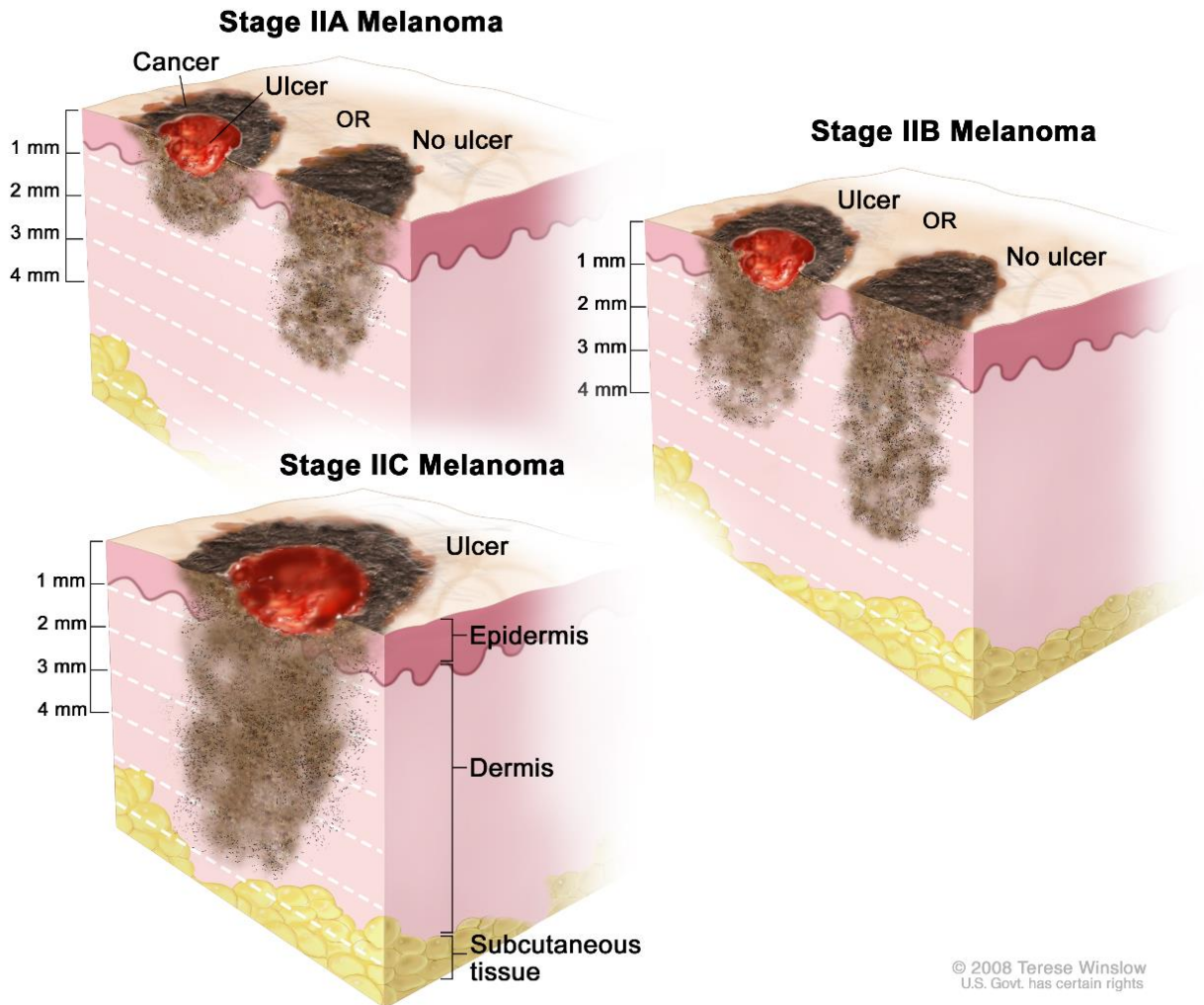
Stage II is divided into 3 stages:

- Stage IIA: the tumour is either:
 - more than 1 but not more than 2 millimeters thick, with ulceration; or
 - more than 2 but not more than 4 millimeters thick, with no ulceration
- Stage IIB: the tumour is either:
 - more than 2 but not more than 4 millimeters thick, with ulceration; or
 - more than 4 millimeters thick, with no ulceration
- Stage IIC: the tumour is more than 4 millimeters thick, with ulceration

Treatment includes:

- a second surgery to remove a wider border of normal skin around the biopsy site (wide local excision)
- the option of considering a sentinel lymph node biopsy

Surgery may be the only treatment required. The risk of recurrence, or return of the melanoma, or spread to another part of the body, is moderate in stage IIA. Some people, with deeper or higher risk stage II melanomas (stage IIB or IIC), have a higher risk of recurrence and may benefit from additional treatments following surgery.



Stage III

In stage III melanoma, the tumour may be any thickness, with or without ulceration. One or more of the following is true:

- Cancer has spread to one or more lymph nodes
- Lymph nodes are joined together (matted)
- Cancer is in a lymph vessel between the primary tumour and nearby lymph nodes. The cancer is more than 2 centimeters away from the primary tumour (called *in-transit* melanoma)
- Very small tumour(s) are found on or under the skin, not more than 2 centimeters away from the primary tumour (called *satellite lesion*)

Treatment of stage III may include a second surgery to remove lymph nodes in the area and a wider border of normal skin around the biopsy site (wide local excision). Additional treatments following surgery are possible.

Stage IV

In stage IV melanoma, the cancer has spread to other places in the body, sometimes far away from where it first started (e.g. lung, liver, brain, bone, soft tissue, or gastrointestinal (GI) tract).

Treatment of Stage IV involves a discussion with your medical or radiation oncologist about available treatments including surgery and participating in clinical trials.

Section Four: Sun Safety and Checking Your Skin

Sun Safety

Melanoma and other skin cancers can be caused by exposure to ultraviolet radiation (UV). A common source of UV radiation is the sun, but it can also come from tanning beds and other artificial sources. You can be exposed to UV radiation even on days that are cloudy or through reflection off snow. Exposure to tanning beds can increase an individual's chance of developing melanoma in their lifetime by up to 75%.

- We understand that the sun and UV radiation cannot be avoided entirely. However, we have listed several sun safety tips that can reduce your risk. Avoid indoor tanning beds. Wear a broad-spectrum sunscreen of at least SPF 30-50. Apply at least 30 minutes prior to sun exposure and reapply every 2 hours, especially when sweating or if you have been swimming.
 - Wear a hat that covers your face, back of your neck and ears. Make sure you apply sunscreen to these areas.
 - Wear sun protective clothing to cover your skin. Some clothes may include SPF protection information.
-

- Wear sunglasses with UVA/UVB protection.
- Avoid direct sunlight during the high UV-index hours of the day (11 AM to 3 PM daily). Avoid outdoor activities if possible when UV index is very high. Check the UV index forecast daily (available on the Weather Network)

If you are spending time in direct sunlight, limit the duration and stay in the shade as often as possible.

Checking Your Skin

If you have been diagnosed with a melanoma, you have an increased risk of developing a second melanoma in your lifetime. It is important to have your skin checked at least annually by your family doctor or dermatologist. However, since most melanomas are detected by patients, we recommend checking yourself between doctor's visits.

Here are some tips for self-skin examination:

- Plan the same day each month for your examination. Mark it in your calendar.
- It is best to check yourself from head to toe, when you have a mirror available (e.g. after a shower).
- Use the ABCDEs (page 6 in this booklet) to help you identify pigmented lesions of concern.
- Have a family member or friend check your back, or try to use two mirrors to help fully evaluate your back.

If you have a particular spot you are concerned about take a photo for future reference when you see your doctor.

For your surgical sites where you had your melanoma surgery on your body:






- Wide local excision site: feel the incision for any lumps or nodules.
 - Look for any new pigmented/coloured spots around the periphery of the incision. Feel the skin from the wide excision site up to the sentinel lymph node biopsy site for any lumps or spots that are new.
 - Feel for any lumps under the incision in the lymph node basin (e.g. the armpit or groin). They feel like firm marbles.
 - Tell your doctor about any new lumps or changes in your scar tissue.
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Section Five: Your information

My biopsy results

Resources

For more information: <https://www.hamiltonhealthsciences.ca/wp-content/uploads/2020/03/Welcome-to-the-Juravinski-Cancer-Centre-1.pdf>

Community Resource	Phone Number	Website / QR Code
Cancer and Work		https://www.cancerandwork.ca/ 
Canadian Cancer Society Cancer Information Service – An information specialist will answer your questions by email or phone.	1-888-939-3333 TTY 1-866-786-3934 Email: info@cis.cancer.ca	www.cancer.ca 
Cancer Care Ontario	416-971-9800	www.cancercare.on.ca/ 
Canadian Partnership Against Cancer		https://www.partnershipagainstcancer.ca 
Canwell Program Hamilton YMCA (Cancer Exercise)	905-667-1515	https://www.ymcahbb.ca/Programs/LiveWell/CanWell-LiveWell-(1)?location=5f8d05a1-6a9e-4f60-b826-9930d667435d 

MacWarriors (Cancer Exercise)	905-525-9140 ext. 27541	https://pace.mcmaster.ca 
Melanoma Network of Canada	1-877-560-8035	www.melanomanetwork.ca 
Telehealth Ontario (Smoking Cessation)	1-866-797-0000 1-866-797-0007	https://www.smokershelpline.ca/ home 
Wellwood	905-667-8870	www.wellwood.ca 
Wellspring	1-888-707-1277	www.wellspring.ca 