

# Cancer Association of South Africa (CANSA)



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## Fact Sheet on Cancer and an Itching Skin

### Introduction

Itch (also known by its medical term, pruritus) is an unpleasant sensation on the skin that provokes the desire to rub or scratch the area to obtain relief. Itch can cause discomfort and frustration; in severe cases it can lead to disturbed sleep and anxiety.

[Picture Credit: Pruritus]



Constant scratching to obtain relief can damage the skin (excoriation, lichenification) and reduce its effectiveness as a major protective barrier of the body. For some people itching may be just uncomfortable and irritating. For other people, itching can be unbearable and constant. Uncontrolled itching can cause restlessness, sleeplessness, feeling low and sometimes even depression. Scratching can also cause skin soreness and infection. (Cancer Research UK; DermnetNZ)

### Major Causes of Pruritus

Some of the systemic causes of pruritus include (in medicine, systemic means affecting the whole body, or at least multiple organ systems - it is in contrast with topical or local):

- Kidney Disease
  - Chronic kidney disease
- Liver Disease
  - Obstruction of the flow of bile – the bile then builds up in the blood
- Endocrine
  - Diabetes Mellitus (sugar diabetes)
  - Hyperthyroidism (overactive thyroid gland)
  - Hypoparathyroidism (underactive parathyroid glands)
  - Myxoedema (swelling of the skin and underlying tissues giving a waxy consistency, typical of patients with underactive thyroid glands)

- Hypercalcaemia (excessive calcium in the blood)
- Blood
  - Iron deficiency anaemia
  - Polycythaemia (abnormally increased concentration of haemoglobin in the blood)
  - Lymphatic leukaemia
  - Myeloma
  - Hodgkin's lymphoma
- Infection
  - Human immunodeficiency virus (HIV)
  - Parasitic infections
- Nervous system inclusive of neuropsychiatric disorders
  - Generalised neuropathic pruritus (e.g. following a stroke, multiple sclerosis; anxiety; obsessive compulsive disorder)
- Cancer and cancer treatment

Other causes of pruritus may include:

- Dry skin - if one does not see a crop of bright, red bumps or some other dramatic change in the itchy area, dry skin (xerosis) is a likely cause. Dry skin usually results from environmental factors such as hot or cold weather with low humidity, long-term use of air conditioning or central heating, and washing or bathing too much.
- Skin conditions and rashes - Many skin conditions itch, including eczema (dermatitis), psoriasis, scabies, lice, chickenpox and hives. The itching usually affects specific areas and is accompanied by other signs, such as red, irritated skin or bumps and blisters.
- Irritation and allergic reactions - wool, chemicals, soaps and other substances can irritate the skin and cause itching. Sometimes the substance, such as poison ivy or cosmetics, causes an allergic reaction. Food allergies also may cause skin to itch.
- Allergies - a damaging immune response by the body to a substance, especially a particular food, pollen, fur, or dust, to which it has become hypersensitive.
- Reaction to certain drugs - reactions to drugs, such as antibiotics, antifungal drugs or narcotic pain medications, can cause widespread rashes and itching.
- Pregnancy - during pregnancy, some women experience itchy skin, especially on the abdomen, thighs, breasts and arms. Also, itchy skin conditions, such as dermatitis, can worsen during pregnancy.

(DermnetNZ; Cancer Research UK).

### **Pruritus in Cancer Patients**

Pruritus is an uncommon symptom in cancer patients but can often be difficult to treat. The pathogenesis is complex and is not fully understood although there is evidence of involvement of a number of mediators from which treatment options are developing. In cancer patients pruritus may be directly related to the cancer, indirectly related (e.g. cholestasis) or associated with treatment. It is not always possible to treat the underlying cause of the pruritus in these patients, or desirable to stop treatments that may contribute and in these cases we must address the pruritus itself. The treatment of pruritus is a developing area, and helpful research is slowly emerging.

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## Assessment of Pruritus

Pruritus is a symptom, not a diagnosis or disease. Generalised pruritus should be investigated because of its strong medical significance. Assessment of pruritus must incorporate an accurate and thorough history and physical examination.

The history includes the following data:

- Location, onset, duration, and intensity of itching.
- Effect on activities of daily living or sleep.
- Factors that relieve and aggravate itching.
- Other family members or pets that are, or may be, affected.
- History of pruritus.
- History of malignant disease.
- Current malignant disease and treatment.
- Non-malignant systemic diseases.
- Use of medications (analgesics, antibiotics, and other prescription and non-prescription drugs, including illicit drugs).
- Nutritional and fluid level status.
- Social history (hobbies, occupation, sexual history, and travel).
- Current skin care practices.
- Patient's emotional state.

Physical examination will provide data from assessment of the following:

- All skin surfaces for signs of infection.
- All skin surfaces for signs of primary dermatitis (e.g., drug reaction, psoriasis, atopic dermatitis, connective tissue disease, and lichen planus).
- All skin surfaces for signs of secondary dermatitis (e.g., macular erythema, dryness, excoriation, linear petechiae, prurigo nodules, and lichen simplex chronicus).
- Environmental factors (temperature, humidity).
- Physical factors (tight, constrictive clothing).
- Skin turgor, texture, colour, temperature, and cutaneous neoplasms.

First-line studies should include the following:

- Complete blood count with differential and platelet count.
- Renal function (blood urea nitrogen, serum creatinine).
- Hepatic (liver) function (transaminases, alkaline phosphatase, bilirubin).
- Lactate dehydrogenase.
- Thyroid function (thyroid-stimulating hormone, thyroxin levels).
- Chest x-ray.
- Erythrocyte sedimentation rate.

Second-line laboratory studies guided by review of systems and physical examinations may include the following:

- Skin biopsy (routine histology with and without direct immunofluorescence).

- HIV screening.
- Serum iron, total iron-binding capacity, and ferritin.
- Fasting glucose and haemoglobin A1C.
- Parathyroid function (calcium, phosphate, and parathyroid hormone levels).
- Viral hepatitis screening.
- Serum immunoglobulin E levels.
- Serum protein electrophoresis/serum immunofixation electrophoresis.
- Tissue transglutaminase and endomysial antibodies.
- Serum tryptase, histamine, and/or chromogranin-A levels.
- Urine for sediment; 24-hour urine collection for 5-hydroxyindoleacetic acid (5-HIAA; serotonin metabolite) and methylimidazoleacetic acid (MIAA; histamine metabolite).
- Stool for occult blood, ova, and parasites.

(National Cancer Institute).

### **Treatment of Pruritus**

Prevention and Elimination of Provocative Factors - patients and caregivers must be included in planning and providing care to the greatest extent possible. Education is an important aspect of symptom control. Skin care regimens incorporate protection from the environment, good cleansing practices, and internal and external hydration. The intensity of the regimen and the techniques employed will vary according to aetiologic factors (cause) and the degree of distress associated with the pruritus.

The average adult needs 25-30 ml of fluid per kg of body weight per day to maintain hydration.

The need for water increases:

- In warm or hot weather
- With vigorous physical activity, such as exercise or working in the yard
- During bouts of illness, especially if one has a fever, is vomiting, having diarrhoea or coughing a lot

Adequate nutrition is essential to the maintenance of healthy skin. An optimal diet should include a balance of proteins, carbohydrates, fats, vitamins, minerals, and fluids. Daily fluid intake as quoted above is suggested as a guideline but may not be possible for some individuals.

Aggravating factors should be avoided, including the following:

- Fluid loss secondary to fever, diarrhoea, nausea and vomiting, or decreased fluid intake
- Bathing with hot water
- Using bubble baths or soaps that contain detergents
- Bathing more than once a day or bathing for longer than 30 minutes
- Using soap and adding oil early in a bath
- Using a reusable fomite for scrubbing (e.g., buff-puff or loofah sponge)
- Using scents, fragrances, and perfumes
- Dry environment

- Laundering sheets and clothing with detergent containing scents, dyes, and preservatives
- Using fabric softener sheets
- Wearing tight restrictive clothing or clothing made of wool, synthetics, or other harsh/scratchy fabric
- Using underarm deodorants or antiperspirants
- Applying topical preparations containing scents, dyes, or preservatives
- Emotional stress

Alleviating factors should be promoted, as follows:

- Applying unscented emollient creams or ointments
- Bathing in tepid water
- Using mild skin cleansers (non-soap) or soaps made for sensitive skin (e.g., Cetaphil cleanser, Dove for Sensitive Skin, Oilatum, Basis)
- Using soap only for dirty areas; otherwise, water is sufficient
- Limiting bathing to 30 minutes daily or every other day
- Adding oil and using soap at the end of a bath or adding a colloidal oatmeal treatment early to the bath
- Gently washing, if needed, with a clean, fresh, soft cotton washcloth
- Rinsing all residue from bathing with fresh tepid water
- Drying off by patting skin instead of rubbing
- Maintaining a humid environment (e.g., using a humidifier)
- Using cotton flannel blankets, if needed
- Washing sheets, clothing, and undergarments in mild soaps for infant clothing containing no scents, dyes, or preservatives (e.g., Dreft, All Free Clear, Tide Free and Gentle)
- Using liquid fabric softener that is rinsed out in the wash (e.g., All Free Clear Fabric Softener) or avoiding fabric softener altogether
- Wearing loose-fitting clothing and clothing made of cotton or other soft fabrics
- Using distraction, relaxation, positive imagery, or cutaneous stimulation

Heat increases cutaneous blood flow and may enhance itching. Heat also lowers humidity, and skin loses moisture when the relative humidity falls below 40%. A cool, humid environment may reverse these processes. Extensive bathing aggravates dry skin, and hot baths exacerbate fluid loss by causing vasodilation. The vasodilation results in increased blood flow, which enhances itching. Tepid baths have an antipruritic effect, possibly resulting from capillary vasoconstriction.

The goal of skin cleansing is to remove dirt and prevent odour, but actual hygienic practices are influenced by skin type, lifestyle, and culture. Bathing should be limited to 30 minutes every day or every 2 days.

Many soaps are salts of fatty acids with an alkali base, leading to excessive defatting of the skin lipids and altered skin pH, thus irritating the skin. Older adults or individuals with dry skin should limit use of soaps to areas with apocrine glands. Plain water should suffice for cleaning other skin surfaces. Mild soaps have less soap or detergent content. Soap is a degreaser and can also irritate skin. Super fatted soaps deposit a film of oil on the skin surface, but there is no proof that they are less drying than other soaps, and they may be more expensive.

Residue left by detergents after bathing or used in laundering clothes and linens, as well as fabric softeners and antistatic products, may aggravate pruritus. Clothing detergent residue can be neutralised by the addition of vinegar (1 teaspoon per litre of water) to rinse water. Mild laundry soaps marketed for infant items also may offer a solution.

Loose-fitting, lightweight cotton clothes and cotton bed sheets are suggested. The elimination of heavy bedcovers may alleviate itching by decreasing body heat. Wool and some synthetic fabrics may be irritating. Distraction, music therapy, relaxation, and imagery may be useful to relieve symptoms.

Topical Therapies – topical therapies includes both over-the-counter products as well as prescription products. One should always endeavour to obtain a topical therapy that does not contain any colouring, scents, fragrances, or perfumes as these may aggravate the itch.

Some topical agents, including cornstarch, talcum powder, perfumed powders, and bubble baths, can irritate the skin and cause pruritus. Cornstarch has been an acceptable intervention for pruritus associated with dry desquamation related to radiation therapy, however, it should not be applied to moist skin surfaces, areas with hair, sebaceous glands, skin folds (intertriginous zones), or areas close to mucosal surfaces, such as the vagina and rectum. Glucose is formed when cornstarch is moistened, providing an excellent medium for fungal growth.

Topical steroids can reduce itching, but they reduce blood flow to the skin, resulting in thinning of the skin and increased susceptibility to injury. They should, therefore, be reserved for pruritic skin with associated primary dermatitis or inflammatory aetiologies.

Systemic Therapies – these therapies are prescribed by a medical practitioner after successful investigation and diagnosis of the cause. Systemic medications useful in the management of pruritus include those directed toward the underlying disease or control of symptoms. Antibiotics can reduce symptoms associated with infection. Oral antihistamines may provide symptomatic relief in histamine-related itching; however, they are not considered useful in pruritus of neuropathic origin.

Physical Modalities - alternatives to scratching for the relief of pruritus can help the patient interrupt the itch-scratch-itch cycle. Substituting scratching with application of emollients may help reduce skin breakdown. Application of a cool washcloth or ice over the site may be useful. Firm pressure at the site of itching, at a site contralateral to the site of itching, and at acupuncture points may break the neural pathway. Rubbing, pressure, and vibration can be used to relieve itching as well.

(National Cancer Institute; WebMD).

### **Consultation with the Following Specialists may be Helpful**

- Dermatologist: Always consult a dermatologist to rule out any primary cause of pruritus and to discuss UV-B or psoralen UV-A light therapy when it is considered in the treatment plan.
- Gastroenterologist: A gastroenterologist should evaluate any patient with liver or biliary tract disease.

- Haematologist/oncologist: These specialists should always be involved in the care of patients with pruritus due to hematologic or malignant causes.
- Endocrinologist: Patients with endocrine pruritus should be evaluated for treatment of their thyroid disease, which often cures their itch.
- Surgeon and/or transplant surgeon: Patients with chronic renal failure (CRF) or chronic liver disease may need to be evaluated for kidney or liver transplantation, respectively. A surgeon should always be consulted in cases of malignant cholestasis.

(MedScape).

### **Medical Disclaimer**

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### Pruritus

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### WebMD

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