

**Managing actinic (solar) keratosis (South Yorkshire)**

**INDEX**

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1. [SUMMARY & INTRODUCTION](#)
2. [RECOGNITION AND DEFINITION](#)
3. [GENERAL ADVICE AND SELF-CARE](#)
4. [TREATMENT ADVICE](#)
5. [ACTINIC KERATOSIS TREATMENT PATHWAY](#)
6. [PHARMACOLOGICAL TREATMENT](#)
7. [REFERRAL TO SPECIALIST SERVICES](#)
8. [PATIENT INFORMATION](#)
9. [REFERENCES](#)

## 1. SUMMARY & INTRODUCTION

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This guidance has been developed to aid clinicians in primary care in the management of actinic keratosis (AK). Patients with AK will present to GPs for diagnosis and treatment advice, which most can be provided in primary care in combination with self-care and preventative advice.

This guideline includes [recognition](#), [management](#), ([pharmacological](#) and [non-pharmacological support](#)), and when to consider [referral to specialist care](#).

This guidance has been developed in collaboration with primary, secondary, and specialist care colleagues from South Yorkshire. The information below is collated using [British](#), [European](#), [American](#), and other research articles that are listed at the end of the document.

Advice may be sought from Secondary care at any stage in this pathway via the usual referral routes.

## 2. RECOGNITION AND DEFINITION

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Actinic keratoses (Solar keratoses) are rough scaly patches occurring after long term light exposure to skin. Exposure of Ultraviolet (UV) radiation to skin, predominantly, of the head, neck, and dorsa of the hands, which can progress to keratinocyte carcinoma. Actinic Keratosis mostly affects people at later stages of life, with studies in UK suggest, 19-24% of people aged >60, having at least one AK lesion and 3-6% of men between 40-49. There is a low rate of development of AK to Squamous Cell Carcinoma (SCC), but studies suggest that it can occur in in areas of AK lesions. The risk of developing SCC increases over time and increased number of lesions.

Actinic keratoses present as discrete, sometimes confluent, patches of erythema and scaling, predominantly, where skin is exposed to sun. It is often asymptomatic and may occasionally be sore or itch, lesion may be single or multiple and has a potential of regression. PCDS provides an evidence-based [summary](#) and [treatment pathway](#), that contains images that can help visualise

There is a high prevalence of keratinocyte cancer, including AKs, in those receiving chronic immunosuppression, particularly organ transplant recipients, but also patients on long-term treatment for inflammatory bowel and rheumatological disease. Using sunbeds can also increase risk of AK.

Below is the classification of Actinic Keratosis grades, please see [PCDS for grading images](#).

Grading	Definition	Examination notes
Grade 1	Mild, pink or grey marks with slight scale or gritty to touch.	The lesion is usually just visible and palpable. Pigmentation might be present.
Grade 2	Moderate, thicker hyperkeratosis and easily detected.	Lesions are usually red and scaly, that are easy to see and feel.
Grade 3	Severe, hypertrophic, thick keratin.	Thick hyperkeratosis that is obvious.
Field Change	Confluent areas of several centimetres or more with a range of features matching any or all of the grades of AK.	Field change might include any or all of the above lesions.

*Adapted from British Journal of Dermatology Olsen Grading (2017).*

### 3. GENERAL ADVICE AND SELF-CARE

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Consider providing patients with information about Actinic Keratosis from reputable sources such as [British Association of Dermatologists](#).

Before commencing the treatment, it is worth exploring patient's protective habits. Below are some useful sources and tips that could be suggested to the patient.

- **Protection.** Protect your skin when exposed to sun (including during cloudy days), by using a hat, long sleeves, and UV protective sunglasses.
- **Prevention.** Avoid sunburn and using sunbeds as having a tan is an indication of skin damage. Use sunscreen that is at least SPF30.
- **Sun block.** Apply sunscreen 15min before leaving the house, reapply every 2 hours or after swimming.
- **Habits.** Check your moles and lesions on a regular basis. Consider asking your partner to help you with checking and consider keeping photographic notes to track any changes.
- **Skin Health.** Use general emollients to moisturise the skin on daily basis and consider vitamin D supplementation if above precautions are used and can lead to deficiency. All of which is available in pharmacies, shops and health stores.

Useful sources for patients:

1. [British Association of Dermatologists](#) provide a good general advice and patient information leaflet.
2. [PCDS](#) patient information leaflet.
3. [NHS England](#) patient information and general advice.
4. [Patient info](#) explains Actinic Keratosis and provides a broad overview.

### 4. TREATMENT ADVICE

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**No treatment:** Patients should be given a choice if they want a treatment depending on the severity of Actinic Keratosis and consider that it is precancerous. The decision should be based on a whole-patient assessment. The decision should be balanced with risks, comorbidities and preferences, as well as counterbalanced with the association of UV exposure and development of melanoma, SCC, BCC. All patients need clear information on this risk and their own risk of SCC in general so that, irrespective of the diagnosis of AK, they know to present early for assessment if a lesion bleeds, is painful, grows significantly or becomes protuberant. All patients should be advised regarding sun protection.

**Cryotherapy and Curettage & Cautery (C&C):** These are destructive therapies that may be available locally, with cryotherapy being a preference for single lesion treatment and, C&C being preferred for larger single lesions, which are hypertrophic, where topical treatment might struggle to penetrate. Refer to dermatology services in the usual manner if either of these treatments are to be considered.

If the patient wishes to proceed with the pharmacological treatment, it is advisable to explain that topical creams are likely to cause redness and discomfort, which is a part of the treatment and not an undesirable effect. It can take 4-6 weeks before symptoms settle. If these cause the patient a significant discomfort, it should be stopped, and an alternative treatment attempted. Patients should report any changes such as lesion growth, discomfort, ulceration, bleeding and new lesions as these might require an urgent referral.

**High risk patients ([Consider referral to secondary care](#)):**

- Past history of skin cancer
- Those with extensive UV damage
- Immunosuppressed
- Xeroderma pigmentosum
- Periocular Actinic Keratosis
- Very young <35

**Red Flag patients ([Refer to secondary care](#)):**

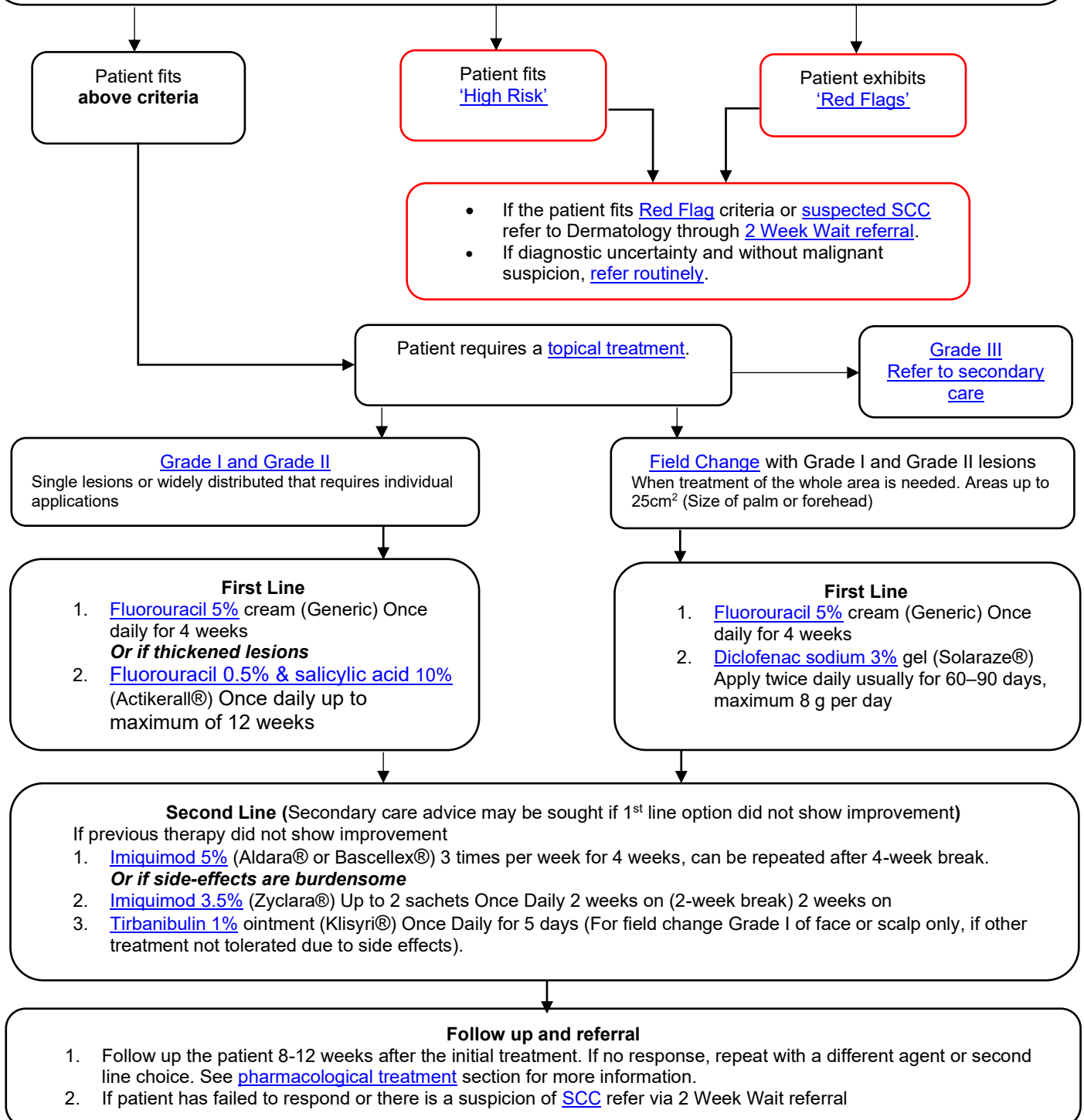
Refer to priority cancer assessment services if the following are present:

- Patients who have rapidly growing, painful or bleeding lesions
- Lesion which have a firm and fleshy base.
- Lesions show signs of ulceration, induration, tenderness or inflammation.
- Lesions on lips.
- Lesion not responding to treatment.
- Lesion which have a thick scale ([grade III AK](#))

**5. ACTINIC KERATOSIS TREATMENT PATHWAY**

Patient assessment and treatment for Actinic Keratosis

- The patient is provided with [patient information](#) and is happy to proceed with the treatment.
- Patient has been advised to take precautionary steps as per [general advice](#) section.
- Patient fits [Grade I or II criteria](#) and can be managed under primary care.
- Has been informed about how treatments work, what to expect, and how to [manage individual reactions](#).
- Patient has been explained '[No treatment](#)' option and been given [Cryotherapy & C&C](#) advice (if applicable).
- **Advice may be sought from Secondary care at any stage in this pathway via the usual referral routes.**



## 6. PHARMACOLOGICAL TREATMENT

Drug	Brand	Dose	Coverage	Licensed use	Warnings and Side effects
<a href="#">Fluorouracil 5%</a>	Generic cream (40g) For small or single lesions, the brand Tolak® may be considered a cost-effective option (20g pack size).	Once daily for 4 weeks	up to 500cm <sup>2</sup> (23 x 23cm)	<ul style="list-style-type: none"> <li>• Superficial pre-malignant and malignant skin lesions.</li> <li>• Keratoses (inc. senile)</li> <li>• Actinic and arsenical forms.</li> <li>• Keratoacanthoma.</li> <li>• Bowen's disease</li> <li>• Superficial basal-cell carcinoma.</li> </ul>	<p>Once daily administration helps with compliance.</p> <p>Common side effects: Inflammation, pain at application site. Full list of side effects available <a href="#">see section 4.8</a>.</p> <p>Patient advice: marked redness and soreness with crusting is to be expected and means the cream is working. It may take 6-8 weeks for the skin to fully settle.</p>
<a href="#">Fluorouracil 4%</a>	<a href="#">Tolak®</a> cream (20g) 2 <sup>nd</sup> Line where stock availability issues or small, single lesions.	Once daily for 4 weeks	Restricted to face, ear and scalp only	<ul style="list-style-type: none"> <li>• Non-hyperkeratotic, non-hypertrophic actinic keratosis (Olsen grade I and II) of the face, ears, and/or scalp in adults</li> </ul>	<ul style="list-style-type: none"> <li>• Can be used if 5% is out of stock.</li> <li>• <b>Contraindicated in peanut and soya allergies.</b></li> </ul> <p>Common side effects: Inflammation, pain at application site. Full list of side effects available <a href="#">see section 4.8</a></p> <p>Patient advice: marked redness and soreness with crusting is to be expected and means the cream is working. It may take 6-8 weeks for the skin to fully settle.</p>
<a href="#">Fluorouracil 0.5% &amp; salicylic acid 10%</a>	<a href="#">Actikerall®</a> cutaneous solution (25ml)	Once daily up to maximum of 12 weeks	up to 25cm <sup>2</sup> (5 x 5cm) For Grade I/II lesions	<ul style="list-style-type: none"> <li>• Slightly palpable and/or moderately thick hyperkeratotic actinic keratosis (grade I/II) in immunocompetent adult patients.</li> </ul>	<p>Salicylic acid helps with thickened lesions.</p> <p>Common side-effects: Headache, skin exfoliation, erythema at application site. Full list of side effects available <a href="#">see section 4.8</a></p> <p>Patient Advice: Actikerall® dries to leave a film on the skin. This film needs</p>

					removal prior to next application.
<a href="#">Diclofenac 3%</a>	<a href="#">Solaraze® Gel (50g)</a>	Twice daily for 60-90 days	Up to 200cm <sup>2</sup> (14 x 14cm)	<ul style="list-style-type: none"> <li>Actinic keratosis (AK) in adults</li> </ul>	<p>Offers lower side effect profile, which enables wider AK area use.</p> <p>Common side-effects: Hyperesthesia, hypertonia, conjunctivitis, erythema, pruritus. Full list of side effects available <a href="#">see section 4.8.</a></p> <p>Patient advice: Often referred to as a milder treatment so application needs to be continued for the full 60-90 days.</p>
<a href="#">Imiquimod 5%</a>	<a href="#">Aldara® cream (12 sachets)</a>	3 times per week for 4 weeks, can be repeated after 4-week break.	up to 25cm <sup>2</sup> (5 x 5cm) For use on face or scalp only	<ul style="list-style-type: none"> <li><a href="#">See here</a> under section 4.1.</li> </ul>	<p>Variable response between patients, at times substantial side-effect burden</p> <p>Common side-effects: Infection, Nausea, myalgia, arthralgia, backache, application site disorders. Full list of side effects available <a href="#">see section 4.8.</a></p> <p>Patient advice: marked redness and soreness with crusting is to be expected. Some people develop flu-like symptoms. If the skin reaction becomes too severe, stopping the cream for a week before restarting may be considered.</p>
<a href="#">Imiquimod 5%</a>	<a href="#">Bascellex® 50mg/g cream 250mg sachets</a>	3 times per week for 4 weeks, can be repeated after 4-week break.	up to 25cm <sup>2</sup> (5 x 5cm) For use on face or scalp only	<ul style="list-style-type: none"> <li><a href="#">See here</a> under section 4.1</li> </ul>	<p>Variable response between patients, at times substantial side-effect burden</p> <p>Common side-effects: Anorexia, Headache, Nausea, Myalgia, Arthralgia, Application site reactions. Full list of side effects available <a href="#">see section 4.8.</a></p>

					<p>Patient advice: marked erythema with crusting. Some people develop flu-like symptoms. If the skin reaction becomes too severe, stopping the cream for a week before restarting may be considered.</p>
<a href="#">Imiquimod 3.75%</a>	<a href="#">Zyclara®</a> cream (28 sachets)	Up to 2 sachets Once Daily Two treatment cycles of two weeks, separated by 2 treatment free weeks.	up to 100cm <sup>2</sup> (10 x 10cm) For use on face or scalp only	<ul style="list-style-type: none"> <li>Clinically typical, nonhyperkeratotic, nonhypertrophic, visible or palpable actinic keratosis (AK) of the full face or balding scalp in immunocompetent adults when other topical treatment options are contraindicated or less appropriate.</li> </ul>	<p>Similar to 5% strength, but with potentially less side-effects.</p> <p>Common side-effects: Anorexia, Insomnia, Headache, Dizziness, Nausea, Diarrhoea, vomiting, erythema, myalgia, arthralgia, application site reactions. Full list of side effects available <a href="#">see section 4.8</a></p> <p>Patient advice: erythema still obvious (slightly less than with Aldara® or Bascellex®).</p>
<a href="#">Tirbanibulin 1%</a>	<a href="#">Klisyri®</a> ointment (5 sachets)	Once Daily for 5 days	up to 25cm <sup>2</sup> (5 x 5cm) For use on face or scalp Grade I	<ul style="list-style-type: none"> <li>Field treatment of non-hyperkeratotic, non-hypertrophic actinic keratosis (Olsen grade 1) of the face or scalp in adults.</li> </ul>	<p>Overall, exhibits less side effects and has a place in field change treatment.</p> <p>Common side-effects: Applications site reactions. Full list of side effects available <a href="#">see section 4.8</a>.</p> <p>Patient advice: expect redness, crusting and some discomfort., which usually settles within 10 days.</p>

*Summary of pharmacological treatment used in actinic keratosis (adapted from multiple sources).*

## 7. REFERRAL TO SPECIALIST SERVICES

Place	Dermatology service	Urgent referral pathway	Regular referral pathway	Contact
Barnsley	Barnsley dermatology department/ <a href="#">Ozone Health</a> Teledermatology service.	2WW Referring with Images, Ozone health (Teledermatology) and Dermatoscopy	Dermatology referral pathways and Ozone health (Teledermatology)	<a href="mailto:bdg-tr.dermatologysecretaries@nhs.net">bdg-tr.dermatologysecretaries@nhs.net</a> <a href="mailto:support@ozonehealth.co.uk">support@ozonehealth.co.uk</a>
Doncaster	Doncaster dermatology service. Email Dr Trupti Desai <a href="mailto:tdesai@nhs.net">tdesai@nhs.net</a>	2WW Referring with Images, Ozone health (Teledermatology) and Dermatoscopy	Dermatology referral pathways and Ozone health (Teledermatology)	<a href="#">Dermatoscopy referrals for GPs - Doncaster and Bassetlaw Teaching Hospitals</a> <a href="mailto:Dbth.dermsec@nhs.net">Dbth.dermsec@nhs.net</a> (Doncaster) dbth.dermsecsbdgh.nhs.net (Bassetlaw)
Rotherham	<a href="#">Ozone Health</a>	Ozone Health	Ozone Health	<a href="mailto:support@ozonehealth.co.uk">support@ozonehealth.co.uk</a>
Sheffield	Sheffield Teaching Hospitals	2WW Referring with Images, Teledermatology and Dermatoscopy	Dermatology referral pathways and teledermatology	<a href="#">Dermatology - Sheffield Teaching Hospital</a>

## 8. PATIENT INFORMATION

1. British Association of Dermatologists [PIL](#)
2. Primary Care Dermatology Society [PIL](#)
3. NHS Patient Information [PIL](#)
4. Fluorouracil 5% cream [PIL](#)
5. Fluorouracil 4% (Tolak®) cream [PIL](#)
6. Fluorouracil 0.5% & salicylic acid 10% (Actikerall®) cutaneous solution [PIL](#)
7. Diclofenac 3% (Solaraze®) gel [PIL](#)
8. Imiquimod 5% (Aldara®) cream sachets [PIL](#)
9. Imiquimod 5% (Bascellex®) cream sachets [PIL](#)
10. Imiquimod 3.75% (Zyclara®) cream sachets [PIL](#)
11. Tirbanibulin 1% (Klisyri®) ointment sachets [PIL](#)

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## 10. DOCUMENTATION CONTROLS

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