Pruritus
Medicine > Dermatology > Pruritus


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1 Care map information

Quick info:

Scope:
- the assessment and diagnosis of pruritus in adults in primary care

Out of scope:
- pruritus vulvae
- pruritus ani
- pruritus in children

Definition:
- an unpleasant sensation of the skin leading to the desire to scratch [5,6]
- pruritus is a commonly-used term to describe itch [1]
- terms pruritus and itching are used synonymously [3]
- pruritus can either be acute or chronic, with the chronic form lasting for 6 weeks or more [3,6]
- pruritus may occur with or without visible skin lesions [3]

References:

Please see the care map's Provenance.

2 Information resources for patients and carers

Quick info:

Recommended resources for patients and carers, produced by organisations certified by The Information Standard:
- 'Antihistamines' (URL) from Bupa at http://www.bupa.co.uk
- 'Antihistamines' (PDF) from Patient UK at http://www.patient.co.uk
- 'Healthtalkonline' (URL) from DIPEX at http://www.healthtalkonline.org
- 'Insect bites and stings' (PDF) from Patient UK at http://www.patient.co.uk
- 'Itch' (PDF) from Patient UK at http://www.patient.co.uk
- 'Nodular prurigo' (URL) from Bupa at http://www.bupa.co.uk
- 'Prickly heat' (URL) from Bupa at http://www.bupa.co.uk

For details on how these resources are identified, please see Map of Medicine's document on Information Resources for Patients and Carers (URL).

3 Updates to this care map

Quick info:

Date of publication: 31-Jan-2012

Scheduled update:

This care map has been drafted using the Map of Medicine editorial methodology (URL) and represents best clinical practice according to the highest quality evidence available, including the following guidelines:

Further information was provided by the following references including practice-based knowledge: [3-7].

Please see the care map’s Provenance for additional information on references, accreditations from national clinical bodies, contributors, publication schedule, and the editorial methodology.

4 Clinical presentation

Quick info:

Pruritus can either be [3,5,6]:


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• acute – last for less than 6 weeks; or
• chronic – last for 6 weeks or more

The characteristics of the itch can present as [1]:
• prickling – itch of this nature can persist for hours after a hot shower or bath in people with polycythaemia vera
• crawling – a description of itch ‘like insects crawling over the skin’ may be psychogenic in origin and indicative of delusions of parasitosis
• burning – itch associated with burning may be a feature of:
  • dermatitis herpetiformis and some types of urticaria
  • lymphoma
  • aquagenic pruritus – may be an isolated symptom, or a myeloproliferative disorder

Dermatological pruritus:
• primary skin lesions that can be linked with itch sensation [6]
• patients with xerosis (itch of dry skin) experience an intense pruritus [7]:
  • usually involving the anterolateral lower legs – other commonly involved areas include the back, flank, abdomen, and waist
  • skin drying and scratching result in red plaques that fissure
  • appearance has been compared to that of cracked porcelain (eczema craquelé, also known as asteatotic eczema)

In post-burn pruritus:
• additional tissue damage from scratching may be noted

Other pruritus types (eg systemic, neurological, psychogenic) [6]:
• often are not associated with a visible skin problem
• may have secondary scratch lesions (excoriations, lichenification, nodular lesions) that must be differentiated from a primary skin eruption
• look for the “butterfly sign” – an area of skin on the top of the back that the patient is unable to scratch; it will have normal skin with no underlying dermatosis [4]

References:
Please see the care map's Provenance.

5 History and examination

Quick info:
History:
• enquire about [1]:
  • onset, timing, and duration of itch:
    • is itch associated with a rash? [4]
  • location of itch – consistently localised itch suggests a localised cause rather than systemic disease
  • relieving factors – itch that is relieved with emollients or topical antipruritics associated symptoms – eg rash, fever, or weight loss
  • drug history – systemic medications [7]
  • medical history, eg coeliac disease associated with dermatitis herpetiformis [4]
  • allergies [4]
  • previous dermatological history, eg eczema, psoriasis, etc [4]
  • smoking – consider underlying malignancy [4]
  • diet – to identify features suggesting iron deficiency
  • itching in other people who have been contacts – consider scabies; itch worse at night [4]
  • any pets – consider papular urticaria [4]
  • alcohol misuse – may indicate liver disease
  • emotional stress and mental health history – may indicate a psychogenic cause
  • factors that suggest a nonsystemic or exogenous cause include [7]:
• acute onset over several days
• localized pruritus
• limitation of pruritus to exposed skin
• presence of pruritus in other household members
• a history of recent travel or occupational exposure
• consider exposure-related causes of pruritus [7]:
  • allergic contact dermatitis, eg latex, cosmetics, laundry detergents, nickel,
  • heat exposure:
    • cholinergic urticaria (response to hot water)
    • miliaria rubra (known as polymorphic light eruption or prickly heat) [4]
  • sun exposure [4]:
    • polymorphic light eruption
    • solar urticaria
    • phototoxic drug reactions
    • porphyria, connective tissue disease
  • occupational exposure, eg fibreglass, rubber, potassium dichromate in cements and dye
  • water exposure [7]:
    • aquagenic pruritus (associated with polycythemia vera, itching within 15 minutes of any water contact)
    • cholinergic urticaria (response to warm water)
    • polycythemia vera
    • swimmer’s itch (seven-day eruption after freshwater swimming)

Examination:
• examine the skin for [1]:
  • lesions, rash, signs of infestation, or excoriation
  • look for the “butterfly sign” – skin changes due to scratching with no underlying dermatosis [4]
  • dermographism (skin becomes raised and red when firmly stroked with a blunt object) – indicative of a type of urticaria
  • colour – may give clues about jaundice, renal failure, or anaemia
  • lymph nodes
  • liver and spleen, for enlargement
• full examination to exclude systemic cause, underlying malignancy [4]
• examine mouth – consider lichen planus [4]
• examine nails – can show signs of psoriasis, lichen planus, koilonychia [4]:
  • if ‘spoon-shaped’, consider iron deficiency
  • white nails, consider renal failure
• clubbing of hands and feet – consider malignancy [4]

References:
Please see the care map’s Provenance.

6 RED FLAG

Quick info:
The following should be considered:
• if pruritus due to brain injury is suspected, refer to neurologist for full consultation and/or imaging of the central nervous system [3]
• stroke can rarely be accompanied by pruritus – however, pruritus can be the only sign of brain injury [3]
• pruritus usually occurs in capsular infarctions or in middle cerebral artery-distribution vascular lesions [3]
• pruritus occurring during brain injury is usually unilateral and severe, and can be general, or localised [3]
• underlying malignancy, haematological disorders, or HIV if pruritus is associated with [6];
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• weight loss
• lymphadenopathy
• iron deficiency

References:
Please see the care map's Provenance.

8 Investigations

Quick info:
The following diagnostic tests should be considered:
• full blood count (FBC) – to investigate anaemia, haematological malignancies [4]
• ferritin – levels less than 30 with normal haemoglobin (HB) can cause pruritus [4]
• thyroid function tests (TFTs) [4]
• urea and electrolytes [4]
• liver function tests (LFTs) [4]
• erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP) tests – to identify underlying systemic diease [4]
• calcium/bone profile – hypercalcaemia can indicate malignancy [4]
• glucose levels [4]
• chest X-ray [4]
• HIV test [4]
• skin scrapings (potassium hydroxide preparation, mineral oil smear, Tzanck test) – can identify scabies and dermatophytoses [7]
• dermoscopy – useful tool in identifying scabies mite [4]
• skin biopsy (hematoxylin and eosin stain, direct immunofluorescence) can identify:
  • inflammatory dermatoses [4]
  • mastocytosis [7]
  • mycosis fungoides [7]
  • bullous pemphigoid [4]
  • other immunobullous disorders [4]
• skin culture – bacterial, viral, or fungal infection [7]

References:
Please see the care map's Provenance.

9 Acute pruritus

Quick info:
Acute pruritus is defined as pruritus lasting less than 6 weeks [5,6].

References:
Please see the care map's Provenance.

10 Chronic pruritus

Quick info:
Chronic pruritus is defined as pruritus lasting longer than 6 weeks, and is the most common symptom in dermatology and can occur with or without visible skin lesions [3,5,6].

Classification [6]:
• the International Forum for the Study of Itch (IFSI) has classified chronic pruritus based on the origin and clinical manifestations occurring in diseased and normal skin:
  • group 1 – pruritus on diseased skin
• group 2 – pruritus on non-diseased skin
• group 3 – chronic scratch lesions
• primary and secondary skin changes must be differentiated to categorise appropriately for treatment [6]:
  • primary skin lesions originate from the causal disease
  • secondary skin lesions are reactive lesions induced by manipulations (eg scratching or rubbing) of the skin due to chronic pruritus

Chronic pruritus, which can be distressing and often refractory to treatment, is associated with many diseases, the most common ones are [6]:
• chronic renal insufficiency
• cholestatic liver diseases
• atopic dermatitis

NB: Not all forms of chronic itch are identical, therefore, healthcare professionals should not regard itch as a singular uniform entity [6].

References:
Please see the care map's Provenance.

11 Drug-induced pruritus

Quick info:
Consider medication as a cause of pruritus [5]:
• opioids
• antibiotics
• antimalarials:
  • pruritus induced by antimalarials usually lasts less than 6 weeks
  • chloroquine – can be generalised itching, or limited to hands and feet
• chemotherapeutic drugs
• statins
• plasma volume expanders
• cytokines, growth factors, and monoclonal antibodies
• antihypertensives
• anti-diabetics
• anti-epileptics
• psychotropic drugs
• anti-arrhythmics
• anticoagulants
• serotonin re-uptake inhibitors

References:
Please see the care map's Provenance.

12 Symptomatic treatment of pruritus

Quick info:
Non-specific treatment measures can alleviate atopic dermatitis and xerosis, but they also may be effective in many other types of pruritus [7].

Suggest the following:
• use skin emollients liberally and frequently[1,7] – a full emollient regime including soap substitutes and bath emollients is essential [4]:
  • petroleum or lubricant cream at bedtime
  • ointments are preferable
• decrease frequency of bathing and limit bathing to brief exposure to tepid water [7]
• choose clothing that does not irritate the skin, eg wool, smooth textured cotton, or heat-retaining material [7]
• avoid use of vasodilators (caffeine, alcohol, spices, hot water) and excessive sweating [7]
• corticosteroids may be needed depending on underlying cause – avoid using topical preparations with perfumes and topical sensitisers, topical antihistamines and anesthetics [4]
• encourage the patient not to scratch – can advise rubbing skin with the palms of the hands if urge to scratch is irresistible [7]
• encourage the patient to cut their nails [7]

The following treatment options should be considered:

• antihistamine, eg chlorphenamine or hydroxyzine, to be taken at bedtime [2]:
  • cause sedation, helping to break the itch-scratch-itch cycle:
    • hydroxyzine is specifically licensed for pruritus
    • chlorphenamine is inexpensive, and effective sedating antihistamine of intermediate duration
    • alimemazine and promethazine have pronounced sedative effects – hangover effects are common and these medications are therefore not recommended
• standard topical antipruritic agents [7]:
  • menthol and camphor
  • menthol in aqueous cream [4]
  • calamine lotion – short use, as contains phenol irritant [4]
  • topical doxepin cream or capasacin cream – may cause irritation and local sensitivity reactions [4]
  • tricyclic antidepressants may be helpful in some patients, eg oral dosulepin [4]
  • mirtazapine may be helpful in some patients [4]
  • selective serotonin reuptake inhibitors (SSRIs) may be helpful in some patients [4]
• systemic antipruritic agents (used in allergic and urticarial disease) [7]:
  • doxepin
  • hydroxyzine

NB: These symptomatic treatments may be of marginal benefit only; specific management will be variable and directed towards the underlying cause [4].

References:
Please see the care map's Provenance.

13 Symptomatic treatment of drug-induced pruritus

Quick info:
Patient should stop taking any medication inducing pruritus, if possible [4].
Non-specific treatment measures can alleviate atopic dermatitis and xerosis, but they also may be effective in many other types of pruritus [7].

Suggest the following:
• use skin emollients liberally and frequently [1,7] – a full emollient regime including soap substitutes and bath emollients is essential [4]:
  • petroleum or lubricant cream at bedtime
  • ointments are preferable
• decrease frequency of bathing and limit bathing to brief exposure to tepid water [7]
• choose clothing that does not irritate the skin, eg wool, smooth textured cotton, or heat-retaining material [7]
• avoid use of vasodilators (caffeine, alcohol, spices, hot water) and excessive sweating [7]
• corticosteroids may be needed depending on underlying cause – avoid using topical preparations with perfumes and topical sensitisers, topical antihistamines and anesthetics [4]
• encourage the patient not to scratch – can advise rubbing skin with the palms of the hands if urge to scratch is irresistible [7]
• encourage the patient to cut their nails [7]
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- antihistamine, eg chlorphenamine or hydroxyzine, to be taken at bedtime [2]:
  - cause sedation, helping to break the itch-scratch-itch cycle:
  - hydroxyzine is specifically licensed for pruritus
  - chlorphenamine is inexpensive, and effective sedating antihistamine of intermediate duration
  - alimemazine and promethazine have pronounced sedative effects – hangover effects are common and these medications are therefore not recommended
- standard topical antipruritic agents [7]:
  - menthol and camphor
  - menthol in aqueous cream [4]
  - calamine lotion – short use, as contains phenol irritant [4]
  - topical doxepin cream or capascain cream – may cause irritation and local sensitivity reactions [4]
  - tricyclic antidepressants may be helpful in some patients, eg oral dosulepin [4]
  - mirtazapine may be helpful in some patients [4]
  - selective serotonin reuptake inhibitors (SSRIs) may be helpful in some patients [4]
- systemic antipruritic agents (used in allergic and urticarial disease) [7]:
  - doxepin
  - hydroxyzine

NB: These symptomatic treatments may be of marginal benefit only; specific management will be variable and directed towards the underlying cause [4].

References:
Please see the care map's Provenance.

14 No response to treatment after two weeks

Quick info:
If symptomatic treatment has not been effective, and/or there is no sign of active skin disease, consider the following:
- stop antihistamines if there is no relief of itch [1]
- seek specialist advice about prescribing medication to manage itch in the long term after carrying out necessary investigations [4]
- consider conducting the following investigations:
  - thyroid-stimulating hormone (TSH) level [1,7]
  - serum bilirubin and alkaline phosphatase levels [7]
  - serum creatinine and blood urea nitrogen levels [7]
  - complete blood count [1,7]
  - HIV test [4,7]
  - chest radiograph [4,7]
  - liver function tests [4,7]
  - renal function tests [7]
  - serum iron and ferritin level [1,4]
  - fasting blood glucose [1,4]
  - erythrocyte sedimentation rate (ESR), C-reactive protein (CRP), or plasma viscosity, depending on local arrangements [1,4]

References:
Please see the care map's Provenance.

15 Pruritus on diseased skin

Quick info:
Skin diseases accompanied by pruritus include [6]:


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- inflammatory, infectious, or autoimmune cutaneous diseases
- genodermatoses
- drug reactions
- dermatoses of pregnancy
- lymphomas

Due to scratching, the primary skin disease may be confounded by secondary scratch lesions [6]. This may occur, for example, in excoriated forms of psoriasis, atopic dermatitis, or bullous pemphigoid [6].

References:
Please see the care map's Provenance.

16  Pruritus on non-diseased skin

Quick info:
Pruritus usually occurs without any skin lesions except for possible secondary scratch lesions [6].

Causes [6]:
- systemic disease
- neurological disease
- psychosomatic/psychiatric disease

References:
Please see the care map's Provenance.

17  Chronic scratch lesions

Quick info:
Chronic pruritus can be present for years and patients rarely recall any initial skin changes [6].

Consider the following [6]:
- secondary acquired lesions induced by chronic scratching:
  - may induce variable damage of the skin, presenting as excoriations, crusts, lichenification, papules and nodules (nodular prurigo)
  - lesions may resolve, leaving hyper- or hypopigmentation and atrophic scars of the skin
  - several lesions in different stages and sizes may co-exist at affected area
  - underlying origin may be a systemic or skin disease

References:
Please see the care map's Provenance.

18  Dermatological causes

Quick info:
Causes of pruritus in inflammatory dermatoses include [6]:
- atopic dermatitis
- psoriasis
- contact dermatitis
- dry skin
- drug reactions
- scars
- "invisible dermatoses"
- urticaria
- eczema

Causes of pruritus in infectious dermatoses include [1,6]:

References:
Please see the care map's Provenance.
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• scabies
• insect bites
• chicken pox

Causes of pruritus in autoimmune dermatoses include [6]:
• bullous dermatoses, especially dermatitis herpetiformis
• bullous pemphigoid
• dermatomyositis

Causes of pruritus in genodermatoses include [6]:
• Darier’s disease
• Hailey-Hailey disease
• ichthyoses
• Sjögren-Larsson syndrome
• epidermolysis bullosa pruriginosa

Causes of pruritus in dermatoses of pregnancy [6]:
• polymorphic eruption of pregnancy
• pemphigoid gestationis
• prurigo gestationis

References:
Please see the care map's Provenance.

19 Systemic causes

Quick info:
Causes of pruritus in endocrine and metabolic diseases include [6]:
• chronic renal failure
• liver diseases with or without cholestasis
• hyperthyroidism
• malabsorption
• perimenopausal pruritus

Causes of pruritus in infectious diseases [6]:
• HIV-infection
• helminthosis
• parasitosis

Causes of pruritus in lymphoproliferative diseases [6]:
• non-Hodgkin’s lymphoma
• plasmacytoma
• multiple myeloma [1]
• Hodgkin’s lymphoma [1]
• leukemic infiltrates of the skins

Causes of pruritus in visceral neoplasms [6]:
• solid tumours of the cervix, prostate, or colon
• carcinoid syndrome

Causes of pruritus in pregnancy:
• polymorphic eruption of pregnancy (common in third trimester) [4,7]
• pemphigoid gestationis (uncommon) [4,7]
• intrahepatic cholestasis of pregnancy (uncommon) [4,7]
• atopic eruption of pregnancy [7]
Medication associated with drug-induced pruritus include [5,6]:
- opioids
- angiotensin converting enzyme (ACE) inhibitors
- amiodarone
- hydrochlorothiazide
- oestrogens
- simvastatin
- hydroxyethyl starch
- allopurinol

References:
Please see the care map's Provenance.

20 Neurological causes

Quick info:
Causes of pruritus in neuropathic diseases (neuronal damage that causes itch) [6]:
- multiple sclerosis
- neoplasms
- abscesses
- cerebral or spinal infarcts
- brachioradial pruritus
- notalgia paresthetica
- post-herpetic neuralgia
- vulvodynia
- small fibre neuropathy

References:
Please see the care map's Provenance.

21 Psychogenic causes

Quick info:
Causes of pruritus in psychogenic/psychosomatic conditions [3,6]:
- psychiatric/psychosomatic diseases
- depression
- anxiety disorders
- obsessive-compulsive disorders
- schizophrenia
- tactile hallucinosis
- fatigue

References:
Please see the care map's Provenance.

22 Mixed and other causes

Quick info:
The underlying origin for pruritus in the 'mixed' category comprises of overlapping and coexistence of several diseases [3,6].
Chronic pruritus with no finding of the underlying origin following completion of diagnostic tests is called 'pruritus of undetermined origin' (PUO) [3,6].

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Please see the care map's Provenance.
Evidence summary for Pruritus

This care map has been developed according to the Map of Medicine editorial methodology (http://mapofmedicine.com/whatisthemap/editorialmethodology). The content of this care map is based on:

- high-quality guidelines and policy information [1,2]
- critically appraised meta-analyses, systematic reviews, and primary literature [5-7]
- practice-based recommendations [4], including any literature endorsed by the contributors [3]

References

This is a list of all the references that have passed critical appraisal for use in the care map Pruritus

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