**Background**

Pruritus is the most common skin complaint in patients over the age of 65 years. These patients are in a unique population group that will require a comprehensive clinical approach. The symptoms of pruritus can be potentially debilitating and can have a significant impact on elderly patients by impairing their quality of life.

**Objective**

This article discusses the assessment and management of pruritus, with a specific focus on the elderly population.

**Discussion**

Pruritus in the elderly population remains both a diagnostic and therapeutic challenge. In the first instance, it has to be established whether the pruritus is arising from a primary dermatological condition or whether it is a manifestation of an underlying systemic disease. When a rash is present it could suggest an underlying primary dermatosis. Apart from lifestyle modifications, emollients, topical antipruritics (eg menthol 1% in aqueous cream), oral antihistamines, topical corticosteroids and phototherapy may prove useful.

**Keywords**

skin diseases; pruritis; aging; diagnosis, differential

Pruritus is defined as an unpleasant sensation of the skin that provokes the urge to scratch. When severe, it can interfere with work, sleep and daily activities of living. Pruritus is one of the most common skin complaints in the elderly.\(^1\)^\(^2\) Its prevalence is ever increasing with the rapid growth of the elderly population. Given its common prevalence and its potential to profoundly influence quality of life for many elderly patients, management needs to be carefully tailored and optimised to individual patients. In terms of possible aetiological mechanisms in the elderly, pruritus can be attributed to a diverse array of underlying aetiological factors, namely dermatological, systemic, neurological and psychogenic diseases, as well as being a manifestation of an adverse cutaneous drug reaction.\(^3\) When this is considered with other variables associated with advancing age, management of pruritus often presents a diagnostic and therapeutic challenge for clinicians.

**Pathogenesis**

The itch sensation is mediated by epidermal/dermal receptors connected to nonmyelinated afferent C-fibres that transmit the impulse from the periphery.\(^4\) These impulses then continue from the peripheral nervous system through to the thalamus and primary somatosensory cortex in the central nervous system. Histamine is thought to be the primary mediator of the itch sensation, although other neurotransmitters have also been implicated.\(^5\)

**Skin changes in the elderly**

Skin ageing can be considered in two broad categories; intrinsic ageing and extrinsic ageing (Table 1).\(^6\)^\(^7\) Intrinsic ageing refers to changes that are a consequence of the normal ageing process and occur in all individuals. Extrinsic ageing occurs as a consequence of extrinsic factors that have a cumulative effect on the skin. The structural and physiological cutaneous changes of intrinsic ageing, combined with lifetime cumulative effects of comorbid medical disorders and multiple medications, can produce a marked susceptibility to pruritic dermatoses in elderly people.\(^8\)

**Differential diagnosis**

Pruritus can be a manifestation of an underlying dermatological condition (Table 2)\(^9\) or part of an underlying systemic disease (Table 3).\(^10\)
**Approach to pruritus**

The mechanism of pruritus in the elderly can often be complicated and multifactorial. When reviewing an elderly patient with pruritus, a detailed history and full physical and dermatological examination are essential. Because elderly patients may have a lack of resources, impaired cognition, depression or physical disability, they may be more prone to neglecting normal hygiene grooming processes. This in turn can predispose them to developing pruritus.

**History**

The medical history should focus on:

- onset of the disease, location, character of the itch, progression and aggravating/alleviating factors
- duration of pruritus (acute: <6 weeks or chronic: >6 weeks)
- whether a rash is associated with the pruritus (is it an itch without a rash or a rash that itches?)
- whether the itching is severe enough to disrupt sleep

**Table 1. Intrinsic and extrinsic factors associated with skin ageing**

<table>
<thead>
<tr>
<th>Intrinsic ageing</th>
<th>Extrinsic ageing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduction in skin cell turnover</td>
<td>UV exposure</td>
</tr>
<tr>
<td>Impaired skin barrier function</td>
<td>Environmental pollution</td>
</tr>
<tr>
<td>Impaired immune system response</td>
<td>Smoking</td>
</tr>
<tr>
<td>Reduction in subcutaneous fat</td>
<td>Lifestyle factors (sleep, stress, diet)</td>
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<tr>
<td>Impaired thermoregulation</td>
<td></td>
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<tr>
<td>Decreased vascularity</td>
<td></td>
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<tr>
<td>Decreased sebaceous and sweat gland activity</td>
<td></td>
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<tr>
<td>Decreased sensory perception</td>
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</tbody>
</table>

**Examination**

The most common cause of itchy skin in the elderly, especially in autumn and winter is xerosis or dry skin. This ‘dry skin’ is quite evident on skin examination, being most pronounced on the upper limbs and back. If the itch is severe enough, secondary skin lesions can develop by way of excoriations, infection and lichenification (thickening, hyperpigmentation and enhanced skin markings) in longstanding rubbing. When examining the skin it is important to look at areas that might not normally be seen, such as finger webs, intertriginous regions and the genital areas. The presence of a rash should raise the suspicion of an underlying primary dermatosis. Localised pruritus in a dermatomal distribution without associated cutaneous changes or with only secondary cutaneous changes from scratching suggests neuropathic pruritus. When patients have an excessive impulse to scratch or pick at normal skin, it may be a sign of psychogenic pruritus, which manifests mostly in accessible sites such as the upper limbs and upper trunk. Examination should also look for possible secondary causes. Organomegaly (liver, spleen), which increases the likelihood of an underlying systemic disease, should be assessed. Lymph nodes should be palpated in the rare cases of lymphoma presenting with pruritus.

**Investigations**

It is reasonable to order a full blood count, renal, liver, fasting glucose and thyroid function studies.
in the first instance. A full blood count can be helpful in evaluation of haematological disorders such as leukaemias, anaemias and polycythaemia. Renal and liver function studies can evaluate evidence of renal or hepatic dysfunction. Abnormalities in liver function studies could also be related to infections, or drug-related, alcoholic or inflammatory hepatitis. Given the association with neoplasms, all patients should have up-to-date age-appropriate cancer screenings. A biopsy in the absence of any visible skin disease is unlikely to be helpful.

**Management**

Management can range from lifestyle modifications to specific medications. General measures that can be instituted without much difficulty include:

- quick, cool showers (<2–3 minutes)
- soap-free substitutes in the shower
- patting dry skin (hence avoiding vigorous rubbing)
- liberal use of emollients on damp skin, after the shower (preferably out of a tub or jar rather than a pump).
- avoiding excessive heating in winter
- using a humidifier if possible to enhance ambient indoor humidity (humidifying to at least 40%), especially in dry, cold winter months.
- avoiding use of electric blankets in bed
- minimising direct contact with woollen and synthetics garments
- keeping fingernails trimmed short to minimise complications from scratching (eg. secondary bacterial infection)

Recent medication changes that are suspected of causing pruritus should be rationalised. If response to the measures listed above is not satisfactory then a stepwise treatment approach can be trialled. Regular use of emollients is the mainstay of treatment in pruritus, aiming to ensure optimal skin hydration and preventing the itch-scratch cycle. Emollients enhance the skin barrier function, preventing transepidermal water loss and entry of irritants. 7 For patients with predominant urticarial symptoms a trial of antihistamines may be worthwhile. Topical treatments include antipruritics such as menthol 1% in aqueous cream. Topical corticosteroids can prove effective in managing pruritus, especially when related to an underlying inflammatory or immunological condition. Topical corticosteroids are thought to be effective secondary to their anti-inflammatory properties. In some patients phototherapy may be useful. When all of these options fail, a referral to a specialist for an opinion may be indicated.

**Key points**

- Pruritus in the elderly can be multifactorial in its aetiology.
- Prompt identification of exacerbating or causative factors may allow prompt management strategies.
- Early treatment options include lifestyle modifications, emollients and topical treatments.
Pruritus in the elderly – a guide to assessment and management

Authors
Niranthari Chinniah MBBS, Dermatology Registrar, Liverpool Hospital, Liverpool, NSW. nirachinniah@gmail.com
Monisha Gupta MD, FACD, Staff specialist, Dermatology, Liverpool Hospital, and conjoint senior lecturer, University of NSW,
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correspondence afp@racgp.org.au