**Guidelines For The Prescribing Of Topical Antifungal Agents**

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<th><strong>Lead Author(s)</strong></th>
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**Consultation**

See consultation list on Page 2

**Presented for discussion, approval and ratification to**

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<th>October 2013</th>
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<td>Area Clinical Effectiveness Committee</td>
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**Change History**

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<td>Original version by Pharmaceutical Public Health Team</td>
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**Link with Standards for Better Health Domains**

- Safety (C4d, D1), Clinical & Cost effectiveness (C5a, C5c, C5d, D2a, D2b, D2d), Governance (C7a, C7b, C11a, C11c, D4a, D4b, D5a, D5b), Patient focus (C13a, D8, D9, D10), Public health (D13b)

**Link with Trust Purpose and Values statements**

- ‘We will support, deliver and develop our staff’
- ‘We will work to continuously improve services’
Guidelines For The Prescribing Of Topical Antifungal Agents

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Pharmaceutical Public Health Team

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Executive Summary
These guidelines are applicable to all healthcare professionals working within Dudley CCG who prescribe topical antifungal agents. The purpose is to provide brief guidance regarding the steps to be taken when assessing and prescribing these agents. This should result in:

Optimal outcomes for patient health
Safe, cost-effective prescribing of topical antifungal agents
Best use of resources available within primary care.

These guidelines will be subject to regular audit by the Pharmaceutical Public Health Team
Candida - skin

The diagnosis of candida infection of the skin is usually made from characteristic features, and investigations are usually unnecessary:

- Soreness and itching is usual.
- Commonly affected areas include skin flexures.
- Thin-walled pustules with a red base may be present.
- In flexural areas (intertrigo) the skin fold is typically red and moist.

An underlying cause should be excluded if the skin infection is widespread or recurrent. Causes which should be considered include:

- Use of systemic corticosteroids or antibiotic treatment.
- Psoriasis and seborrhoeic eczema.
- Immunocompromised.
- Diabetes mellitus.
- Iron deficiency anaemia.

Treatment

**PATIENT SHOULD BE ADVISED TO SEEK ADVICE FROM LOCAL COMMUNITY PHARMACY**

First-line treatment is a topical imidazole cream:

- **Clotrimazole 1% cream 20g** - apply thinly 2-3 times daily. Treatment should be continued for at least two weeks.
- **Miconazole 2% cream 30g** - apply twice daily. Treatment should be prolonged for 10 days after all lesions have disappeared to prevent relapse.

If inflammation or itch are particularly problematic, the addition of a mildly potent corticosteroid cream can be considered:

- **Clotrimazole 1% & Hydrocortisone 1% 30g** - apply thinly twice daily for a maximum of 7 days.
- **Miconazole 2% & Hydrocortisone 1% 30g** - apply 2-3 times daily.

*Prescribe as 30g- more cost effective than 15g sizes.

**Oral fluconazole** (dermal candidiasis- 50mg daily for 2-4 weeks) treatment should be considered for adults if:

- Topical treatment is not effective.
- The infection is widespread.
- The person is immunocompromised.

Referral to the Primary Care Dermatology should be considered in the following situations:

- Diagnostic uncertainty.
- No response to treatment.
- Recurrent or widespread infection with no identified underlying cause.
- Immunocompromised people should be treated as outlined above, but earlier referral may be appropriate.
Candida - oral

Oral candidiasis is a fungal infection of the oral mucosa, most commonly caused by *Candida albicans*.

Types of oral candidal infection include:
- Pseudomembranous oral candidiasis (often called oral thrush).
- Erythematous oral candidiasis (also known as atrophic oral candidiasis). Chronic erythematous oral candidiasis (denture stomatitis or chronic atrophic oral candidiasis).
- Median rhomboid glossitis
- Chronic plaque-like oral candidiasis (chronic hyperplastic oral candidiasis).

**Treatment**

* Nystatin 100,000 units/ml oral suspension for 30ml (prescribe as Nystan= for 30ml). Adults and children- 1ml four times daily. For prophylaxis in the newborn the suggested dose is 1 ml once daily.
* Miconazole 24mg/ml oral gel (See BNF for dose) 15g - 80g

In an adult with extensive or severe candidiasis, a course of *oral fluconazole* (See BNF for dose) should be prescribed. A specialist should be contacted for advice if a child has extensive or severe candidiasis.

Referral should be arranged, or a specialist contacted for advice, if the person:
- Has extensive or severe oral candidiasis.
- Does not respond adequately to treatment.
- Has recurrent episodes of oral candidal infection, or there is suspicion of immunocompromise.
- Referral for biopsy should be considered for people with chronic plaque-like oral candidiasis that is unresponsive to treatment.
Candida – female genital

- Vulvovaginal candidiasis is a symptomatic inflammation of the vagina and/or vulva caused by a superficial fungal infection (usually a Candida species), although other yeasts are occasionally implicated.
- Candida is part of the normal vulvovaginal flora in 20–50% of asymptomatic women.
- Recurrent episodes occur in 30% of women of childbearing age. About 1% of women have almost continuous symptoms.
- The main risk factors are antibiotics, pregnancy, and poorly controlled diabetes.
- Symptoms may include vulval itching (often the defining symptom), vulval soreness and irritation, vaginal discharge (usually non-offensive), superficial dyspareunia, and dysuria.
- Signs may include vulvovaginal inflammation, erythema, vaginal fissuring, and excoriation of the vulva. Vaginal discharge is often white, 'cheese-like', and non-offensive, but may be watery or purulent.
- Microscopy and fungal culture of vaginal secretions to identify yeasts is only recommended for supporting the diagnosis, and in cases of severe or recurrent vulvovaginal candidiasis, or treatment failure.
- Vulvovaginal candidiasis is not a sexually transmitted infection (STI). Partners do not need to be told, tested, or treated (unless they also have genital symptoms). Screening for STIs should be arranged if the woman is concerned or at risk.

Treatment

PATIENT SHOULD BE ADVISED TO SEEK ADVICE FROM LOCAL COMMUNITY PHARMACY

In uncomplicated infection, advice should be offered on:
- Avoidance of local irritants (such as soaps and shower gels).
- For treatment of vulval symptoms, a topical imidazole cream Clotrimazole 1% cream 20g-apply thinly 2-3 times daily should be considered.

Treatment of uncomplicated vaginal infection involves:
A short course of an intravaginal antifungal- clotrimazole 100mg, 200mg or 500mg pessary; clotrimazole 10% vaginal cream or miconazole 20mg/g cream or oral antifungal Fluconazole 150mg capsule (Do NOT prescribe as brand)

Treatment of severe vaginal infection involves:
Either two doses of fluconazole 150 mg capsules 3 days apart, or, if oral treatment is contraindicated, using one clotrimazole 500 mg pessary and repeat 3 days later.

If the woman is pregnant:
Oral antifungals should NOT be used.
Intravaginal clotrimazole 100mg, 200mg or 500mg pessary; clotrimazole 10% vaginal cream or miconazole 20mg/g cream for at least 7 days are the treatments of choice.

Specialist advice should be sought or the woman referred to a specialist, if:
- Treatment failure is unexplained.
- Non-albicans Candida species infection is present.
- Systemic symptoms occur.
- The diagnosis is unclear.
Fungal nail infection

The organisms responsible for fungal nail infection are dermatophyte and non-dermatophyte moulds, and yeasts such as Candida. Dermatophyte moulds are responsible for the majority of cases.

Diagnosis is confirmed by positive fungal microscopy or culture of nail clippings or scrapings. Diagnosis **MUST** be confirmed before starting antifungal treatment.

Self-care alone may be sufficient for some people. This includes avoiding or minimizing exposure to situations which predispose to, or aggravate, fungal nail infection (for example prolonged or frequent exposure to warm, damp conditions or wearing occlusive footwear), keeping nails short, and maintaining good foot hygiene.

Drug treatment may be required if walking is uncomfortable or if the condition is causing significant psychological distress.

Topical treatment is inferior to systemic treatment, but there is still a 20-30% failure rate. Treatment with oral antifungal agents should only be prescribed when absolutely necessary, as they all have the potential to cause serious side effects e.g. liver failure.

**Treatment**

**PATIENT SHOULD BE ADVISED TO SEEK ADVICE FROM LOCAL COMMUNITY PHARMACY**

For dermatophyte nail infection:

- Mild superficial infection may be treated with **generic amorolfine 5% nail lacquer once weekly** *(for 5ml)* for 6 months (fingernail infections) or 9–12 months (toenail infections).
- If oral treatment is required, **terbinafine 250mg once daily**# for 6 weeks to 3 months is recommended first-line (oral **itraconazole 200mg once daily for 3 months** is an alternative).

# Terbinafine 250mg tablets for 14 tablets. Do **NOT** prescribe as Lamisil tablets for 14 tablets.

For candida infection:

- Mild superficial infection may be treated with **generic amorolfine 5% nail lacquer once weekly** for 6 months (fingernail infections) or 12 months (toenail infections).
- If oral treatment is required, **itraconazole** is recommended first-line (oral **terbinafine** is an alternative). See **BNF** for dose

For non-dermatophyte nail infections:

If self-care measures alone are not appropriate, an oral antifungal is recommended. **Terbinafine** and **itraconazole** are options for oral treatment, although neither is licensed for non-dermatophyte nail infection.

Referral to the **Primary Care Dermatology Service** may be required for:

- Children younger than 18 years of age who require oral antifungals (as treatments are not licensed in this group).
- Uncertain diagnosis.
- Unsuccessful treatment.
- A person who is immunocompromised.
Fungal skin infection - body and groin

Fungal infection of the skin (also known as ringworm or tinea) is caused by dermatophytes. Tinea corporis (fungal infection of the body) is usually caused by *Trichophyton rubrum*. Tinea cruris (fungal infection of the groin) is most commonly caused by autoinoculation from dermatophyte infection of the hands, feet, or nails and is caused by *Trichophyton rubrum*, *Trichophyton mentagrophytes*, or *Epidermophyton floccosum*.

Diagnostic tests are not usually required, but microscopy and culture of skin samples should be taken if:

- The diagnosis is unclear.
- The infection has not responded to standard topical antifungals.
- Oral antifungal treatment is being considered.

**Treatment**

**PATIENT SHOULD BE ADVISED TO SEEK ADVICE FROM LOCAL COMMUNITY PHARMACY**

Recommended treatment is topical imidazole:

- **Clotrimazole 1% cream 20g**- apply thinly 2-3 times daily. Treatment should be continued for at least one month
- **Miconazole 2% cream 30g***- Apply twice daily. Treatment should be prolonged for 10 days after all lesions have disappeared to prevent relapse
  
  or topical terbinafine
- **Terbinafine 1% cream 30g***- apply once or twice daily for 1-2 weeks

For skin that is particularly inflamed, a topical antifungal may be combined with a mildly potent corticosteroid (for up to seven days).

- **Clotrimazole 1% & Hydrocortisone 1% 30g** - apply thinly twice daily for a maximum of 7 days
- **Miconazole 2% & Hydrocortisone 1% 30g**- apply 2-3 times daily

*Prescribe as 30g- more cost effective than 15g sizes

**Oral antifungal treatment** (terbinafine, griseofulvin, or itraconazole - See BNF for doses) is an option in adults if severe or extensive disease is present (referral is often indicated) or if topical treatment has failed. A positive microscopy or a positive culture of skin scrapings is recommended before starting treatment.

Any associated fungal nail infection should be treated at the same time to prevent re-infection.

Referral to a dermatologist may be required for:

- Uncertain diagnosis.
- Unsuccessful treatment.
- Severe or extensive infection.
- Recurrent infection.
- A person who is immunocompromised
Fungal skin infection - foot

Fungal infection of the foot (athlete's foot or tinea pedis) is a superficial skin infection of the feet and toes, predominantly caused by dermatophytes.

Diagnosis of athlete’s foot is usually made on the basis of clinical appearance. Diagnostic tests are not usually required. Types of athlete’s foot include:

- Interdigital (most common, usually caused by *Trichophyton rubrum*) - characterized by white, cracked, or macerated areas between the toes.
- Moccasin (usually caused by *Trichophyton rubrum*) - diffuse, scaling pattern involving the entire sole and side of the foot.
- Vescicobullous (least common, usually caused by *Trichophyton mentagrophytes*) - mainly on the soles of the feet.

Treatment

**PATIENT SHOULD BE ADVISED TO SEEK ADVICE FROM LOCAL COMMUNITY PHARMACY**

Recommended treatment is topical imidazole:

- **Clotrimazole 1% cream 20g** - apply thinly 2-3 times daily. Treatment should be continued for at least one month.
- **Miconazole 2% cream 30g** - Apply twice daily. Treatment should be prolonged for 10 days after all lesions have disappeared to prevent relapse.

or topical terbinafine

- **Terbinafine 1% cream 30g** - apply once or twice daily for 1-2 weeks.

If inflammation is marked, a topical antifungal may be combined with a mildly potent corticosteroid for up to seven days.

- **Clotrimazole 1% & Hydrocortisone 1% 30g** - apply thinly twice daily for a maximum of 7 days.
- **Miconazole 2% & Hydrocortisone 1% 30g** - apply 2-3 times daily.

*Prescribe as 30g - more cost effective than 15g sizes.

**Oral antifungal treatment** (terbinafine, griseofulvin, or itraconazole - See BNF for doses) is an option in adults if severe or extensive disease is present (referral is often indicated) or if topical treatment has failed. A positive microscopy or a positive culture of skin scrapings is recommended before starting treatment.

Any associated fungal nail infection should be treated at the same time to prevent re-infection.

Referral to a dermatologist may be required if:

- The diagnosis is uncertain.
- There is no response to primary care management.
- Infection is severe or extensive.
- The person is immunocompromised.
Fungal skin infection – scalp

Features suggestive of scalp ringworm (tinea capitis) include an itchy, scaly scalp; lymphadenopathy; and patchy, irregular hair loss. In some people, a more severe inflammatory reaction can occur, causing complications such as erythema and pustular boggy masses (kerion).

A positive microscopy or a positive culture of skin scrapings is recommended before starting treatment.

**Treatment**

Management options for scalp ringworm include:

- An oral antifungal *(griseofulvin (licensed) or oral terbinafine (off-label) - See BNF for doses)* are recommended first line for adults. Specialist advice is recommended before starting oral antifungal treatment in children.

- A topical antifungal treatment *(e.g. ketoconazole shampoo 120ml- apply twice weekly for 2-4 weeks, or topical terbinafine cream 30g once or twice daily for 1-2 weeks)*, in addition to oral antifungal treatment, during the first 2 weeks of treatment to reduce transmission.

- Removal of crusts if itch or secondary infection are problematic (crusts can be softened by soaking in lukewarm water or saline, before removal).

- An oral antibiotic such as flucloxacinil (refer to NHS Dudley antibacterial guidelines) and an antifungal cream active against Gram-positive organisms such as clotrimazole if secondary infection is present.

Samples for microscopy and culture should also be taken from household members and close contacts.

If symptomatic, contacts should be treated with an oral antifungal

If asymptomatic, but a carrier, topical treatment with selenium sulphide, ketoconazole shampoo or povidone iodine shampoo *(See BNF for doses)* may be sufficient. In carriers with heavy fungal growth or high spore count, oral antifungal treatment may be needed; specialist advice from a dermatologist should be taken.

If a kerion (pustular boggy mass) is suspected, immediate referral to dermatology is recommended.

Other indications for referral *(urgently or routinely depending on the clinical circumstances)* include:

- Uncertain diagnosis, or guidance on treatment is required.
- No response to primary care management.
- Severe or extensive infection, or presence of scarring.
- Recurrent infection.
- A person who is immunocompromised.
**Pityriasis versicolor**

Pityriasis versicolor (also known as tinea versicolor) is a common fungal infection of the skin that is localized to the stratum corneum. The cause is yeasts of the genus *Malassezia*, which are normal skin flora in more than 90% of adults.

Pityriasis versicolor is characterized by macules and patches.

The diagnosis can be confirmed by microscopy, although this is not usually necessary.

**Treatment**

Initial treatment for pityriasis versicolor is with a topical antifungal.

**Ketoconazole Shampoo 120ml- apply once daily for 5 days** or **selenium sulphide shampoo (unlicensed)**

For small areas an imidazole cream can be used.

**Clotrimazole 1% cream 20g apply thinly 2-3 times daily. Treatment should be continued for 2-3 weeks**

**Miconazole 2% cream 30g* Apply twice daily. Treatment should be continued for 2-3 weeks**

**Ketoconazole 2% cream once or twice daily for 2-3 weeks** (except for seborrhoeic dermatitis and pityriasis versicolor and endorsed 'SLS')

*Prescribe as 30g- more cost effective than 15g sizes

If pityriasis versicolor is extensive, or if topical treatment is ineffective, an oral antifungal drug (such as itraconazole or fluconazole - See BNF for doses) may be used for adults and children older than 12 years.

Changes in skin pigmentation usually fully resolve within 2–3 months of starting antifungal treatment (but may persist for longer periods).

For people prone to developing recurrent patches of pityriasis versicolor when exposed to warm humid environments or sunshine, prophylactic treatment (for example, ketoconazole 2% shampoo once daily for a maximum of 3 days) prior to such exposure may help prevent recurrence.

References:


### SUMMARY TABLE FOR PRESCRIBING OF TOPICAL ANTIFUNGAL AGENTS

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(Refer to BNF for dosage and further information)
**Fungal skin and nail infections: Diagnosis and laboratory investigation**

Quick reference guide for primary care: Summary table

- Many nail problems can look like fungal infections, eg psoriasis or injury. Always send samples before starting long-term treatment, as only 45% of dermatology samples received are positive for fungal infections.  
- Microscopy detects 91% of positives, and provides the most rapid diagnosis.  
- Culture distinguishes dermatophyte from non-dermatophyte moulds, which is important as this may alter treatment.

### WHEN SHOULD I TAKE DERMATOLOGICAL SAMPLES FOR FUNGI?

- Samples are not needed for:
  - uncomplicated Athlete’s foot (tinea pedis)
  - mild infections of the groin; if samples are not taken, treat as suspected Candida or Erythrasma with topical imidazole
  - mild skin ringworm
- Take samples for fungi:
  - when oral treatment is being considered (scalp ringworm or nail disease)
  - in severe or extensive skin fungal infections, eg moccasin-type Athlete’s foot
  - skin infections refractory to initial treatment, as occasionally gram negative bacterial infections cause interdigital cracking that looks like tinea pedis  
  - when the diagnosis is uncertain
- Ensure clinical details are stated, including treatment, animal contact, and overseas travel.

### HOW SHOULD I TAKE SAMPLES FOR FUNGAL INVESTIGATION?

- Swabs are of little value for dermatophytes, unless there is insufficient material obtained by scraping.
- Wipe off any treatment creams before sampling.
- Keep any samples at room temperature. Do not refrigerate as dermatophytes are inhibited at low temperatures, and humidity facilitates the growth of contaminants.
- Samples should be collected into folded dark paper squares. Secure dark paper squares with a paper clip and place in a plastic bag, or use commercially available fungal packets, eg Mycotrans, Dermaphar.
- Skin scrapings:
  - scrape skin from the advancing edge of lesion; use a blunt scalpel blade or similar
  - 5mm² of skin flakes are needed for microscopy and culture
- Nail samples (better taken by clinicians):
  - most viable fungi are usually found in the most proximal part of diseased nail; sample with chiropody scissors
  - include full thickness clippings of the diseased nail
  - sample as far back from nail tip as possible, as this is where fungi are usually found; also sample debris from under the diseased part of the nail
  - in superficial infections, scrape surface of diseased nail plate with scalpel blade
- Hair samples:  
  - take scalp scrapings, as this often pulls out infected hair stumps, which are critical for successful culture and microscopy; hair plucking does not produce the best samples.
  - a soft toothbrush can be used if scrapings are not possible.

### INTERPRETING THE LABORATORY REPORT

- **When to treat:**
  - a positive microscopy (fungal elements seen) is sufficient to start antifungals
  - a positive dermatophyte culture with negative microscopy is still significant
  - a negative microscopy or culture does not rule out fungal infection, particularly with kerion and nail infections; if clinical appearance very suggestive of fungal infection, repeat sample and start treatment.
- Significant fungi isolated and reported:
  - the most common dermatophytes from foot or trunk infections are *T. rubrum* (80%) and *T. interdigitale* (15%)
  - *Epidermophyton floccosum* and *Microsporum* species are also encountered
  - *T. tonsurans* and *T. violaceum* cause 80% of scalp infections in the UK
  - *Scytalidium* spp. are the most common non-dermatophyte moulds that can cause both skin and nail infections
  - true nail infections with the yeasts *C. albicans* and *C. parapsilosis* are rare and are more likely to affect the finger nail or finger nail folds; other *Candida* spp. may very rarely cause paronychia
  - Fungi of uncertain clinical significance:
    - non-dermatophyte moulds (eg *Aspergillus* spp., *Scopulariopsis* spp., *Acremonium* spp.) are very rare
Fungal skin and nail infections: Diagnosis and laboratory investigation
Quick reference guide for primary care: Summary table

- causes of nail infection, usually following nail trauma, immunosuppression, or underlying dermatophyte infection; discuss management with a local microbiologist or dermatologist
  - such a diagnosis requires positive direct microscopy, isolation of the organism in pure culture, and ideally, on repeated occasions
  - repeat sample usually requested to confirm significance of non-dermatophyte moulds
- Antifungal susceptibilities: 10d, 15d, 15h, 15k, 16a
  - susceptibility testing of dermatophytes is not required, as antifungal resistance is rare, and there is no known correlation between antifungal susceptibilities and outcome

## TREATING FUNGAL SKIN AND NAIL INFECTIONS

- For non-dermatophyte moulds other than Candida spp. seek the advice of a microbiologist or dermatologist.
  - Dermatophyte and candida infection of the fingernail or toenail: 17a, 18a, 19a
    - treat only if infection confirmed by laboratory; only use topical treatment if superficial infection of the top surface of nail plate; 5% amorolfin nail lacquer; 1-2 times weekly; 6 months on fingers; 12 months on toes
    - for infections with dermatophytes use oral terbinafine: 250mg OD; 6-12 weeks on fingers; 3-6 months on toes; or itraconazole: 200mg BD; 2 courses of 7 days a month for fingers; 3 courses of 7 days a month for toes
    - for infections with candida or non-dermatophyte moulds use oral itraconazole
    - Idiosyncratic liver and other severe reactions occur very rarely with terbinafine and itraconazole
    - for children, seek specialist advice
- Dermatophyte infection of the skin: 17a, 18a, 20a
  - take skin scrapings for culture
  - as terbinafine is fungicidal, one week is as effective as 4 weeks azole which is fungistatic; topical 1% terbinafine; 1-2 times daily; 1 week
  - if intractable, consider oral terbinafine
  - discuss scalp infections with specialist
  - use a 1% azole cream for groin infections; 1-2 times daily; 4-6 weeks
  - topical undecenoic acid or 1% azole; 1-2 times daily; 4-6 weeks
- Candida infection of skin: 20a
  - confirm by laboratory
  - treat with 1% azole cream; use lotion if treating paronychia; 1-2 times daily; 1 week, or in case of paronychia, until swelling goes
  - seek advice for nail infection
- *Pityriasis versicolor*: 19a
  - scratching the surface of the lesion should demonstrate mild scaling
  - 1% azole cream; 1% terbinafine or shampoo containing ketoconazole; 1-2 times daily; usually 1 week
- Follow-up: unless there is underlying disease, eg psoriasis, eradication of the fungus generally restores the nail to its pre-infection state. 40 Siblings of children with scalp ringworm should be screened by scalp brushing.

**KEY:** ☒ = good practice point
Fungal skin and nail infections: Diagnosis and laboratory investigation
Quick reference guide for primary care: Summary table

GRADING OF GUIDANCE RECOMMENDATIONS

The strength of each recommendation is qualified by a letter in parenthesis. This is an altered version of the grading recommendation system used by SIGN.

<table>
<thead>
<tr>
<th>STUDY DESIGN</th>
<th>RECOMMENDATION GRADE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good recent systematic review and meta-analysis of studies</td>
<td>A+</td>
</tr>
<tr>
<td>One or more rigorous studies; randomised controlled trials</td>
<td>A-</td>
</tr>
<tr>
<td>One or more prospective studies</td>
<td>B+</td>
</tr>
<tr>
<td>One or more retrospective studies</td>
<td>B-</td>
</tr>
<tr>
<td>Non-analytic studies, e.g. case reports or case series</td>
<td>C</td>
</tr>
<tr>
<td>Formal combination of expert opinion</td>
<td>D</td>
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</tbody>
</table>

This guidance was originally produced in 2009 by the South West GP Microbiology Laboratory Use Group, in collaboration with the Association of Medical Microbiologists, general practitioners, nurses and specialists in the field. This guidance was reformatted in 2017 in line with PHE recommendations. For detailed information regarding the comments provided and action taken, please email sarah.alton@phe.gov.uk. Public Health England works closely with the authors of the Clinical Knowledge Summaries.

If you would like to receive a copy of this guidance with the most recent changes highlighted, please email sarah.alton@phe.gov.uk.

For detailed information regarding the search strategies implemented and full literature search results, please email sarah.alton@phe.gov.uk.
Reference:


   RATIONALE: An excellent well-referenced comprehensive review of the management of fungal skin and nail infections.


   RATIONALE: Erythasma is due to a Gram-positive bacterium *Corynebacterium minutissimum* that produces porphyrins and therefore fluoresces and characteristic coral-pink colour under a Wood’s light. Azoles are effective for the treatment of erythasma as they are active against Gram-positive bacteria.


RATIONALE: There are three reasons for not refrigerating specimens. Firstly, it is important to keep skin, hair, and nail samples dry as this reduces bacterial growth, and refrigeration and warming to room temperature might increase humidity. Secondly, storage at room temperature is simpler, and most specimens are sent in the ordinary post, which is all at room temperature. Finally, low temperatures do affect the growth of some dermatophytes, *Malassezia* species, and a very few candidas.


**RATIONALE:** This large study including 1,361 patients, includes the treatment of patients with dermatophytes, *Candida albicans*, and *Malessezia furfur* (*Pityrosporum orbiculare*), the causative agent of *Pityriasis versicolor*.