Skin and soft tissue infections in adults

Prescribing information: these guidelines do not include all the prescribing information for all the drugs. Please refer to the BNF or consult a pharmacist for appropriate use in specific populations, for example, hepatic impairment, renal impairment, pregnancy and breastfeeding.

Self-care: treatments marked as [OTC] are available to buy from pharmacies. Patients can be advised to purchase them as self-care where appropriate.

Guidelines about COVID-19: use COVID-specific guidance issued by NICE during the COVID pandemic.

Acne vulgaris

Self-care advice: wash with pH neutral or slightly acidic cleanser and lukewarm water not more than twice a day, avoid oil-based skin care products, avoid harsh exfoliation, always remove makeup at the end of each day and advise that persistent picking or scratching of lesions can increase the risk of scarring.

Refer urgently to be assessed within 24 hours if acne fulminans is suspected.

Refer to a consultant dermatologist-led team in cases of:

- diagnostic uncertainty
- acne conglobate or nodulo-cyctic acne
- mild to moderate acne that has not responded to two completed 12-week courses of treatment
- moderate to severe acne that has not responded to previous treatment including an oral antibiotic
- acne with scarring or persistent pigmentary changes.

Do NOT use the following to treat acne:

- Monotherapy with a topical antibiotic
- Monotherapy with an oral antibiotic
- A combination of topical antibiotic with and oral antibiotic

Offer a 12-week course of 1 of the following first line treatments:

For mild acne:

0.1% **or** 0.3% adapalene with 2.5% benzoyl peroxide (Epiduo®) applied OD in the evening (May cause skin irritation, photosensitivity and bleaching of the hair/fabrics, **not suitable in pregnancy, caution in breastfeeding**) for 12 weeks

For mild to moderate acne:

3% **or** 5% benzoyl peroxide with 1% clindamycin applied OD in the evening (can be used in caution during pregnancy and breastfeeding) for 12 weeks

or

0.025% tretinoin with 1% clindamycin (Treclin®) applied OD in the evening (**not suitable in pregnancy or breastfeeding**) for 12 weeks

For moderate to severe acne:

All treatments are **not suitable in pregnancy or breastfeeding**

Continued below

Consider choice of treatment in pregnancy and/or breastfeeding. Do NOT use Epiduo®, tretinoin or any oral retinoids or antibiotics. Consider appropriate contraceptive use in women of childbearing age. Oral isotretinoin should not be used unless adequate courses of systemic antibiotic and topical therapy have been tried in line with MHRA guidance Treatment with oral isotretinoin is specialist/secondary care only. NICE CKS Acne vulgaris NICE NG198 Acne vulgaris: management Last updated: Nov 2021	**Option 1:** 0.1% **or** 0.3% adapalene with 2.5% benzoyl peroxide (Epiduo®) applied OD in the evening for 12 weeks **plus *either*;** Oral lymecycline 408 mg OD for 12 weeks **or** Oral doxycycline 100mg OD for 12 weeks **Option 2:** Topical 15% **or** 20% azelaic acid applied BD for 12 weeks **plus *either;*** Oral lymecycline 408 mg OD for 12 weeks **or** Oral doxycycline 100mg OD for 12 weeks (Oral tetracyclines may cause photosensitivity) **Second line**: Consider use of 12-week course of monotherapy with benzoyl peroxide 5% (Acnecide®) OD – BD if first line treatments are contraindicated or the person wishes to avoid retinoid or antibiotic treatment. For those with moderate to severe acne who cannot tolerate or have contraindications to oral lymecycline or doxycycline, consider replacing these with trimethoprim 300mg BD **or** erythromycin 500mg BD for 12 weeks. Combined oral contraceptives (if not contraindicated) in combination with topical agents may be used for moderate to severe acne as an alternative to antibiotics in women.

Bites (Human and animal)

Thorough irrigation is important. Seek immediate advice from consultant for anyone considered to be at risk of HIV or hepatitis B. Consider the need for tetanus or rabies prophylaxis.	**Treatment (5 days) and prophylaxis (3 days)**: co-amoxiclav 500/125 mg TDS **Continued below**

Managing a bite involves:

- Removal of any foreign bodies (for example teeth) from the wound.
- Encouraging a wound that has just occurred to bleed, unless it is already bleeding freely.
- Thorough irrigation with warm, running water.
- Considering the need for debridement.
- Advising appropriate analgesia (ibuprofen or paracetamol OTC) for pain relief, if required

Antibiotic prophylaxis for an uninfected bite

DO NOT OFFER ANTIBIOTICS FOR A BITE THAT HAS NOT BROKEN THE SKIN

Human – consider antibiotics if the bite has broken the skin but not drawn blood only in high-risk areas (including hands, face, feet, genitals, skin covering cartilaginous structures or poor circulation) or high risk patients (e.g. those at risk of serious wound infection due to co-morbidities such as diabetes, immunosuppression, asplenia or decompensated liver disease). Always offer antibiotics if the bite has drawn blood.

Cat bite - consider antibiotics if the bite as broken the skin but not drawn blood only if the wound could be deep. Always offer antibiotics if the bite has drawn blood.

Dog bite – only offer antibiotics if the bite has caused considerable, deep tissue damage or is visibly contaminated, or if it is in a high risk area or a person who is high risk.

Laboratory testing: wound swab, please include details of the bite injury to allow optimum detection of pathogens.

NICE Guidance Human and Animal Bites Visual Summary (Nov 2020)

Last updated: Dec 2021

Co-amoxiclav 250/125mg TDS may be used for prophylaxis only.
Course length can be increased to 7 days with a clinical review.

In penicillin allergy: doxycycline 100 mg BD **and**
metronidazole 400 mg TDS (human and animal)

In pregnancy: obtain microbiology advice in penicillin allergy.

Bites (Insect bites and stings)

Self-care: the range of self-care treatments and their licensed indications have not been considered. A community pharmacist is ideally placed to advise people about managing an insect bite or sting at home. **Patient advice**: skin redness and itching are common and may last for up to 10 days; it is unlikely that the skin will become infected; avoid scratching to help reduce inflammation and the risk of infection; seek medical help if symptoms worsen rapidly or significantly at any time, or they become systemically unwell. **Consider referral**: systemically unwell; severe immunocompromise and symptoms or signs of an infection; previous systemic allergic reaction to the same type of bite or sting; mouth or throat, or around the eyes; caused by an unusual or exotic insect; fever or persisting lesions associated with a bite or sting that occurred while travelling outside the UK. Last reviewed: Dec 2021 NICE Insect bites and stings 1 page visual summary	Most insect bites and stings will not need antibiotics. **Self-care**: [OTC] antihistamines may be effective for itch. **If infection is likely**: flucloxacillin 500 mg QDS for 7 days. May be increased to 1 g QDS (unlicensed dose). **Penicillin allergy**: clarithromycin 500 mg BD for 7 days **or** doxycycline 200 mg on day 1, then 100 mg daily for 7 days in total **or** erythromycin 500 mg QDS for 7 days (preferred in pregnancy) **In severe or not responding cellulitis**: co-amoxiclav 500/125 mg TDS 7 days **or** clindamycin 300 mg QDS 7 days (can be increased to 450 mg QDS). **If MRSA**: treat according to sensitivities.

Boils

Also see recurrent boils. Drainage is advised. Last updated: Dec 2021	Antibiotics are not indicated if cellulitis has been excluded unless the patient is immunocompromised or clinically worsening, or the abscess is > 5 cm. Then give oral antibiotics as per cellulitis treatment guidelines for 7 days. [5,6]

Boils, recurrent, associated with carriage of Staph. Aureus

Consider taking a swab of pus from the contents of the lesion if the boil or carbuncle is: Not responding to treatment. There are multiple lesions. The person is immunocompromised, known to be colonized with MRSA or has diabetes Ask for PVL testing to be carried out. Mupirocin resistance should be discussed with a specialist. **Self care**: Advise patient to change sheets and towels daily on a hot wash cycle (above 55°C). The clothes should be turned inside out, and the machine not overloaded so that the water can circulate, vacuum and dust regularly, particularly in the bedrooms. Use pump-action liquid soap and avoiding bar soaps, use his or her own towel and flannel, and rinse the flannel in hot water before use and clean the sinks and bath with a disposable cloth and detergent after use and rinse clean. To prevent further re-infection advise the person to take daily showers/baths, wash hands regularly with soap and water, change clothes regularly, avoid sharing towels, face cloths, razors, toothbrushes, wash sports clothes after each use and in saunas and gyms to sit on a clean towel and wash the towel after use. Last updated: Dec 2021	DO NOT START DECOLONIZATION UNTIL ACUTE INFECTION HAS RESOLVED. For confirmed staphylococcal nasal carriage: chlorhexidine 4% body wash/shampoo OD as liquid soap in the bath, shower or sink for 5 days.[5] **and either** chlorhexidine 0.1% with neomycin 0.5% (Naseptin®) QDS for 10 days **or** mupirocin 2% nasal ointment TDS for 5 days

Candida-associated angular stomatitis or cheilitis

Advise patient to seek dentist advice. Commonly associated with denture stomatitis. May be seen in nutritional deficiency or HIV infection. If failure to respond to 1–2 weeks of treatment investigate the possibility of underlying disease. Last updated: Dec 2021	Encourage appropriate denture fit and cleaning, and oral hygiene. Miconazole 2% cream BD then continue for 10 days after lesions healed.

Cellulitis and erysipelas

Exclude other causes of skin redness (inflammatory reactions or non-infectious causes). Manage underlying conditions such as diabetes, venous insufficiency, eczema and oedema. Consider taking a swab for culture if skin is broken and uncommon pathogen is suspected, or not responding to antibiotic treatment. A longer course (up to 14 days in total] may be needed but skin takes time to return to normal and full resolution at 7 days is not expected. Reassessment is needed if symptoms worsen rapidly, or do not start to improve in 2 to 3 days. Refer to hospital if patient is severely unwell or has lymphangitis, or patient has symptoms or signs of a more serious illness such as orbital cellulitis, osteomyelitis, septic arthritis, necrotising fasciitis. Do not routinely offer antibiotics to prevent recurrent cellulitis or erysipelas If river or sea water exposure, discuss with a microbiologist. **Laboratory testing**: not usually required. Last reviewed: Dec 2021	**First line**: flucloxacillin 500 mg – 1 g QDS for 7 days. **In severe or not responding cellulitis**: co-amoxiclav 500/125 mg TDS 7 days **or** clindamycin 300 mg QDS 7 days (can be increased to 450 mg QDS). **Penicillin allergy**: clarithromycin 500 mg BD for 7 days **or** doxycycline 200 mg on day 1, then 100 mg daily for 7 days in total **or** erythromycin (preferred in pregnancy) 500 mg QDS for 7 days. **If MRSA**: treat according to sensitivities.

Cellulitis, facial (non-dental)

Review response to treatment after 7 days. If slow response, continue for further 7 days. **Consider urgent referral if:** Infection around eyes or nose is more concerning because of potentially serious intracranial complications. Last reviewed: Dec 2021	Clinical review at 48 hours as not all pathogens are covered. **First line**: co-amoxiclav 500/125 mg TDS for 7 days. **Non-severe penicillin allergy:** cefalexin 500 mg TDS for 7 days **and** metronidazole 400 mg TDS for 7 days **Severe penicillin allergy:** clarithromycin 500 mg BD for 7 days **and** metronidazole 400 mg TDS for 7 days. **Penicillin allergy in pregnancy**: seek microbiology advice.

Cellulitis, facial (with suspected dental involvement)

Refer to a dental practitioner or maxillofacial department. Last reviewed: Dec 2021	

Chickenpox (varicella zoster) and Shingles (herpes zoster)

Pregnant/immunocompromised/neonate: seek urgent specialist advice. **Chickenpox**: consider aciclovir if onset of rash < 24 hours and one of the following: > 14 years of age; severe pain; dense/oral rash; taking steroids; smoker. Give paracetamol for pain relief. **Shingles**: treat if > 50 years (PHN rare if <50 years) and within 72 hours of rash, or if 1 of the following: active ophthalmic; Ramsey Hunt; eczema; non-truncal involvement; moderate or severe pain; moderate or severe rash. Shingles treatment if not within 72 hours: consider starting antiviral drug up to 1 week after rash onset, if high risk of severe shingles or continued vesicle formation; older age; immunocompromised; or severe pain. Last reviewed: Dec 2021	**First line for chicken pox and shingles**: aciclovir 800 mg five times daily for 7 days. **Alternative if poor compliance**: valaciclovir 1 g TDS for 7 days.

Cold sores (herpes simplex)

Most cold sores resolve after 5 days without treatment. Topical antivirals applied prodromally can reduce duration by 12 – 18 hours. Last reviewed: Dec 2021	Encourage self-care with over the counter medicines for self-limiting conditions. **If frequent, severe, and predictable triggers**: *consider oral prophylaxis,* aciclovir 400 mg BD for 5 - 7 days.

Dermatophyte infection: nail

Encourage self-care with over the counter medicines for self-limiting conditions and management strategies including wearing well-fitting non-occlusive shoes, without high heels or narrow toes. Consider replacing old footwear which could be contaminated with fungal spores and wear cotton, absorbent socks.

Maintain good foot hygiene, including prompt treatment of any associated tinea pedis.

Wear protective footwear when using communal bathing places, locker rooms, and gymnasiums, to avoid re-exposure.

Avoid prolonged or frequent exposure to warm, damp conditions if possible.

To prevent recurrence apply weekly 1% topical antifungal such as clotrimazole cream to the entire area.

If topical treatment is appropriate advise on the use of amorolfine 5% which can be purchased over-the-counter.[7]

Send nail clippings to the laboratory. Treat with oral antifungals only if laboratory confirms infection. [1,2,3] Oral terbinafine is more effective than oral azole. [1,2,3] If candida or non-dermatophyte infection is confirmed use oral itraconazole. [1,2,3] Topical nail lacquer is not as effective.[1,3]

Liver reactions 0.1% to 1% with oral antifungals. [1,2] When prescribing terbinafine LFTs should be performed and periodic monitoring (before and every 4-6 weeks of treatment). Consider LFTs for itraconazole particularly in patients with acute liver disease or a history of hepatotoxicity with other drugs.

Patients are advised to report immediately any signs of hepatotoxicity including unexplained nausea, decreased appetite, fatigue, vomiting, jaundice, or dark urine.[8]

Patients should be re-evaluated 3–6 months after treatment initiation and further treatment should be given if the disease persists. [4]

Last updated: Dec 2021

If dermatophyte nail infection is confirmed

First line: terbinafine 250 mg OD [1,2,3]

Fingers: minimum of 6 weeks

Toes: 12 weeks

Second line: itraconazole 200 mg BD for one week per month [1,2,3]

Fingers: 2 courses

Toes: 3 courses

If Candida or non-dermatophyte nail infection is confirmed

First line: itraconazole 200 mg BD for one week per month (unlicensed) [7]

Fingers: 2 courses

Toes: 3 courses

Dermatophyte infection: skin

Encourage self-care with over the counter medicines for self-limiting conditions and management strategies including wearing loose fitting clothes maintain good hygiene and washing affected skin areas daily, dry skin thoroughly especially in skin folds, avoid scratching the affected skin. Do not share towels and wash them frequently to reduce risk of transmission, wash clothes and bed linen frequently.

Refer to a dermatologist if extensive. [3]

Skin scrapings for culture and microscopy are not indicated in cases of uncomplicated athlete's foot, mild skin ringworm or mild groin infections. Samples for fungal culture are indicated when oral treatment is being considered: [3]

- Scalp ringworm or nail disease.
- Severe or extensive skin fungal infections, e.g., moccasin-type Athlete's Foot]
- Infections refractory to initial treatment.
- When the diagnosis is uncertain.

Commence treatment if microscopically positive and review once culture results available. [3]

Last updated: Dec 2021

First line: for mild, non-extensive disease terbinafine 1% cream BD. [1,2,3]

If candida possible: clotrimazole 1% cream BD. [1,2,3]

Apply cream beyond the margin of the lesions for 1 to 2 weeks. Continue treatment for at least 7 days after lesions have healed. [3]

Intractable and laboratory confirmed infection: oral terbinafine 250 mg OD for 4 weeks. [1,2]

Dermatophyte infection: scalp

Self-care management strategies include softening any surface crusts (for example, by applying moistened dressings to affected areas), and then gently tease away. Discard or disinfect objects that can transmit fungal spores, such as hats, scarves, hairbrushes, combs, pillows, blankets, and scissors, to prevent re-infection or transmission of infection to others. Do not share towels, and ensure they are washed frequently. Parents or carers should inspect the scalps of other children and household contacts regularly for clinical signs of infection, and manage appropriately. If a household pet is suspected of being the source of infection, it should be assessed and treated by a vet. Arrange an urgent referral to dermatologist if the person has suspected kerion. [1,2,3] Send hair and scalp scrapings for laboratory confirmation before commencing systemic therapy. Commence treatment if microscopically positive and review once culture results available. [1,2,3] Last updated: Dec 2021	**First line**: terbinafine 250 mg OD for 4 weeks. [3]

Diabetic foot infection

In diabetes, all foot wounds are likely to be colonised with bacteria. [9]

Diabetic foot infection has at least 2 of:

- local swelling or induration
- erythema
- local tenderness or pain
- local warmth
- purulent discharge

Start antibiotic treatment for people with suspected diabetic foot infection as soon as possible. **Take samples for microbiological testing before, or as close as possible to, the start of antibiotic treatment**. When microbiological results are available review the choice of antibiotic and change the antibiotic according to results, using a narrow-spectrum antibiotic, if appropriate. [9]

A longer course (up to a further 7 days) may be needed based on clinical assessment. However, skin does take some time to return to normal, and full resolution of symptoms at 7 days is not expected. Review need for continued antibiotics regularly. [9]

Last reviewed: Dec 2021

Immediate hospital referral and inform multi-disciplinary foot care service if there are limb- or life-threatening problems: fever; sepsis; limb ischaemia; deep soft tissue infection; bone infection; gangrene. [9]

Mild infection: 0.5 to less than 2 cm erythema; does not involve deeper structures; no signs of systemic inflammatory response. [9] Refer to foot service stating the patient has diabetes and a new ulcer [3,9]. Reassess if symptoms worsen or fail to improve within 1 to 2 days. [9]

First line: flucloxacillin 500 mg to 1 g four times a day for 7 days (1 g dose is off-label). [9]

Alternative (penicillin allergy): clarithromycin 500 mg twice a day for 7 days

or
doxycycline 200 mg on day 1, then 100 mg daily (can be increased to 200 mg daily) for 7 days in total

or
erythromycin (preferred in pregnancy) 500 mg four time a day for 7 days.[7]

Consider adding metronidazole 400 mg TDS if anaerobic infection is suspected. [3]

Ductal candidiasis [18]

Miconazole or clotrimazole are the preferred topical antifungals as there is less resistance than with nystatin. Ketoconazole should be avoided as it is potentially hepatotoxic to the infant. Residual cream has to be removed with oil before each feed and then re-applied after feeding. Additional topical corticosteroids can be considered. Last updated: May 2021	**Initial treatment: women with nipple damage only and suspected candida infection:** miconazole 2% cream after every breastfeed for 14 days **or** clotrimazole 1% cream TDS for 14 days. **If nipple is red and inflamed**: hydrocortisone 1% cream in addition to topical antifungal. **If topical therapy fails, or the mother has refractory symptoms or breast pain with other evidence of Candida infection, or the baby has definite thrush:** oral fluconazole 150-300 mg as a single dose followed by 50-100mg BD for 10-14 days (unlicensed). **Infant care**: treat oral thrush (refer to NICE Guidance for paediatric treatment).

Eczema (bacterial)[18]

Manage underlying eczema and flares with treatments such as emollients and topical corticosteroids whether antibiotics are given or not. In people who are not systemically unwell, do NOT offer either topical or oral antibiotics for secondary bacterial infection of eczema. If an antibiotic is appropriate, consider severity and the extent of infection, previous use and potential of antimicrobial resistance. **Do not routinely take a skin swab**. If infection is recurring frequently, consider sending a skin swab for microbiological testing. **Refer urgently (within 2 weeks) if infected eczema has not responded to treatment.** If MRSA suspected or confirmed seek specialist advice. NICE Bacterial infection of eczema visual summary (2021) Last updated: Dec 2021	**Topical treatment for localised infections only:** **First line:** fusidic acid 2% apply TDS for 5 to 7 days **If systemically unwell:** flucloxacillin 500mg QDS for 5 to 7 days **Penicillin allergy:** clarithromycin 250mg BD (increased to 500mg BD in severe infection) for 5 to 7 days **or** erythromycin 250-500 mg QDS for 5 to 7 days (preferred in pregnancy)

Impetigo and Eczema with visible signs of infection

Advise on the importance of personal hygiene, for example, not to share communal items such as towels, flannels, etc.

Advise patient to gently wash the affected areas with soap and water.

Children and adults should stay away from school and other childcare facilities or work until lesions are healed, dry and crusted over or 48 hours after initiation of antibiotics.[10]

Do not offer combination treatment with topical and oral antibiotics or extended or repeated use of topical antibiotics.

Refer people with signs or symptoms of more serious illness or if immunocompromised.

- Bullous impetigo especially children less than 1 year old
- Recurs frequently
- Systemically unwell
- High risk of complications

Recurring impetigo: take a skin swab and consider a nasal swab with treatment for decolonisation.

NICE impetigo 2-page visual summary

Last updated: Dec 2021

Self care: remove the crusts gently and regularly using [OTC] antibacterial liquid soap or skin wash and water.

First choice, non-severe infection: hydrogen peroxide 1% cream TDS for 5 days.

If not suitable and only when a few localised lesions are present

Second choice: fusidic acid 2% cream TDS for 5 days

or
if resistance topical mupirocin 2% TDS for 5 days.

For more extensive infection: flucloxacillin 500mg QDS for 7 days.

In penicillin allergy: clarithromycin 500mg BD for 7 days

or
erythromycin 500mg QDS for 7 days (preferred in pregnancy).

In-growing nail infection (Paronychia)

In-growing nails require wound debridement and swab. Lateral nail ablation recommended when infection settled if the problem is recurrent. Self care for acute paronychia, advise patient to apply a moist heat 3-4 times daily, keep the affected area clean and dry and take paracetamol or NSAID as required for pain relief.[11] Consider swab if the paronychia is enlarging, recurrent, does not respond to treatment within 2-3 days, the person is systemically unwell, history of MRSA, immunocompromised or diabetic.[11] Last updated: Dec 2021	**First line**: flucloxacillin 500 mg QDS for 7 days. **In penicillin allergy**: clarithromycin 500 mg BD **or** erythromycin (preferred in pregnancy) 500 mg QDS for 7 days.

Leg ulcer

Bacteria will always be present. [1,2,3] Check MRSA status. [3] Antibiotics do not improve healing unless there is an active infection: cellulitis, increased pain, pyrexia. [12] Reassess if the infection worsens, does not start to improve within 2 to 3 days, or the person becomes systemically unwell or has severe pain. Take account of previous antibiotic use, which may have led to resistant bacteria. Consider sending a sample from the leg ulcer after cleaning [12]. Review treatment choice with culture and sensitivity results. [2,3,12] Refer to local district nurse team as per local guidance. [3] Last updated: Dec 2021	If patient is febrile and unwell admit for IV treatment. [2] **First line**: flucloxacillin 500 mg QDS for 7 days. If slow response, continue for another 7 days [1,2,3,4] **or** if flucloxacillin is unsuitable, doxycycline 200 mg on day 1, then 100 mg daily for 7 days in total. **Penicillin allergy**: clarithromycin 500 mg BD for 7 days. If slow response, continue for another 7 days. [1,2,3,4] **Penicillin allergy in pregnancy**: erythromycin 500 mg QDS for 7 days. **Second line**: co-amoxiclav 500/125 mg TDS for 7 days **or** co-trimoxazole 960 mg BD for 7 days.

Lice – body, crab, or pubic

Consider that other sexually transmitted infections may co-exist with lice. Hot wash (50°C) all clothes and bedding or dry clean following first treatment. Reapply treatment to any areas washed in between application duration e.g. hands. Last updated: Dec 2021	Consider self-care. [OTC] Malathion 0.5% aqueous solution. Apply to all hairy parts of the body and wash off after 12 hours or overnight and repeat after 7 days.

Lice – head

Only treat if live moving lice are found or black or brown eggs, not empty white egg cases. Encourage self-care of this condition. A course involves two treatments one week apart. Reinfection is more probable than treatment failure. Combs should be thoroughly cleaned after each use. Use a different product for subsequent courses following treatment failure. Avoid shampoos and do not use insecticides as prophylaxis. Last reviewed: Dec 2021	Consider self-care. Wet combing **and either** [OTC] dimeticone 4% lotion **or** [OTC] malathion 0.5% aqueous solution.

Lyme disease [1]

Risk is increased in high prevalence areas (in the UK: South of England and Scottish Highlands) and the longer the tick is attached to the skin. Give safety net advice about erythema migrans and other possible symptoms that may occur within one month of tick removal. Diagnose and treat Lyme disease without laboratory testing in people with erythema migrans. **Laboratory testing**: Only send serum for ELISA if there is a clinical suspicion of Lyme disease in people WITHOUT erythema migrans. If sending serum please include the following data (sample may be rejected without this information): date of tick bite, geographical location of tick bite, relevant occupational or other exposure history, travel history, treatment history and clinical presentation. **Emergency referral required in people with focal symptoms but do not delay treatment**. For other suspected Lyme disease such as neuroborreliosis (CN palsy, radiculopathy) seek specialist advice. **Seek specialist advice** in under 18s unless they have a single erythema migrans lesion and no other symptoms. If symptoms worsen during treatment, assess for an allergic reaction to the antibiotic. Jarisch-Herxheimer reaction may cause exacerbation but does not usually warrant stopping treatment.[17] Reaction may start within 24 hours and symptoms include fever, chills, muscle pain and headache and is usually self-limiting. NICE (2018). Lyme disease Last updated: Dec 2021	**Treat erythema migrans empirically; serology is often negative early in infection** [17] **First line**: doxycycline 100 mg BD for 21 days. **Alternative**: amoxicillin 1 g TDS for 21 days (preferred in pregnancy) **or** **if amoxicillin and doxycycline are not suitable**: azithromycin 500 mg daily for 17 days.

Mastitis, lactational

Milk stasis is the primary cause of mastitis in lactating women causing an inflammatory response which may lead to infection. [13] An ineffective latch may also cause mastitis and making sure that the infant is attached to the breast correctly can reduce risk/prevent recurrence.

Women should continue feeding including from the affected breast. The possibility of hypersensitive reactions must be considered in breast feeding infants.

Self care using a warm compress or bathing in warm water to help milk flow. Express remaining milk by pump or by hand after feeding.

An oral antibiotic can be prescribed if there is a nipple fissure that is infected or symptoms have not improved with self care after 12-24 hours despite effective milk removal.[13]

If symptoms do not improve after 48 hours consider differential diagnosis (breast abscess or breast cancer) and the need for referral. A second line antibiotic may be considered.[13]

Surgical drainage may be required.

Laboratory testing: superficial swab of pus if present. Do not send milk specimens.

Arrange urgent 2-week wait referral if there is an underlying mass or breast cancer is suspected.

Last updated: Dec 2021

First line: flucloxacillin 500 mg QDS for 14 days.

Penicillin allergy: erythromycin (preferred in pregnancy and breastfeeding) 500 mg QDS for 14 days

or
clarithromycin 500 mg BD for 14 days.

Second line: co-amoxiclav 500/125 mg TDS for 10-14 days

Seek specialist advice if allergic to penicillin.[13]

Mastitis, non-lactational

Mastitis is usually accompanied by infection which may be central, subareolar or peripheral. Surgical drainage may be required. **Self care** using a warm compress on the breast or bathe/shower in warm water to relieve pain. **Identify and manage pre-disposing factors** such as candida infection or eczema. **Breast abscess** is a severe complication of mastitis. Refer urgently to a general surgeon for ultrasound, drainage and cultures. **Laboratory testing**: Superficial swab of pus if present. Arrange urgent 2-week wait referral if there is an underlying mass or breast cancer is suspected.[13] Last updated: Dec 2021	**Prescribe an oral antibiotic for all women with non-lactational mastitis**: co-amoxiclav 500/125 mg TDS for 10-14 days **Penicillin allergy:** metronidazole 400mg TDS **and either** Erythromycin 250-500mg QDS for 10 to 14 days **or** clarithromycin 500mg BD for 10 to 14 days[13]

Perianal abscess

Antibiotics are not an alternative to surgical drainage. [14] The development of a necrotising, soft-tissue infection is more common in the elderly, patients with diabetes, and immunosuppressed individuals and has been reported to have a mortality between 25% and 35%. [14] **If necrotising infection is suspected, urgent referral is required.** Antibiotics should be used as an adjunctive treatment for patients with diabetes, immuno-compromise, chronic debilitation, older age, history of cardiac valvular disease, or significant associated cellulitis. [14] Last updated: Dec 2021	Refer for surgical drainage. [14] **Adjunctive treatment:** co-amoxiclav 500/125 mg TDS for 5 days **or** both ciprofloxacin 500 mg BD for 5 days and metronidazole 400 mg TDS for 5 days.

Post-operative wound infections [15]

Infection within 30 days of surgery should be referred back to the responsible Trust. Low threshold for admission. Discuss with a microbiologist or the on-call surgical team.

Consider the site and severity of infection.

A brief course of systemic antimicrobial therapy may be indicated following clean operations on the trunk, head and neck, or extremities [15].

Post-operative infections following operations on the axilla, gastrointestinal tract, perineum, or female genital tract: seek microbiology advice.

Post-operative infections following operations on the spine or involving a prosthetic implant: avoid prescribing antibiotics and refer urgently back to the surgeon.

Laboratory testing: swab wound for culture and sensitivity. Consider nature of the operation and likely pathogens including MRSA status. Review treatment with culture and sensitivity results.

Last reviewed: May 2021

If oral treatment is considered appropriate: flucloxacillin 500 mg QDS for 7 days.

Penicillin allergy: clarithromycin 500 mg BD for 7 days.

Penicillin allergy in pregnancy: seek microbiology advice.

Rosacea

Advise on self care management including avoiding triggers, using adequate sun protection, non-oily emollients and gentle soap-free over the counter cleansers. Avoid topical benzoyl peroxide. Refer to dermatology specialist patients who have failed to respond to two courses of 6 months oral treatment. NICE CKS - Rosacea Last updated: Dec 2021	**First line for mild to moderate papules/pustules**: ivermectin 10 mg/g (Soolantra) cream applied daily for 8-12 weeks. **Alternative before oral antibiotics**: metronidazole cream 0.75% applied daily for 8 weeks. **or** Azelaic acid 15% applied BD. Discontinue if no improvement after 2 months (preferred in pregnancy or breastfeeding) **Second line for moderate to severe papules/pustules**: topical treatment as per mild to moderate papules/pustules a**nd either** doxycycline MR 40 mg OD for 8-12 weeks, dose to be taken in the morning, consider discontinuation if no response after 6 weeks. **or** oxytetracycline 500 mg BD for 6-12 weeks. Repeat courses if necessary **or** erythromycin 500mg BD (preferred in pregnancy or breastfeeding) **or** doxycycline 100 mg OD. Review at 12 weeks. **Note**: unlicensed; photosensitivity reported **Pregnancy**: use topical treatment if the benefit outweighs the potential risk or contact dermatology.

Scabies

Treat whole body from the ear and chin downwards and under nails. [1,2,3] If using permethrin and the patient is elderly or immunosuppressed, or if treating with malathion also treat face and scalp. [1,2,4] Whole body must be washed thoroughly with soap and water after application duration. Re-application may be required if hands or other areas are washed within treatment time. Treat all home and sexual contacts from the previous 2 months at the same time (within 24 hrs). [1,2,4] Itch may persist for 4-6 weeks following effective treatment. Crotamiton or aqueous cream may be beneficial. Sedative antihistamines may help with nocturnal itch. These may be purchased over the counter. [4] Hot wash (50°C] all clothes and bedding or dry clean following first treatment. [4] If the patient is institutionalised refer to the Community Infection Prevention and Control Team. [4] Last updated: Dec 2021	**First line**: permethrin 5% cream two applications left on for 12 hours one week apart. [1,2,3] **Permethrin allergy**: malathion 0.5% aqueous liquid two applications left on for 24 hours one week apart. [1,2,3]

Scabies, crusted

Refer to dermatology for specialist advice. [3] Last reviewed: Dec 2021	

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